

# HSS DRILL BITS

## HSS Drill Bits 118° General Purpose Black Oxide Fractional Sizes

- Fastenal Premium drill bits and Norseman Type 115 drill bits are general purpose drill bits that perform well in a variety of ferrous metal drilling applications. The black surface treatment prevent chip welding and increases abrasion resistance.
- Cle-Line 1899 drill bits are designed for general purpose drilling and a variety of ferrous metal drilling applications.
- Chicago-Latrobe 150 drill bits are production drill bits made of premium steel. They are designed for a wide range of operation conditions and various materials. The black oxide finish offers increased wear resistance and improves lubricity, improving chip flow.



Cutting Tools



| Fractional Sizes |           |             |               | Fastenal Premium HSS Black |             | CleLine 1899 HSS Black |             | Norseman T115 HSS Black |             | C/L 150 HSS Black |             |
|------------------|-----------|-------------|---------------|----------------------------|-------------|------------------------|-------------|-------------------------|-------------|-------------------|-------------|
| Size             | Decimal   | Flute Lgth. | Overall Lgth. | Part No.                   | Price /Each | Part No.               | Price /Each | Part No.                | Price /Each | Part No.          | Price /Each |
| 1/64"            | 0.015625" | 3/16"       | 3/4"          |                            |             |                        |             | 0308281                 | \$2.21      | 0355429           | \$1.52      |
| 1/32"            | 0.03125"  | 1/2"        | 1-3/8"        |                            |             | 0354841                | \$0.86      | 0308282                 | 1.43        | 0355430           | 0.82        |
| 3/64"            | 0.0469"   | 3/8"        | 1-3/4"        |                            |             | 0354842                | 0.81        | 0308391                 | 0.92        | 7004486           | 1.15        |
| 1/16"            | 0.0625"   | 7/8"        | 1-7/8"        | 53005                      | \$0.97      | 7012453                | 1.04        | 0308392                 | 1.11        | 7004487           | 1.15        |
| 5/64"            | 0.0781"   | 1"          | 2"            | 53006                      | 0.97        | 7012459                | 1.04        | 0308393                 | 1.11        | 7004488           | 1.15        |
| 3/32"            | 0.0938"   | 1-1/4"      | 2-1/4"        | 53007                      | 0.97        | 7012466                | 1.04        | 0308394                 | 1.11        | 7004489           | 1.15        |
| 7/64"            | 0.1094"   | 1-1/2"      | 2-5/8"        | 53008                      | 0.99        | 7012473                | 1.06        | 0308395                 | 1.13        | 7004490           | 1.15        |
| 1/8"             | 0.125"    | 1-5/8"      | 2-3/4"        | 53009                      | 1.05        | 7012479                | 1.13        | 0308396                 | 1.20        | 7004491           | 1.20        |
| 9/64"            | 0.1406"   | 1-3/4"      | 2-7/8"        | 53010                      | 1.34        | 7012483                | 1.35        | 0308397                 | 1.36        | 7004492           | 1.27        |
| 5/32"            | 0.1562"   | 2"          | 3-1/8"        | 53011                      | 1.22        | 7012489                | 1.31        | 0308398                 | 1.40        | 7004493           | 1.45        |
| 11/64"           | 0.1719"   | 2-1/8"      | 3-1/4"        | 53012                      | 1.35        | 7012495                | 1.45        | 0308399                 | 1.54        | 7004494           | 1.53        |
| 3/16"            | 0.1875"   | 2-5/16"     | 3-1/2"        | 53013                      | 1.56        | 7012501                | 1.67        | 0308400                 | 1.78        | 7004495           | 1.72        |
| 13/64"           | 0.2031"   | 2-7/16"     | 3-5/8"        | 53014                      | 1.72        | 7012508                | 1.85        | 0308401                 | 1.97        | 7004496           | 1.89        |
| 7/32"            | 0.2188"   | 2-1/2"      | 3-3/4"        | 53015                      | 1.90        | 7012513                | 2.04        | 0308402                 | 2.17        | 7004497           | 1.96        |
| 15/64"           | 0.2344"   | 2-5/8"      | 3-7/8"        | 53016                      | 2.04        | 7012517                | 2.19        | 0308403                 | 2.33        | 7004498           | 2.14        |
| 1/4"             | 0.25"     | 2-3/4"      | 4"            | 53017                      | 2.29        | 7012521                | 2.46        | 0308404                 | 2.62        | 7004499           | 2.28        |
| 17/64"           | 0.2656"   | 2-7/8"      | 4-1/8"        | 53018                      | 2.83        | 7012524                | 3.37        | 0308405                 | 3.24        | 7004500           | 2.62        |
| 9/32"            | 0.2812"   | 2-15/16"    | 4-1/4"        | 53019                      | 3.14        | 7012529                | 2.00        | 0308406                 | 3.59        | 7004501           | 2.79        |
| 19/64"           | 0.2969"   | 3-1/16"     | 4-3/8"        | 53020                      | 3.44        | 7012532                | 3.69        | 0308407                 | 3.93        | 7004502           | 3.23        |
| 5/16"            | 0.3125"   | 3-3/16"     | 4-1/2"        | 53021                      | 3.53        | 7012534                | 3.79        | 0308408                 | 4.04        | 7004503           | 3.49        |
| 21/64"           | 0.3281"   | 3-5/16"     | 4-5/8"        | 53022                      | 3.89        | 7012537                | 4.17        | 0308409                 | 4.45        | 7004504           | 3.78        |
| 11/32"           | 0.3438"   | 3-7/16"     | 4-3/4"        | 53023                      | 4.52        | 7012540                | 4.84        | 0308410                 | 5.16        | 7004505           | 4.23        |
| 23/64"           | 0.3594"   | 3-1/2"      | 4-7/8"        | 53024                      | 4.99        | 7012543                | 5.35        | 0308411                 | 5.70        | 7004506           | 4.82        |
| 3/8"             | 0.375"    | 3-5/8"      | 5"            | 53025                      | 5.13        | 7012545                | 5.50        | 0308412                 | 5.87        | 7004507           | 4.91        |
| 25/64"           | 0.3906"   | 3-3/4"      | 5-1/8"        | 53026                      | 5.74        | 7012441                | 6.15        | 0308413                 | 6.56        | 7004508           | 5.65        |
| 13/32"           | 0.4062"   | 3-7/8"      | 5-1/4"        | 53027                      | 5.88        | 7012442                | 6.30        | 0308414                 | 6.72        | 7004509           | 5.78        |
| 27/64"           | 0.4219"   | 3-15/16"    | 5-3/8"        | 53028                      | 6.49        | 7012443                | 6.96        | 0308415                 | 7.42        | 7004510           | 6.46        |
| 7/16"            | 0.4375"   | 4-1/16"     | 5-1/2"        | 53029                      | 6.98        | 7012551                | 7.48        | 0308416                 | 7.98        | 7004511           | 6.69        |
| 29/64"           | 0.4531"   | 4-3/16"     | 5-5/8"        | 53030                      | 8.10        | 7012444                | 8.68        | 0308417                 | 9.25        | 7004512           | 7.66        |
| 15/32"           | 0.4688"   | 4-5/16"     | 5-3/4"        | 53031                      | 8.22        | 7012552                | 8.81        | 0308418                 | 9.40        | 7004513           | 8.17        |
| 31/64"           | 0.4844"   | 4-3/8"      | 5-7/8"        | 53032                      | 8.58        | 7012553                | 9.20        | 0308419                 | 9.81        | 7004514           | 8.46        |
| 1/2"             | 0.5"      | 4-1/2"      | 6"            | 53033                      | 8.70        | 7012554                | 9.33        | 0308420                 | 9.95        | 7004515           | 8.53        |
| 33/64"           | 0.5156"   | 4-13/16"    | 6-5/8"        |                            |             |                        |             | 0310412                 |             | 7004516           | 18.41       |
| 17/32"           | 0.5312"   | 4-13/16"    | 6-5/8"        |                            |             |                        |             | 0310413                 |             | 7004517           | 19.00       |
| 35/64"           | 0.5469"   | 4-13/16"    | 6-5/8"        |                            |             |                        |             | 0310414                 |             | 7004518           | 20.93       |
| 9/16"            | 0.5625"   | 4-13/16"    | 6-5/8"        |                            |             |                        |             | 0310415                 |             | 7004519           | 21.28       |
| 37/64"           | 0.5781"   | 4-13/16"    | 6-5/8"        |                            |             |                        |             | 0310416                 |             | 7004520           | 21.81       |
| 19/32"           | 0.5938"   | 5-3/16"     | 7-1/8"        |                            |             |                        |             | 0310417                 |             | 7004521           | 22.41       |
| 39/64"           | 0.6094"   | 5-3/16"     | 7-1/8"        |                            |             |                        |             | 0310418                 |             | 7004522           | 23.60       |
| 5/8"             | 0.625"    | 5-3/16"     | 7-1/8"        |                            |             |                        |             | 0310419                 |             | 7004523           | 23.60       |
| 41/64"           | 0.6406"   | 5-3/16"     | 7-1/8"        |                            |             |                        |             | 0310420                 |             | 7004524           | 25.67       |
| 21/32"           | 0.6562"   | 5-3/16"     | 7-1/8"        |                            |             |                        |             | 0310421                 |             | 7004525           | 26.87       |
| 43/64"           | 0.6719"   | 5-3/16"     | 7-1/8"        |                            |             |                        |             | 0310422                 |             | 7004526           | 29.23       |
| 11/16"           | 0.6875"   | 5-3/16"     | 7-1/8"        |                            |             |                        |             | 0310423                 |             | 7004527           | 29.39       |

| Number Sizes |         |             |               | Fastenal Premium HSS Black |             | CleLine 1899 HSS Black |             | Norseman T115 HSS Black |             | C/L 150 HSS Black |             |
|--------------|---------|-------------|---------------|----------------------------|-------------|------------------------|-------------|-------------------------|-------------|-------------------|-------------|
| Size         | Decimal | Flute Lgth. | Overall Lgth. | Part No.                   | Price /Each | Part No.               | Price /Each | Part No.                | Price /Each | Part No.          | Price /Each |
| #1           | 0.228"  | 2-5/8"      | 3-7/8"        | 53301                      | \$2.23      | 7012515                | \$2.39      | 0308421                 | \$2.55      | 7004528           | \$2.27      |
| #2           | 0.221"  | 2-5/8"      | 3-7/8"        | 53302                      | 2.23        | 7012514                | 2.39        | 0308422                 | 2.55        | 7004529           | 2.27        |
| #3           | 0.213"  | 2-1/2"      | 3-3/4"        | 53303                      | 2.23        | 7012512                | 2.39        | 0308423                 | 2.55        | 7004530           | 2.07        |
| #4           | 0.209"  | 2-1/2"      | 3-3/4"        | 53304                      | 2.23        | 7012511                | 2.39        | 0308424                 | 2.55        | 7004531           | 2.07        |
| #5           | 0.2055" | 2-1/2"      | 3-3/4"        | 53305                      | 2.23        | 7012510                | 2.39        | 0308425                 | 2.55        | 7004532           | 2.07        |

# HSS DRILL BITS

## HSS Drill Bits Cont.

Cutting Tools



| Number Sizes |         |             |               | Fastenal Premium HSS Black |             | CleLine 1899 HSS Black |             | Norseman T115 HSS Black |             | C/L 150 HSS Black |             |
|--------------|---------|-------------|---------------|----------------------------|-------------|------------------------|-------------|-------------------------|-------------|-------------------|-------------|
| Size         | Decimal | Flute Lgth. | Overall Lgth. | Part No.                   | Price /Each | Part No.               | Price /Each | Part No.                | Price /Each | Part No.          | Price /Each |
| #6           | 0.204"  | 2-1/2"      | 3-3/4"        | 53306                      | \$2.23      | 7012509                | \$2.39      | 0308426                 | \$2.55      | 7004533           | \$2.07      |
| #7           | 0.201"  | 2-7/16"     | 3-5/8"        | 53307                      | 1.65        | 7012507                | 1.77        | 0308427                 | 1.88        | 7004534           | 1.85        |
| #8           | 0.199"  | 2-7/16"     | 3-5/8"        | 53308                      | 1.65        | 7012506                | 1.77        | 0308428                 | 1.88        | 7004535           | 1.85        |
| #9           | 0.196"  | 2-7/16"     | 3-5/8"        | 53309                      | 1.80        | 7012505                | 1.93        | 0308429                 | 2.06        | 7004536           | 1.85        |
| #10          | 0.1935" | 2-7/16"     | 3-5/8"        | 53310                      | 1.80        | 7012504                | 1.93        | 0308430                 | 2.06        | 7004537           | 1.85        |
| #11          | 0.191"  | 2-5/16"     | 3-1/2"        | 53311                      | 1.80        | 7012503                | 1.93        | 0308431                 | 2.06        | 7004538           | 1.77        |
| #12          | 0.189"  | 2-5/16"     | 3-1/2"        | 53312                      | 1.80        | 7012502                | 1.93        | 0308432                 | 2.06        | 7004539           | 1.77        |
| #13          | 0.185"  | 2-5/16"     | 3-1/2"        | 53313                      | 1.59        | 7012500                | 1.71        | 0308433                 | 1.82        | 7004540           | 1.79        |
| #14          | 0.182"  | 2-3/16"     | 3-3/8"        | 53314                      | 1.59        | 7012499                | 1.71        | 0308434                 | 1.82        | 7004541           | 1.79        |
| #15          | 0.18"   | 2-3/16"     | 3-3/8"        | 53315                      | 1.59        | 7012498                | 1.71        | 0308435                 | 1.82        | 7004542           | 1.79        |
| #16          | 0.177"  | 2-3/16"     | 3-3/8"        | 53316                      | 1.59        | 7012497                | 1.71        | 0308436                 | 1.82        | 7004543           | 1.72        |
| #17          | 0.173"  | 2-3/16"     | 3-3/8"        | 53317                      | 1.59        | 7012496                | 1.71        | 0308437                 | 1.82        | 7004544           | 1.72        |
| #18          | 0.1695" | 2-1/8"      | 3-1/4"        | 53318                      | 1.43        | 7012494                | 1.54        | 0308438                 | 1.64        | 7004545           | 1.55        |
| #19          | 0.166"  | 2-1/8"      | 3-1/4"        | 53319                      | 1.43        | 7012493                | 1.54        | 0308439                 | 1.64        | 7004546           | 1.55        |
| #20          | 0.161"  | 2-1/8"      | 3-1/4"        | 53320                      | 1.43        | 7012492                | 1.54        | 0308440                 | 1.64        | 7004547           | 1.55        |
| #11          | 0.191"  | 2-5/16"     | 3-1/2"        | 53321                      | 1.29        | 7012491                | 1.39        | 0308441                 | 1.48        | 7004548           | 1.43        |
| #22          | 0.157"  | 2"          | 3-1/8"        | 53322                      | 1.29        | 7012490                | 1.39        | 0308442                 | 1.48        | 7004549           | 1.43        |
| #23          | 0.154"  | 2"          | 3-1/8"        | 53323                      | 1.29        | 7012488                | 1.39        | 0308443                 | 1.48        | 7004550           | 1.43        |
| #24          | 0.152"  | 2"          | 3-1/8"        | 53324                      | 1.29        | 7012487                | 1.39        | 0308444                 | 1.48        | 7004551           | 1.43        |
| #25          | 0.1495" | 1-7/8"      | 3"            | 53325                      | 1.19        | 7012486                | 1.28        | 0308445                 | 1.36        | 7004552           | 1.41        |
| #26          | 0.147"  | 1-7/8"      | 3"            | 53326                      | 1.19        | 7012485                | 1.28        | 0308446                 | 1.36        | 7004553           | 1.41        |
| #27          | 0.144"  | 1-7/8"      | 3"            | 53327                      | 1.19        | 7012484                | 1.28        | 0308447                 | 1.36        | 7004554           | 1.41        |
| #28          | 0.1405" | 1-3/4"      | 2-7/8"        | 53328                      | 1.19        | 7012482                | 1.28        | 0308448                 | 1.36        | 7004555           | 1.21        |
| #29          | 0.136"  | 1-3/4"      | 2-7/8"        | 53329                      | 1.19        | 7012481                | 1.28        | 0308449                 | 1.36        | 7004556           | 1.21        |
| #30          | 0.1285" | 1-5/8"      | 2-3/4"        | 53330                      | 1.19        | 7012480                | 1.28        | 0308450                 | 1.36        | 7004557           | 1.21        |
| #31          | 0.12"   | 1-5/8"      | 2-3/4"        | 53331                      | 1.10        | 7012478                | 1.18        | 0308451                 | 1.25        | 7004558           | 1.21        |
| #32          | 0.116"  | 1-5/8"      | 2-3/4"        | 53332                      | 1.10        | 7012477                | 1.18        | 0308452                 | 1.25        | 7004559           | 1.21        |
| #33          | 0.113"  | 1-1/2"      | 2-5/8"        | 53333                      | 1.10        | 7012476                | 1.18        | 0308453                 | 1.25        | 7004560           | 1.21        |
| #34          | 0.111"  | 1-1/2"      | 2-5/8"        | 53334                      | 1.10        | 7012475                | 1.18        | 0308454                 | 1.25        | 7004561           | 1.21        |
| #35          | 0.11"   | 1-1/2"      | 2-5/8"        | 53335                      | 1.05        | 7012474                | 1.13        | 0308455                 | 1.20        | 7004562           | 1.21        |
| #36          | 0.1065" | 1-7/16"     | 2-1/2"        | 53336                      | 1.05        | 7012472                | 1.13        | 0308456                 | 1.20        | 7004563           | 1.19        |
| #37          | 0.104"  | 1-7/16"     | 2-1/2"        | 53337                      | 1.05        | 7012471                | 1.13        | 0308457                 | 1.20        | 7004564           | 1.19        |
| #38          | 0.1015" | 1-7/16"     | 2-1/2"        | 53338                      | 1.05        | 7012470                | 1.13        | 0308458                 | 1.20        | 7004565           | 1.14        |
| #39          | 0.0995" | 1-3/8"      | 2-3/8"        | 53339                      | 1.05        | 7012469                | 1.13        | 0308459                 | 1.20        | 7004566           | 1.14        |
| #40          | 0.098"  | 1-3/8"      | 2-3/8"        | 53340                      | 1.05        | 7012468                | 1.13        | 0308460                 | 1.20        | 7004567           | 1.14        |
| #41          | 0.096"  | 1-3/8"      | 2-3/8"        | 53341                      | 1.05        | 7012467                | 1.13        | 0308461                 | 1.20        | 7004568           | 1.14        |
| #42          | 0.0935" | 1-1/4"      | 2-1/4"        | 53342                      | 1.07        | 7012465                | 1.15        | 0308462                 | 1.22        | 7004569           | 1.14        |
| #43          | 0.089"  | 1-1/4"      | 2-1/4"        | 53343                      | 1.07        | 7012464                | 1.15        | 0308463                 | 1.22        | 7004570           | 1.14        |
| #44          | 0.086"  | 1-1/8"      | 2-1/8"        | 53344                      | 1.07        | 7012463                | 1.15        | 0308464                 | 1.22        | 7004571           | 1.14        |
| #45          | 0.082"  | 1-1/8"      | 2-1/8"        | 53345                      | 1.07        | 7012462                | 1.15        | 0308465                 | 1.22        | 7004572           | 1.14        |
| #46          | 0.081"  | 1-1/8"      | 2-1/8"        | 53346                      | 1.07        | 7012461                | 1.15        | 0308466                 | 1.22        | 7004573           | 1.14        |
| #47          | 0.0785" | 1"          | 2"            | 53347                      | 1.07        | 7012460                | 1.15        | 0308467                 | 1.22        | 7004574           | 1.14        |
| #48          | 0.076"  | 1"          | 2"            | 53348                      | 1.07        | 7012458                | 1.15        | 0308468                 | 1.22        | 7004575           | 1.14        |
| #49          | 0.073"  | 1"          | 2"            | 53349                      | 1.07        | 7012457                | 1.15        | 0308469                 | 1.22        | 7004576           | 1.14        |
| #50          | 0.07"   | 1"          | 2"            | 53350                      | 1.07        | 7012456                | 1.15        | 0308470                 | 1.22        | 7004577           | 1.14        |
| #51          | 0.067"  | 1"          | 2"            | 53351                      | 1.07        | 7012455                | 1.15        | 0308471                 | 1.22        | 7004578           | 1.14        |
| #52          | 0.0635" | 7/8"        | 1-7/8"        | 53352                      | 1.07        | 7012454                | 1.15        | 0308472                 | 1.22        | 7004579           | 1.14        |
| #53          | 0.0595" | 7/8"        | 1-7/8"        | 53353                      | 1.18        | 7012452                | 1.27        | 0308473                 | 1.35        | 7004580           | 1.14        |
| #54          | 0.055"  | 7/8"        | 1-7/8"        | 53354                      | 1.18        | 7012451                | 1.27        | 0308474                 | 1.35        | 7004581           | 1.14        |
| #55          | 0.052"  | 7/8"        | 1-7/8"        | 53355                      | 1.18        | 7012450                | 1.27        | 0308475                 | 1.35        | 7004582           | 1.14        |
| #56          | 0.0465" | 3/8"        | 1-3/4"        | 53356                      | 1.18        | 7012449                | 1.27        | 0308476                 | 1.35        | 7004583           | 1.14        |
| #57          | 0.043"  | 3/8"        | 1-3/4"        | 53357                      | 1.20        | 7012448                | 1.29        | 0308477                 | 1.37        | 7004584           | 1.14        |
| #58          | 0.042"  | 11/16"      | 1-5/8"        | 53358                      | 1.20        | 7012447                | 1.29        | 0308478                 | 1.37        | 7004585           | 1.14        |
| #59          | 0.041"  | 11/16"      | 1-5/8"        | 53359                      | 1.20        | 7012446                | 1.29        | 0308479                 | 1.37        | 7004586           | 1.14        |
| #60          | 0.04"   | 11/16"      | 1-5/8"        | 53360                      | 1.20        | 7012445                | 1.29        | 0308480                 | 1.37        | 7004587           | 1.14        |
| #61          | 0.039"  | 11/16"      | 1-5/8"        | 53361                      | 1.47        |                        |             | 0308481                 | 1.68        | 7004588           | 1.19        |
| #62          | 0.038"  | 5/8"        | 1-1/2"        | 53362                      | 1.47        |                        |             | 0308482                 | 1.68        | 7004589           | 1.19        |
| #63          | 0.037"  | 5/8"        | 1-1/2"        | 53363                      | 1.47        |                        |             | 0308483                 | 1.68        | 7004590           | 1.19        |
| #64          | 0.036"  | 5/8"        | 1-1/2"        | 53364                      | 1.47        |                        |             | 0308484                 | 1.68        | 7004591           | 1.19        |
| #65          | 0.035"  | 5/8"        | 1-1/2"        | 53365                      | 1.47        |                        |             | 0308485                 | 1.68        | 7004592           | 1.19        |
| #66          | 0.033"  | 1/2"        | 1-3/8"        | 53366                      | 1.47        |                        |             | 0308486                 | 1.68        | 7004593           | 1.19        |
| #67          | 0.032"  | 1/2"        | 1-3/8"        | 53367                      | 1.47        |                        |             | 0308487                 | 1.68        | 7004594           | 1.19        |
| #68          | 0.031"  | 1/2"        | 1-3/8"        | 53368                      | 1.78        |                        |             | 0308488                 | 2.04        | 7004595           | 1.19        |
| #69          | 0.0292" | 1/2"        | 1-3/8"        | 53369                      | 1.88        |                        |             | 0308489                 | 2.15        | 7004596           | 1.26        |
| #70          | 0.028"  | 3/8"        | 1-1/4"        | 53370                      | 1.88        |                        |             | 0308490                 | 2.15        | 7004597           | 1.26        |
| #71          | 0.026"  | 3/8"        | 1-1/4"        | 53371                      | 2.36        |                        |             | 0308491                 | 2.70        | 7004598           | 1.56        |

# HSS DRILL BITS

## HSS Drill Bits Cont.



Cutting Tools

| Number Sizes |         |             |               | Fastenal Premium HSS Black |             | CleLine 1899 HSS Black |             | Norseman T115 HSS Black |             | C/L 150 HSS Black |             |
|--------------|---------|-------------|---------------|----------------------------|-------------|------------------------|-------------|-------------------------|-------------|-------------------|-------------|
| Size         | Decimal | Flute Lgth. | Overall Lgth. | Part No.                   | Price /Each | Part No.               | Price /Each | Part No.                | Price /Each | Part No.          | Price /Each |
| #72          | 0.025"  | 5/16"       | 1-1/8"        | 53372                      | \$2.36      |                        |             | 0308492                 | \$2.70      | 7004599           | \$1.56      |
| #73          | 0.024"  | 1/4"        | 1"            | 53373                      | 2.36        |                        |             | 0308493                 | 2.70        | 7004600           | 1.56        |
| #74          | 0.0225" | 1/4"        | 1"            | 53374                      | 2.36        |                        |             | 0308494                 | 2.70        | 7004601           | 1.56        |
| #75          | 0.021"  | 1/4"        | 1"            | 53375                      | 2.36        |                        |             | 0308495                 | 2.70        | 7004602           | 1.56        |
| #76          | 0.02"   | 3/16"       | 7/8"          | 53376                      | 2.36        |                        |             | 0308496                 | 2.70        | 7004603           | 1.65        |
| #77          | 0.018"  | 3/16"       | 7/8"          | 53377                      | 2.36        |                        |             | 0308497                 | 2.70        | 7004604           | 2.01        |
| #78          | 0.016"  | 3/16"       | 7/8"          | 53378                      | 2.36        |                        |             | 0308498                 | 2.70        | 7004605           | 2.01        |
| #79          | 0.0145" | 1/8"        | 3/4"          | 53379                      | 2.91        |                        |             | 0308499                 | 3.32        | 7004606           | 2.13        |
| #80          | 0.0135" | 1/8"        | 3/4"          | 53380                      | 2.91        |                        |             | 0308500                 | 3.32        | 7004607           | 2.13        |

| Letter Sizes |         |             |               | Fastenal Premium HSS Black |             | CleLine 1899 HSS Black |             | Norseman T115 HSS Black |             | C/L 150 HSS Black |             |
|--------------|---------|-------------|---------------|----------------------------|-------------|------------------------|-------------|-------------------------|-------------|-------------------|-------------|
| Size         | Decimal | Flute Lgth. | Overall Lgth. | Part No.                   | Price /Each | Part No.               | Price /Each | Part No.                | Price /Each | Part No.          | Price /Each |
| Ltr A        | 0.234"  | 2-5/8"      | 3-7/8"        | 53401                      | \$2.29      | 7012516                | \$2.46:     | 0308501                 | \$2.62      | 7004608           | \$2.61      |
| Ltr B        | 0.238"  | 2-3/4"      | 4"            | 53402                      | 2.29        | 7012518                | 2.46:       | 0308502                 | 2.62        | 7004609           | 2.61        |
| Ltr C        | 0.242"  | 2-3/4"      | 4"            | 53403                      | 2.23        | 7012519                | 2.39:       | 0308503                 | 2.55        | 7004610           | 2.61        |
| Ltr D        | 0.246"  | 2-3/4"      | 4"            | 53404                      | 2.23        | 7012520                | 2.39:       | 0308504                 | 2.55        | 7004611           | 2.61        |
| Ltr E        | 0.25"   | 2-3/4"      | 4"            | 53405                      | 2.29        |                        |             | 0308505                 | 2.62        |                   |             |
| Ltr F        | 0.257"  | 2-7/8"      | 4-1/8"        | 53406                      | 2.70        | 7012522                | 2.89:       | 0308506                 | 3.08        | 7004612           | 2.75        |
| Ltr G        | 0.261"  | 2-7/8"      | 4-1/8"        | 53407                      | 2.90        | 7012523                | 3.11:       | 0308507                 | 3.31        | 7004613           | 3.11        |
| Ltr H        | 0.266"  | 2-7/8"      | 4-1/8"        | 53408                      | 2.95        | 7012525                | 3.16:       | 0308508                 | 3.37        | 7004614           | 3.11        |
| Ltr I        | 0.272"  | 2-7/8"      | 4-1/8"        | 53409                      | 2.95        | 7012526                | 3.16:       | 0308509                 | 3.37        | 7004615           | 3.11        |
| Ltr J        | 0.277"  | 2-7/8"      | 4-1/8"        | 53410                      | 3.33        | 7012527                | 3.57:       | 0308510                 | 3.81        | 7004616           | 3.33        |
| Ltr K        | 0.281"  | 2-15/16"    | 4-1/4"        | 53411                      | 3.33        | 7012528                | 3.57:       | 0308511                 | 3.81        | 7004617           | 3.62        |
| Ltr L        | 0.29"   | 2-15/16"    | 4-1/4"        | 53412                      | 3.69        | 7012530                | 3.96:       | 0308512                 | 4.22        | 7004618           | 3.62        |
| Ltr M        | 0.295"  | 3-1/16"     | 4-3/8"        | 53413                      | 3.89        | 7012531                | 4.17:       | 0308513                 | 4.45        | 7004619           | 3.87        |
| Ltr N        | 0.302"  | 3-1/16"     | 4-3/8"        | 53414                      | 3.89        | 7012533                | 4.17:       | 0308514                 | 4.45        | 7004620           | 3.87        |
| Ltr O        | 0.316"  | 3-3/16"     | 4-1/2"        | 53415                      | 3.93        | 7012535                | 4.21:       | 0308515                 | 4.49        | 7004621           | 3.87        |
| Ltr P        | 0.323"  | 3-5/16"     | 4-5/8"        | 53416                      | 4.27        | 7012536                | 4.58:       | 0308516                 | 4.88        | 7004622           | 4.39        |
| Ltr Q        | 0.332"  | 3-7/16"     | 4-3/4"        | 53417                      | 4.37        | 7012538                | 4.69:       | 0308517                 | 5.00        | 7004623           | 4.39        |
| Ltr R        | 0.339"  | 3-7/16"     | 4-3/4"        | 53418                      | 4.56        | 7012539                | 4.89:       | 0308518                 | 5.22        | 7004624           | 4.75        |
| Ltr S        | 0.348"  | 3-1/2"      | 4-7/8"        | 53419                      | 5.25        | 7012541                | 5.63:       | 0308519                 | 6.00        | 7004625           | 5.04        |
| Ltr T        | 0.358"  | 3-1/2"      | 4-7/8"        | 53420                      | 5.25        | 7012542                | 5.63:       | 0308520                 | 6.00        | 7004626           | 5.72        |
| Ltr U        | 0.368"  | 3-5/8"      | 5"            | 53421                      | 5.31        | 7012544                | 5.69:       | 0308521                 | 6.06        | 7004627           | 5.72        |
| Ltr V        | 0.377"  | 3-5/8"      | 5"            | 53422                      | 5.38        | 7012546                | 5.77:       | 0308522                 | 6.15        | 7004628           | 5.88        |
| Ltr W        | 0.386"  | 3-3/4"      | 5-1/8"        | 53423                      | 5.98        | 7012547                | 6.41:       | 0308523                 | 6.83        | 7004629           | 6.07        |
| Ltr X        | 0.397"  | 3-3/4"      | 5-1/8"        | 53424                      | 6.86        | 7012548                | 7.35:       | 0308524                 | 7.83        | 7004630           | 7.79        |
| Ltr Y        | 0.404"  | 3-7/8"      | 5-1/4"        | 53425                      | 7.16        | 7012549                | 7.68:       | 0308525                 | 8.19        | 7004631           | 8.87        |
| Ltr Z        | 0.413"  | 3-7/8"      | 5-1/4"        | 53426                      | 7.98        | 7012550                | 8.55:       | 0308526                 | 9.12        | 7004632           | 9.38        |



| Metric Sizes |         |             |               | CleLine 1899 HSS Black |             | C/L 150 HSS Black |             |
|--------------|---------|-------------|---------------|------------------------|-------------|-------------------|-------------|
| Size         | Decimal | Flute Lgth. | Overall Lgth. | Part No.               | Price /Each | Part No.          | Price /Each |
| 0.35mm       | 0.0138" | 4mm         | 19mm          | 7012555                | \$1.38:     | 7004633           | \$2.28      |
| 0.40mm       | 0.0157" | 5mm         | 20mm          | 7012556                | 1.38:       | 0355826           | 1.61        |
| 0.45mm       | 0.0177" | 5mm         | 20mm          | 7012557                | 1.38:       | 7004634           | 2.28        |
| 0.50mm       | 0.0197" | 6mm         | 22mm          | 7012558                | 1.38:       | 0355827           | 1.61        |
| 0.55mm       | 0.0217" | 7mm         | 24mm          | 7012559                | 1.20:       | 7004635           | 1.94        |
| 0.60mm       | 0.0236" | 7mm         | 24mm          | 7012560                | 1.20:       | 7004636           | 1.94        |
| 0.65mm       | 0.0256" | 8mm         | 26mm          | 7012561                | 1.13:       | 0355828           | 1.55        |
| 0.70mm       | 0.0276" | 9mm         | 28mm          | 7012562                | 1.13:       | 7004637           | 1.55        |
| 0.75mm       | 0.0295" | 9mm         | 28mm          | 7012563                | 1.13:       | 7004638           | 1.43        |
| 0.80mm       | 0.0315" | 10mm        | 30mm          | 7012564                | 1.12:       | 0355829           | 0.94        |
| 0.85mm       | 0.0335" | 10mm        | 30mm          | 7012565                | 1.12:       | 7004639           | 1.33        |
| 0.90mm       | 0.0354" | 11mm        | 32mm          | 7012566                | 1.12:       | 7004640           | 1.33        |
| 0.95mm       | 0.0374" | 11mm        | 32mm          | 7012567                | 1.12:       | 0355830           | 0.94        |
| 1.00mm       | 0.0394" | 12mm        | 34mm          | 7012568                | 0.86:       | 7004641           | 1.19        |
| 1.05mm       | 0.0413" | 12mm        | 34mm          | 7012569                | 0.81:       | 7004642           | 1.27        |
| 1.10mm       | 0.0433" | 14mm        | 36mm          | 7012570                | 0.81:       | 7004643           | 1.26        |
| 1.15mm       | 0.0453" | 14mm        | 36mm          | 7012571                | 0.81:       | 7004644           | 1.43        |
| 1.20mm       | 0.0472" | 16mm        | 38mm          | 7012572                | 0.81:       | 7004645           | 1.26        |
| 1.25mm       | 0.0492" | 16mm        | 38mm          | 7012573                | 0.81:       | 7004646           | 1.26        |



| Metric Sizes |         |             |               | CleLine 1899 HSS Black |             | C/L 150 HSS Black |             |
|--------------|---------|-------------|---------------|------------------------|-------------|-------------------|-------------|
| Size         | Decimal | Flute Lgth. | Overall Lgth. | Part No.               | Price /Each | Part No.          | Price /Each |
| 1.30mm       | 0.0512" | 16mm        | 38mm          | 7012574                | \$0.81:     | 7004647           | \$1.26      |
| 1.35mm       | 0.0531" | 18mm        | 40mm          | 7012575                | 0.81:       | 7004648           | 1.41        |
| 1.40mm       | 0.0551" | 18mm        | 40mm          | 7012576                | 0.81:       | 7004649           | 1.26        |
| 1.45mm       | 0.0571" | 18mm        | 40mm          | 7012577                | 0.81:       | 7004650           | 1.41        |
| 1.50mm       | 0.0591" | 18mm        | 40mm          | 7012578                | 0.81:       | 7004651           | 1.20        |
| 1.55mm       | 0.061"  | 20mm        | 43mm          | 7012579                | 0.81:       | 7004652           | 1.26        |
| 1.60mm       | 0.063"  | 20mm        | 43mm          | 7012580                | 0.81:       | 7004653           | 1.26        |
| 1.65mm       | 0.065"  | 20mm        | 43mm          | 7012581                | 0.81:       | 7004654           | 1.26        |
| 1.70mm       | 0.0669" | 20mm        | 43mm          | 7012582                | 0.81:       | 7004655           | 1.26        |
| 1.75mm       | 0.0689" | 22mm        | 46mm          | 7012583                | 0.81:       | 7004656           | 1.26        |
| 1.80mm       | 0.0709" | 22mm        | 46mm          | 7012584                | 0.81:       | 7004657           | 1.26        |
| 1.85mm       | 0.0728" | 22mm        | 46mm          | 7012585                | 0.81:       | 7004658           | 1.41        |
| 1.90mm       | 0.0748" | 22mm        | 46mm          | 7012586                | 0.81:       | 7004659           | 1.26        |
| 1.95mm       | 0.0768" | 24mm        | 49mm          | 7012587                | 0.81:       | 7004660           | 1.41        |
| 2.00mm       | 0.0787" | 24mm        | 49mm          | 7012588                | 0.76:       | 7004661           | 1.22        |
| 2.05mm       | 0.0807" | 24mm        | 49mm          | 7012589                | 0.81:       | 7004662           | 1.30        |
| 2.10mm       | 0.0827" | 24mm        | 49mm          | 7012590                | 0.81:       | 7004663           | 1.32        |
| 2.15mm       | 0.0846" | 27mm        | 53mm          | 7012591                | 0.81:       | 7004664           | 1.44        |
| 2.20mm       | 0.0866" | 27mm        | 53mm          | 7012592                | 0.81:       | 7004665           | 1.37        |

The : symbol after a price denotes that it is a Direct Ship Product (DSP) and shipping, availability & lead times may vary.

# HSS DRILL BITS

## HSS Drill Bits Cont.

Cutting Tools



| Metric Sizes |         |             |               | CleLine 1899 HSS Black |             | C/L 150 HSS Black |             |
|--------------|---------|-------------|---------------|------------------------|-------------|-------------------|-------------|
| Size         | Decimal | Flute Lgth. | Overall Lgth. | Part No.               | Price /Each | Part No.          | Price /Each |
| 2.25mm       | 0.0886" | 27mm        | 53mm          | 7012593                | \$0.81:     | 7004666           | \$1.37      |
| 2.30mm       | 0.0906" | 27mm        | 53mm          | 7012594                | 0.81:       | 7004667           | 1.37        |
| 2.35mm       | 0.0925" | 27mm        | 53mm          | 7012595                | 0.81:       | 7004668           | 1.37        |
| 2.40mm       | 0.0945" | 30mm        | 57mm          | 7012596                | 0.81:       | 7004669           | 1.38        |
| 2.45mm       | 0.0965" | 30mm        | 57mm          | 7012597                | 0.81:       | 7004670           | 1.45        |
| 2.50mm       | 0.0984" | 30mm        | 57mm          | 7012598                | 0.76:       | 7004671           | 1.37        |
| 2.60mm       | 0.1024" | 30mm        | 57mm          | 7012599                | 0.88:       | 7004672           | 1.42        |
| 2.70mm       | 0.1063" | 33mm        | 61mm          | 7012600                | 0.88:       | 7004673           | 1.44        |
| 2.80mm       | 0.1102" | 33mm        | 61mm          | 7012601                | 0.88:       | 7004674           | 1.45        |
| 2.90mm       | 0.1142" | 33mm        | 61mm          | 7012602                | 0.88:       | 7004675           | 1.44        |
| 3.00mm       | 0.1181" | 33mm        | 61mm          | 7012603                | 0.88:       | 7004676           | 1.31        |
| 3.10mm       | 0.122"  | 36mm        | 65mm          | 7012604                | 0.95:       | 7004677           | 1.44        |
| 3.20mm       | 0.126"  | 36mm        | 65mm          | 7012605                | 0.95:       | 7004678           | 1.45        |
| 3.30mm       | 0.1299" | 36mm        | 65mm          | 7012606                | 0.95:       | 7004679           | 1.45        |
| 3.40mm       | 0.1339" | 39mm        | 70mm          | 7012607                | 0.95:       | 7004680           | 1.45        |
| 3.50mm       | 0.1378" | 39mm        | 70mm          | 7012608                | 0.88:       | 7004681           | 1.38        |
| 3.60mm       | 0.1417" | 39mm        | 70mm          | 7012609                | 1.02:       | 7004682           | 1.67        |
| 3.70mm       | 0.1457" | 39mm        | 70mm          | 7012610                | 1.02:       | 7004683           | 1.67        |
| 3.80mm       | 0.1496" | 43mm        | 75mm          | 7012611                | 1.02:       | 7004684           | 1.67        |
| 3.90mm       | 0.1535" | 43mm        | 75mm          | 7012612                | 1.02:       | 7004685           | 1.67        |
| 4.00mm       | 0.1575" | 43mm        | 75mm          | 7012613                | 1.02:       | 7004686           | 1.44        |
| 4.10mm       | 0.1614" | 43mm        | 75mm          | 7012614                | 1.02:       | 7004687           | 1.67        |
| 4.20mm       | 0.1654" | 43mm        | 75mm          | 7012615                | 1.02:       | 7004688           | 1.67        |
| 4.30mm       | 0.1693" | 47mm        | 80mm          | 7012616                | 1.12:       | 7004689           | 1.77        |
| 4.40mm       | 0.1732" | 47mm        | 80mm          | 7012617                | 1.12:       | 7004690           | 1.85        |
| 4.50mm       | 0.1772" | 47mm        | 80mm          | 7012618                | 1.12:       | 7004691           | 1.74        |
| 4.60mm       | 0.1811" | 47mm        | 80mm          | 7012619                | 1.36:       | 7004692           | 1.94        |
| 4.70mm       | 0.185"  | 47mm        | 80mm          | 7012620                | 1.36:       | 7004693           | 1.96        |
| 4.80mm       | 0.189"  | 52mm        | 86mm          | 7012621                | 1.36:       | 7004694           | 1.96        |
| 4.90mm       | 0.1929" | 52mm        | 86mm          | 7012622                | 1.36:       | 7004695           | 1.96        |
| 5.00mm       | 0.1969" | 52mm        | 86mm          | 7012623                | 1.31:       | 7004696           | 1.96        |
| 5.10mm       | 0.2008" | 52mm        | 86mm          | 7012624                | 1.48:       | 7004697           | 2.14        |
| 5.20mm       | 0.2047" | 52mm        | 86mm          | 7012625                | 1.48:       | 7004698           | 2.23        |
| 5.30mm       | 0.2087" | 52mm        | 86mm          | 7012626                | 1.49:       | 7004699           | 2.30        |
| 5.40mm       | 0.2126" | 57mm        | 93mm          | 7012627                | 1.49:       | 7004700           | 2.39        |
| 5.50mm       | 0.2165" | 57mm        | 93mm          | 7012628                | 1.47:       | 7004701           | 2.12        |
| 5.60mm       | 0.2205" | 57mm        | 93mm          | 7012629                | 1.64:       | 7004702           | 2.39        |
| 5.70mm       | 0.2244" | 57mm        | 93mm          | 7012630                | 1.72:       | 7004703           | 2.39        |
| 5.80mm       | 0.2283" | 57mm        | 93mm          | 7012631                | 1.73:       | 7004704           | 2.39        |
| 5.90mm       | 0.2323" | 57mm        | 93mm          | 7012632                | 1.76:       | 7004705           | 2.39        |
| 6.00mm       | 0.2362" | 57mm        | 93mm          | 7012633                | 1.58:       | 7004706           | 2.30        |
| 6.10mm       | 0.2402" | 63mm        | 101mm         | 7012634                | 1.90:       | 7004707           | 2.45        |
| 6.20mm       | 0.2441" | 63mm        | 101mm         | 7012635                | 1.89:       | 7004708           | 2.45        |
| 6.30mm       | 0.248"  | 63mm        | 101mm         | 7012636                | 1.90:       | 7004709           | 2.45        |
| 6.40mm       | 0.252"  | 63mm        | 101mm         | 7012637                | 1.89:       | 7004710           | 2.81        |
| 6.50mm       | 0.2559" | 63mm        | 101mm         | 7012638                | 1.81:       | 7004711           | 2.81        |
| 6.60mm       | 0.2598" | 63mm        | 101mm         | 7012639                | 2.16:       | 7004712           | 2.97        |
| 6.70mm       | 0.2638" | 63mm        | 101mm         | 7012640                | 2.16:       | 7004713           | 2.86        |
| 6.80mm       | 0.2677" | 69mm        | 109mm         | 7012641                | 2.19:       | 7004714           | 3.04        |
| 6.90mm       | 0.2717" | 69mm        | 109mm         | 7012642                | 2.19:       | 7004715           | 3.04        |
| 7.00mm       | 0.2756" | 69mm        | 109mm         | 7012643                | 2.07:       | 7004716           | 2.86        |
| 7.10mm       | 0.2795" | 69mm        | 109mm         | 7012644                | 2.58:       | 7004717           | 3.20        |
| 7.20mm       | 0.2835" | 69mm        | 109mm         | 7012645                | 2.58:       | 7004718           | 3.56        |
| 7.30mm       | 0.2874" | 69mm        | 109mm         | 7012646                | 2.58:       | 7004719           | 3.62        |
| 7.40mm       | 0.2913" | 69mm        | 109mm         | 7012647                | 2.58:       | 7004720           | 3.62        |
| 7.50mm       | 0.2953" | 69mm        | 109mm         | 7012648                | 2.50:       | 7004721           | 3.54        |
| 7.60mm       | 0.2992" | 75mm        | 117mm         | 7012649                | 2.84:       | 7004722           | 4.16        |
| 7.70mm       | 0.3031" | 75mm        | 117mm         | 7012650                | 2.84:       | 7004723           | 4.16        |
| 7.80mm       | 0.3071" | 75mm        | 117mm         | 7012651                | 2.84:       | 7004724           | 4.16        |
| 7.90mm       | 0.311"  | 75mm        | 117mm         | 7012652                | 2.84:       | 7004725           | 4.16        |
| 8.00mm       | 0.315"  | 75mm        | 117mm         | 7012653                | 2.77:       | 7004726           | 4.17        |
| 8.10mm       | 0.3189" | 75mm        | 117mm         | 7012654                | 3.13:       | 7004727           | 4.45        |
| 8.20mm       | 0.3228" | 75mm        | 117mm         | 7012655                | 3.20:       | 7004728           | 4.45        |
| 8.30mm       | 0.3268" | 75mm        | 117mm         | 7012656                | 3.20:       | 7004729           | 4.45        |
| 8.40mm       | 0.3307" | 75mm        | 117mm         | 7012657                | 3.37:       | 7004730           | 5.04        |
| 8.50mm       | 0.3346" | 75mm        | 117mm         | 7012658                | 3.35:       | 7004731           | 4.75        |

| Metric Sizes |         |             |               | CleLine 1899 HSS Black |             | C/L 150 HSS Black |             |
|--------------|---------|-------------|---------------|------------------------|-------------|-------------------|-------------|
| Size         | Decimal | Flute Lgth. | Overall Lgth. | Part No.               | Price /Each | Part No.          | Price /Each |
| 8.60mm       | 0.3386" | 81mm        | 125mm         | 7012659                | \$3.75:     | 7004732           | \$5.26      |
| 8.70mm       | 0.3425" | 81mm        | 125mm         | 7012660                | 3.75:       | 7004733           | 5.26        |
| 8.80mm       | 0.3465" | 81mm        | 125mm         | 7012661                | 3.75:       | 7004734           | 5.49        |
| 8.90mm       | 0.3504" | 81mm        | 125mm         | 7012662                | 3.85:       | 7004735           | 5.49        |
| 9.00mm       | 0.3543" | 81mm        | 125mm         | 7012663                | 3.85:       | 7004736           | 5.38        |
| 9.10mm       | 0.3583" | 81mm        | 125mm         | 7012664                | 4.10:       | 7004737           | 5.56        |
| 9.20mm       | 0.3622" | 81mm        | 125mm         | 7012665                | 4.09:       | 7004738           | 5.88        |
| 9.30mm       | 0.3661" | 81mm        | 125mm         | 7012666                | 4.16:       | 7004739           | 6.24        |
| 9.40mm       | 0.3701" | 81mm        | 125mm         | 7012667                | 4.16:       | 7004740           | 5.88        |
| 9.50mm       | 0.374"  | 81mm        | 125mm         | 7012668                | 4.06:       | 7004741           | 5.65        |
| 9.60mm       | 0.378"  | 87mm        | 133mm         | 7012669                | 4.50:       | 7004742           | 6.59        |
| 9.70mm       | 0.3819" | 87mm        | 133mm         | 7012670                | 4.56:       | 7004743           | 6.59        |
| 9.80mm       | 0.3858" | 87mm        | 133mm         | 7012671                | 4.56:       | 7004744           | 6.59        |
| 9.90mm       | 0.3898" | 87mm        | 133mm         | 7012672                | 4.56:       | 7004745           | 6.59        |
| 10.00mm      | 0.3937" | 87mm        | 133mm         | 7012673                | 4.50:       | 7004746           | 6.39        |
| 10.20mm      | 0.4016" | 87mm        | 133mm         | 7012674                | 4.86:       | 7004753           | 6.85        |
| 10.50mm      | 0.4134" | 87mm        | 133mm         | 7012675                | 4.86:       | 7004747           | 6.91        |
| 10.80mm      | 0.4252" | 94mm        | 142mm         | 7012676                | 5.04:       | 7004754           | 8.17        |
| 11.00mm      | 0.4331" | 94mm        | 142mm         | 7012677                | 5.04:       | 7004748           | 7.28        |
| 11.20mm      | 0.4409" | 94mm        | 142mm         | 7012678                | 5.65:       | 7004755           | 8.75        |
| 11.50mm      | 0.4528" | 94mm        | 142mm         | 7012679                | 5.65:       | 7004749           | 8.24        |
| 11.80mm      | 0.4646" | 94mm        | 142mm         | 7012680                | 6.33:       | 7004756           | 9.43        |
| 12.00mm      | 0.4724" | 101mm       | 151mm         | 7012681                | 6.32:       | 7004750           | 9.04        |
| 12.20mm      | 0.4803" | 101mm       | 151mm         | 7012682                | 6.79:       | 7004757           | 9.79        |
| 12.50mm      | 0.4921" | 101mm       | 151mm         | 7012683                | 6.79:       | 7004751           | 9.27        |
| 12.80mm      | 0.5039" | 101mm       | 151mm         | 7012684                | 11.38:      | 7004758           | 15.73       |
| 13.00mm      | 0.5118" | 101mm       | 151mm         | 7012685                | 11.38:      | 7004752           | 16.02       |
| 13.20mm      | 0.5197" | 101mm       | 151mm         | 7012686                | 15.10:      | 7004759           | 19.09       |
| 13.50mm      | 0.5315" | 108mm       | 160mm         | 7012687                | 15.10:      | 7004761           | 18.77       |
| 13.80mm      | 0.5433" | 108mm       | 160mm         | 7012688                | 15.20:      | 7004762           | 19.60       |
| 14.00mm      | 0.5512" | 108mm       | 160mm         | 7012689                | 15.20:      | 7004760           | 19.22       |
| 14.25mm      | 0.561"  | 108mm       | 160mm         | 7012690                | 15.64:      | 7004763           | 20.75       |
| 14.50mm      | 0.5709" | 114mm       | 169mm         | 7012691                | 15.64:      | 7004764           | 20.87       |
| 14.75mm      | 0.5807" | 114mm       | 169mm         | 7012692                | 16.34:      | 7004765           | 22.06       |
| 15.00mm      | 0.5906" | 114mm       | 169mm         | 7012693                | 16.34:      | 7004767           | 20.70       |
| 15.25mm      | 0.6004" | 114mm       | 169mm         | 7012694                | 17.53:      | 7004768           | 22.47       |
| 15.50mm      | 0.6102" | 120mm       | 178mm         | 7012695                | 17.54:      | 7004766           | 21.45       |
| 15.75mm      | 0.6201" | 120mm       | 178mm         | 7012696                | 19.16:      | 7004769           | 23.75       |
| 16.00mm      | 0.6299" | 120mm       | 178mm         | 7012697                | 19.14:      | 7004770           | 25.61       |
| 16.25mm      | 0.6398" | 120mm       | 178mm         | 7012698                | 19.76:      | 7004771           | 25.97       |
| 16.50mm      | 0.6496" | 125mm       | 184mm         | 7012699                | 19.76:      | 7004772           | 26.20       |
| 16.75mm      | 0.6594" | 125mm       | 184mm         | 7012700                | 20.65:      | 7004774           | 27.84       |
| 17.00mm      | 0.6693" | 125mm       | 184mm         | 7012701                | 20.66:      | 7004775           | 28.17       |
| 17.25mm      | 0.6791" | 125mm       | 184mm         | 7012702                | 21.58:      | 7004776           | 29.29       |
| 17.50mm      | 0.689"  | 130mm       | 191mm         | 7012703                | 21.57:      | 7004773           | 27.90       |



## HSS Drill Bits Cont.



### 118°, Split Point NAS Type A HSS Jobber (Black Oxide)

- Black Oxide surface finish increases wear resistance and the added lubricity improves the chip flow
- Premium High Speed Steel
- 118° split point is self-centering, for reduced thrust and easier penetration
- Manufactured to NAS "A" standard
- Recommended for Medium and Soft Steels, most aluminum and magnesium alloys
- Application: Sheet metal and portable drilling



#### Fractional

| Size   | Decimal   | Flute Lgth. | Overall Lgth. | Part No. | Price /Each |
|--------|-----------|-------------|---------------|----------|-------------|
| 1/16"  | 0.0625"   | 0.875"      | 1.875"        | 7003330  | \$1.21      |
| 5/64"  | 0.078125" | 1"          | 2"            | 7003331  | 1.21        |
| 3/32"  | 0.09375"  | 1.25"       | 2.25"         | 7003332  | 1.21        |
| 7/64"  | 0.109375" | 1.5"        | 2.625"        | 7003333  | 1.40        |
| 1/8"   | 0.125"    | 1.625"      | 2.75"         | 7003334  | 1.40        |
| 9/64"  | 0.140625" | 1.75"       | 2.875"        | 7003335  | 1.48        |
| 5/32"  | 0.15625"  | 2"          | 3.125"        | 7003336  | 1.49        |
| 11/64" | 0.171875" | 2.125"      | 3.25"         | 7003337  | 1.60        |
| 3/16"  | 0.1875"   | 2.3125"     | 3.5"          | 7003338  | 1.74        |
| 13/64" | 0.203125" | 2.4375"     | 3.625"        | 7003339  | 1.86        |
| 7/32"  | 0.21875"  | 2.5"        | 3.75"         | 7003340  | 2.05        |
| 15/64" | 0.234375" | 2.625"      | 3.875"        | 7003341  | 2.26        |
| 1/4"-E | 0.25"     | 2.75"       | 4"            | 7003342  | 2.34        |
| 17/64" | 0.265625" | 2.875"      | 4.125"        | 7003343  | 2.70        |
| 9/32"  | 0.28125"  | 2.9375"     | 4.25"         | 7003344  | 2.91        |
| 19/64" | 0.296875" | 3.0625"     | 4.375"        | 7003345  | 3.61        |
| 5/16"  | 0.3125"   | 3.1875"     | 4.5"          | 7003346  | 3.78        |
| 21/64" | 0.328125" | 3.3125"     | 4.625"        | 7003347  | 4.21        |
| 11/32" | 0.34375"  | 3.4375"     | 4.75"         | 7003348  | 4.69        |
| 23/64" | 0.359375" | 3.5"        | 4.875"        | 7003349  | 5.52        |
| 3/8"   | 0.375"    | 3.625"      | 5"            | 7003350  | 5.52        |
| 25/64" | 0.390625" | 3.75"       | 5.125"        | 7003351  | 6.17        |
| 13/32" | 0.40625"  | 3.875"      | 5.25"         | 7003352  | 6.25        |
| 27/64" | 0.421875" | 3.9375"     | 5.375"        | 7003353  | 7.20        |
| 7/16"  | 0.4375"   | 4.0625"     | 5.5"          | 7003354  | 7.47        |
| 29/64" | 0.453125" | 4.1875"     | 5.625"        | 7003355  | 8.31        |
| 15/32" | 0.46875"  | 4.3125"     | 5.75"         | 7003356  | 8.78        |
| 31/64" | 0.484375" | 4.375"      | 5.875"        | 7003357  | 9.34        |
| 1/2"   | 0.5"      | 4.5"        | 6"            | 7003358  | 9.43        |

#### Fractional Sets

| Size          | Size Range    | Part No. | Price /Each |
|---------------|---------------|----------|-------------|
| 1/16-1/2x32nd | 1/16-1/2x32nd | 7003436  | \$340.72    |
| 1/16-1/2x64th | 1/16-1/2x64th | 7003437  | 549.09      |

#### Wire

| Size | Decimal | Flute Lgth. | Overall Lgth. | Part No. | Price /Each |
|------|---------|-------------|---------------|----------|-------------|
| #1   | 0.228"  | 2.625"      | 3.875"        | 7003359  | \$2.43      |
| #2   | 0.221"  | 2.625"      | 3.875"        | 7003360  | 2.43        |
| #3   | 0.213"  | 2.5"        | 3.75"         | 7003361  | 2.24        |
| #4   | 0.209"  | 2.5"        | 3.75"         | 7003362  | 2.24        |
| #5   | 0.2055" | 2.5"        | 3.75"         | 7003363  | 2.24        |
| #6   | 0.204"  | 2.5"        | 3.75"         | 7003364  | 2.24        |
| #7   | 0.201"  | 2.4375"     | 3.625"        | 7003365  | 1.96        |
| #8   | 0.199"  | 2.4375"     | 3.625"        | 7003366  | 2.05        |
| #9   | 0.196"  | 2.4375"     | 3.625"        | 7003367  | 2.05        |
| #10  | 0.1935" | 2.4375"     | 3.625"        | 7003368  | 1.96        |
| #11  | 0.191"  | 2.3125"     | 3.5"          | 7003369  | 1.86        |
| #12  | 0.189"  | 2.3125"     | 3.5"          | 7003370  | 1.86        |
| #13  | 0.185"  | 2.3125"     | 3.5"          | 7003371  | 1.87        |
| #14  | 0.182"  | 2.1875"     | 3.375"        | 7003372  | 1.87        |
| #15  | 0.18"   | 2.1875"     | 3.375"        | 7003373  | 1.87        |
| #16  | 0.177"  | 2.1875"     | 3.375"        | 7003374  | 1.87        |

**Cutting and Metalworking fluid is available starting on page 13-176.**



| Size | Decimal | Flute Lgth. | Overall Lgth. | Part No. | Price /Each |
|------|---------|-------------|---------------|----------|-------------|
| #17  | 0.173"  | 2.1875"     | 3.375"        | 7003375  | \$1.87      |
| #18  | 0.1695" | 2.125"      | 3.25"         | 7003376  | 1.65        |
| #19  | 0.166"  | 2.125"      | 3.25"         | 7003377  | 1.60        |
| #20  | 0.161"  | 2.125"      | 3.25"         | 7003378  | 1.60        |
| #21  | 0.159"  | 2.125"      | 3.25"         | 7003379  | 1.49        |
| #22  | 0.157"  | 2"          | 3.125"        | 7003380  | 1.49        |
| #23  | 0.154"  | 2"          | 3.125"        | 7003381  | 1.49        |
| #24  | 0.152"  | 2"          | 3.125"        | 7003382  | 1.49        |
| #25  | 0.1495" | 1.875"      | 3"            | 7003383  | 1.49        |
| #26  | 0.147"  | 1.875"      | 3"            | 7003384  | 1.49        |
| #27  | 0.144"  | 1.875"      | 3"            | 7003385  | 1.49        |
| #28  | 0.1405" | 1.75"       | 2.875"        | 7003386  | 1.44        |
| #29  | 0.136"  | 1.75"       | 2.875"        | 7003387  | 1.44        |
| #30  | 0.1285" | 1.625"      | 2.75"         | 7003388  | 1.44        |
| #31  | 0.12"   | 1.625"      | 2.75"         | 7003389  | 1.45        |
| #32  | 0.116"  | 1.625"      | 2.75"         | 7003390  | 1.45        |
| #33  | 0.113"  | 1.5"        | 2.625"        | 7003391  | 1.45        |
| #34  | 0.111"  | 1.5"        | 2.625"        | 7003392  | 1.45        |
| #35  | 0.11"   | 1.5"        | 2.625"        | 7003393  | 1.45        |
| #36  | 0.1065" | 1.4375"     | 2.5"          | 7003394  | 1.45        |
| #37  | 0.104"  | 1.4375"     | 2.5"          | 7003395  | 1.45        |
| #38  | 0.1015" | 1.4375"     | 2.5"          | 7003396  | 1.45        |
| #39  | 0.0995" | 1.375"      | 2.375"        | 7003397  | 1.45        |
| #40  | 0.098"  | 1.375"      | 2.375"        | 7003398  | 1.27        |
| #41  | 0.096"  | 1.375"      | 2.375"        | 7003399  | 1.45        |
| #42  | 0.0935" | 1.25"       | 2.25"         | 7003400  | 1.45        |
| #43  | 0.089"  | 1.25"       | 2.25"         | 7003401  | 1.45        |
| #44  | 0.086"  | 1.125"      | 2.125"        | 7003402  | 1.45        |
| #45  | 0.082"  | 1.125"      | 2.125"        | 7003403  | 1.45        |
| #46  | 0.081"  | 1.125"      | 2.125"        | 7003404  | 1.45        |
| #47  | 0.0785" | 1"          | 2"            | 7003405  | 1.45        |
| #48  | 0.076"  | 1"          | 2"            | 7003406  | 1.45        |
| #49  | 0.073"  | 1"          | 2"            | 7003407  | 1.45        |
| #50  | 0.07"   | 1"          | 2"            | 7003408  | 1.45        |
| #51  | 0.067"  | 1"          | 2"            | 7003409  | 1.45        |
| #52  | 0.0635" | 0.875"      | 1.875"        | 7003410  | 1.45        |

#### Letter

| Size  | Decimal | Flute Lgth. | Overall Lgth. | Part No. | Price /Each |
|-------|---------|-------------|---------------|----------|-------------|
| Ltr A | 0.234"  | 2.625"      | 3.875"        | 7003411  | \$2.91      |
| Ltr B | 0.238"  | 2.75"       | 4"            | 7003412  | 2.91        |
| Ltr C | 0.242"  | 2.75"       | 4"            | 7003413  | 2.91        |
| Ltr D | 0.246"  | 2.75"       | 4"            | 7003414  | 2.82        |
| Ltr F | 0.257"  | 2.875"      | 4.125"        | 7003415  | 2.91        |
| Ltr G | 0.261"  | 2.875"      | 4.125"        | 7003416  | 3.52        |
| Ltr H | 0.266"  | 2.875"      | 4.125"        | 7003417  | 3.52        |
| Ltr I | 0.272"  | 2.875"      | 4.125"        | 7003418  | 3.52        |
| Ltr J | 0.277"  | 2.875"      | 4.125"        | 7003419  | 3.69        |
| Ltr K | 0.2812" | 2.9375"     | 4.25"         | 7003420  | 4.39        |
| Ltr L | 0.29"   | 2.9375"     | 4.25"         | 7003421  | 4.39        |
| Ltr M | 0.295"  | 3.0625"     | 4.375"        | 7003422  | 4.48        |
| Ltr N | 0.302"  | 3.0625"     | 4.375"        | 7003423  | 4.48        |
| Ltr O | 0.316"  | 3.1875"     | 4.5"          | 7003424  | 4.69        |
| Ltr P | 0.323"  | 3.3125"     | 4.625"        | 7003425  | 5.09        |
| Ltr Q | 0.332"  | 3.4375"     | 4.75"         | 7003426  | 5.09        |
| Ltr R | 0.339"  | 3.4375"     | 4.75"         | 7003427  | 5.37        |
| Ltr S | 0.348"  | 3.5"        | 4.875"        | 7003428  | 5.79        |
| Ltr T | 0.358"  | 3.5"        | 4.875"        | 7003429  | 6.44        |
| Ltr U | 0.368"  | 3.625"      | 5"            | 7003430  | 6.44        |
| Ltr V | 0.377"  | 3.625"      | 5"            | 7003431  | 7.05        |
| Ltr W | 0.386"  | 3.75"       | 5.125"        | 7003432  | 7.38        |
| Ltr X | 0.397"  | 3.75"       | 5.125"        | 7003433  | 8.51        |
| Ltr Y | 0.404"  | 3.875"      | 5.25"         | 7003434  | 10.00       |
| Ltr Z | 0.413"  | 3.875"      | 5.25"         | 7003435  | 10.46       |

# HSS DRILL BITS

## HSS Drill Bits Cont.

Cutting Tools



### 118° Split Point HSS Jobber Black Oxide Finish - 150K Series

- General Purpose drilling for a wide range of operating conditions and various materials
- Black Oxide surface finish increases wear resistance and the added lubricity improves the chip flow
- Premium High Speed Steel
- 118° split point is self-centering, for reduced thrust and easier penetration
- Recommended for Medium and Soft Steels, most aluminum and magnesium alloys
- Application: Sheet metal and portable drilling



| Size                    | Decimal   | Flute Lgth. | Overall Lgth. | Part No. | Price /Each |
|-------------------------|-----------|-------------|---------------|----------|-------------|
| <b>Fractional Sizes</b> |           |             |               |          |             |
| 1/16"                   | 0.0625"   | 0.875"      | 1.875"        | 7005977  | \$1.27      |
| 5/64"                   | 0.078125" | 1"          | 2"            | 7005983  | 1.27        |
| 3/32"                   | 0.09375"  | 1.25"       | 2.25"         | 7005990  | 1.27        |
| 7/64"                   | 0.109375" | 1.5"        | 2.625"        | 7005997  | 1.26        |
| 1/8"                    | 0.125"    | 1.625"      | 2.75"         | 7006003  | 1.33        |
| 9/64"                   | 0.140625" | 1.75"       | 2.875"        | 7006007  | 1.42        |
| 5/32"                   | 0.15625"  | 2"          | 3.125"        | 7006013  | 1.49        |
| 11/64"                  | 0.171875" | 2.125"      | 3.25"         | 7006019  | 1.65        |
| 3/16"                   | 0.1875"   | 2.3125"     | 3.5"          | 7006025  | 1.85        |
| 13/64"                  | 0.203125" | 2.4375"     | 3.625"        | 7006032  | 2.05        |
| 7/32"                   | 0.21875"  | 2.5"        | 3.75"         | 7006037  | 2.14        |
| 15/64"                  | 0.234375" | 2.625"      | 3.875"        | 7006041  | 2.38        |
| 1/4"                    | 0.25"     | 2.75"       | 4"            | 7006045  | 2.52        |
| 17/64"                  | 0.265625" | 2.875"      | 4.125"        | 7006048  | 2.81        |
| 9/32"                   | 0.28125"  | 2.9375"     | 4.25"         | 7006053  | 3.04        |
| 19/64"                  | 0.296875" | 3.0625"     | 4.375"        | 7006056  | 3.72        |
| 5/16"                   | 0.3125"   | 3.1875"     | 4.5"          | 7006058  | 3.78        |
| 21/64"                  | 0.328125" | 3.3125"     | 4.625"        | 7006061  | 4.30        |
| 11/32"                  | 0.34375"  | 3.4375"     | 4.75"         | 7006064  | 4.67        |
| 23/64"                  | 0.359375" | 3.5"        | 4.875"        | 7006067  | 5.55        |
| 3/8"                    | 0.375"    | 3.625"      | 5"            | 7006069  | 5.65        |
| 25/64"                  | 0.390625" | 3.75"       | 5.125"        | 7006072  | 6.30        |
| 13/32"                  | 0.40625"  | 3.875"      | 5.25"         | 7006075  | 6.45        |
| 27/64"                  | 0.421875" | 3.9375"     | 5.375"        | 7006077  | 7.27        |
| 7/16"                   | 0.4375"   | 4.0625"     | 5.5"          | 7006078  | 7.60        |
| 29/64"                  | 0.453125" | 4.1875"     | 5.625"        | 7006079  | 8.62        |
| 15/32"                  | 0.46875"  | 4.3125"     | 5.75"         | 7006080  | 8.91        |
| 31/64"                  | 0.484375" | 4.375"      | 5.875"        | 7006081  | 9.45        |
| 1/2"                    | 0.5"      | 4.5"        | 6"            | 7006082  | 9.56        |
| <b>Wire Gage Sizes</b>  |           |             |               |          |             |
| #1                      | 0.228"    | 2.625"      | 3.875"        | 7006039  | \$2.57      |
| #2                      | 0.221"    | 2.625"      | 3.875"        | 7006038  | 2.57        |
| #3                      | 0.213"    | 2.5"        | 3.75"         | 7006036  | 2.40        |
| #4                      | 0.209"    | 2.5"        | 3.75"         | 7006035  | 2.40        |
| #5                      | 0.2055"   | 2.5"        | 3.75"         | 7006034  | 2.40        |
| #6                      | 0.204"    | 2.5"        | 3.75"         | 7006033  | 2.40        |
| #7                      | 0.201"    | 2.4375"     | 3.625"        | 7006031  | 2.13        |
| #8                      | 0.199"    | 2.4375"     | 3.625"        | 7006030  | 2.13        |
| #9                      | 0.196"    | 2.4375"     | 3.625"        | 7006029  | 2.13        |
| #10                     | 0.1935"   | 2.4375"     | 3.625"        | 7006028  | 2.13        |
| #11                     | 0.191"    | 2.3125"     | 3.5"          | 7006027  | 2.05        |
| #12                     | 0.189"    | 2.3125"     | 3.5"          | 7006026  | 2.05        |
| #13                     | 0.185"    | 2.3125"     | 3.5"          | 7006024  | 1.96        |

| Size                         | Decimal | Flute Lgth. | Overall Lgth. | Part No. | Price /Each |
|------------------------------|---------|-------------|---------------|----------|-------------|
| <b>Wire Gage Sizes cont.</b> |         |             |               |          |             |
| #14                          | 0.182"  | 2.1875"     | 3.375"        | 7006023  | \$1.96      |
| #15                          | 0.18"   | 2.1875"     | 3.375"        | 7006022  | 1.96        |
| #16                          | 0.177"  | 2.1875"     | 3.375"        | 7006021  | 1.94        |
| #17                          | 0.173"  | 2.1875"     | 3.375"        | 7006020  | 1.94        |
| #18                          | 0.1695" | 2.125"      | 3.25"         | 7006018  | 1.70        |
| #19                          | 0.166"  | 2.125"      | 3.25"         | 7006017  | 1.70        |
| #20                          | 0.161"  | 2.125"      | 3.25"         | 7006016  | 1.70        |
| #21                          | 0.159"  | 2.125"      | 3.25"         | 7006015  | 1.55        |
| #22                          | 0.157"  | 2"          | 3.125"        | 7006014  | 1.55        |
| #23                          | 0.154"  | 2"          | 3.125"        | 7006012  | 1.55        |
| #24                          | 0.152"  | 2"          | 3.125"        | 7006011  | 1.55        |
| #25                          | 0.1495" | 1.875"      | 3"            | 7006010  | 1.53        |
| #26                          | 0.147"  | 1.875"      | 3"            | 7006009  | 1.53        |
| #27                          | 0.144"  | 1.875"      | 3"            | 7006008  | 1.53        |
| #28                          | 0.1405" | 1.75"       | 2.875"        | 7006006  | 1.37        |
| #29                          | 0.136"  | 1.75"       | 2.875"        | 7006005  | 1.34        |
| #30                          | 0.1285" | 1.625"      | 2.75"         | 7006004  | 1.34        |
| #31                          | 0.12"   | 1.625"      | 2.75"         | 7006002  | 1.32        |
| #32                          | 0.116"  | 1.625"      | 2.75"         | 7006001  | 1.32        |
| #33                          | 0.113"  | 1.5"        | 2.625"        | 7006000  | 1.32        |
| #34                          | 0.111"  | 1.5"        | 2.625"        | 7005999  | 1.32        |
| #35                          | 0.11"   | 1.5"        | 2.625"        | 7005998  | 1.32        |
| #36                          | 0.1065" | 1.4375"     | 2.5"          | 7005996  | 1.32        |
| #37                          | 0.104"  | 1.4375"     | 2.5"          | 7005995  | 1.32        |
| #38                          | 0.1015" | 1.4375"     | 2.5"          | 7005994  | 1.32        |
| #39                          | 0.0995" | 1.375"      | 2.375"        | 7005993  | 1.32        |
| #40                          | 0.098"  | 1.375"      | 2.375"        | 7005992  | 1.25        |
| #41                          | 0.096"  | 1.375"      | 2.375"        | 7005991  | 1.32        |
| #42                          | 0.0935" | 1.25"       | 2.25"         | 7005989  | 1.32        |
| #43                          | 0.089"  | 1.25"       | 2.25"         | 7005988  | 1.32        |
| #44                          | 0.086"  | 1.125"      | 2.125"        | 7005987  | 1.32        |
| #45                          | 0.082"  | 1.125"      | 2.125"        | 7005986  | 1.32        |
| #46                          | 0.081"  | 1.125"      | 2.125"        | 7005985  | 1.30        |
| #47                          | 0.0785" | 1"          | 2"            | 7005984  | 1.32        |
| #48                          | 0.076"  | 1"          | 2"            | 7005982  | 1.32        |
| #49                          | 0.073"  | 1"          | 2"            | 7005981  | 1.32        |
| #50                          | 0.07"   | 1"          | 2"            | 7005980  | 1.32        |
| #51                          | 0.067"  | 1"          | 2"            | 7005979  | 1.32        |
| #52                          | 0.0635" | 0.875"      | 1.875"        | 7005978  | 1.32        |
| <b>Letter Sizes</b>          |         |             |               |          |             |
| Ltr A                        | 0.234"  | 2.625"      | 3.875"        | 7006040  | \$3.02      |
| Ltr B                        | 0.238"  | 2.75"       | 4"            | 7006042  | 3.02        |
| Ltr C                        | 0.242"  | 2.75"       | 4"            | 7006043  | 3.02        |
| Ltr D                        | 0.246"  | 2.75"       | 4"            | 7006044  | 3.02        |
| Ltr F                        | 0.257"  | 2.875"      | 4.125"        | 7006046  | 3.04        |
| Ltr G                        | 0.261"  | 2.875"      | 4.125"        | 7006047  | 3.56        |
| Ltr H                        | 0.266"  | 2.875"      | 4.125"        | 7006049  | 3.56        |
| Ltr I                        | 0.272"  | 2.875"      | 4.125"        | 7006050  | 3.56        |
| Ltr J                        | 0.277"  | 2.875"      | 4.125"        | 7006051  | 3.78        |
| Ltr K                        | 0.2812" | 2.9375"     | 4.25"         | 7006052  | 4.24        |
| Ltr L                        | 0.29"   | 2.9375"     | 4.25"         | 7006054  | 4.24        |
| Ltr M                        | 0.295"  | 3.0625"     | 4.375"        | 7006055  | 4.46        |
| Ltr N                        | 0.302"  | 3.0625"     | 4.375"        | 7006057  | 4.46        |
| Ltr O                        | 0.316"  | 3.1875"     | 4.5"          | 7006059  | 4.56        |
| Ltr P                        | 0.323"  | 3.3125"     | 4.625"        | 7006060  | 5.15        |
| Ltr Q                        | 0.332"  | 3.4375"     | 4.75"         | 7006062  | 5.15        |
| Ltr R                        | 0.339"  | 3.4375"     | 4.75"         | 7006063  | 5.49        |
| Ltr S                        | 0.348"  | 3.5"        | 4.875"        | 7006065  | 5.88        |
| Ltr T                        | 0.358"  | 3.5"        | 4.875"        | 7006066  | 6.68        |
| Ltr U                        | 0.368"  | 3.625"      | 5"            | 7006068  | 6.75        |
| Ltr V                        | 0.377"  | 3.625"      | 5"            | 7006070  | 6.91        |
| Ltr W                        | 0.386"  | 3.75"       | 5.125"        | 7006071  | 7.14        |
| Ltr X                        | 0.397"  | 3.75"       | 5.125"        | 7006073  | 8.06        |
| Ltr Y                        | 0.404"  | 3.875"      | 5.25"         | 7006074  | 10.02       |
| Ltr Z                        | 0.413"  | 3.875"      | 5.25"         | 7006076  | 10.39       |

## HSS Drill Bits Cont.



### 118° Point Bright HSS Left Hand Jobber Drills Bright Finish - 150L Series

- General Purpose drilling for a wide range of operating conditions and various materials
- Left hand helix for use in screw machines where the machine spindle rotation is counter-clockwise
- Premium High Speed Steel



| Size                    | Decimal   | Flute Lgth. | Overall Lgth. | Part No. | Price /Each |
|-------------------------|-----------|-------------|---------------|----------|-------------|
| <b>Fractional Sizes</b> |           |             |               |          |             |
| 1/32"                   | 0.03125"  | 0.5"        | 1.375"        | 7006083  | \$5.95      |
| 3/64"                   | 0.046875" | 0.75"       | 1.75"         | 7006084  | 4.01        |
| 1/16"                   | 0.0625"   | 0.875"      | 1.875"        | 7006085  | 3.56        |
| 5/64"                   | 0.078125" | 1"          | 2"            | 7006086  | 3.56        |
| 3/32"                   | 0.09375"  | 1.25"       | 2.25"         | 7006087  | 3.62        |
| 7/64"                   | 0.109375" | 1.5"        | 2.625"        | 7006088  | 3.78        |
| 1/8"                    | 0.125"    | 1.625"      | 2.75"         | 7006089  | 3.78        |
| 9/64"                   | 0.140625" | 1.75"       | 2.875"        | 7006090  | 3.94        |
| 5/32"                   | 0.15625"  | 2"          | 3.125"        | 7006091  | 4.39        |
| 11/64"                  | 0.171875" | 2.125"      | 3.25"         | 7006092  | 5.11        |
| 3/16"                   | 0.1875"   | 2.3125"     | 3.5"          | 7006093  | 5.55        |
| 13/64"                  | 0.203125" | 2.4375"     | 3.625"        | 7006094  | 5.65        |
| 7/32"                   | 0.21875"  | 2.5"        | 3.75"         | 7006095  | 5.65        |
| 15/64"                  | 0.234375" | 2.625"      | 3.875"        | 7006096  | 7.54        |
| 1/4"                    | 0.25"     | 2.75"       | 4"            | 7006097  | 7.65        |
| 17/64"                  | 0.265625" | 2.875"      | 4.125"        | 7006098  | 8.46        |
| 9/32"                   | 0.28125"  | 2.9375"     | 4.25"         | 7006099  | 8.53        |
| 19/64"                  | 0.296875" | 3.0625"     | 4.375"        | 7006100  | 9.65        |
| 5/16"                   | 0.3125"   | 3.1875"     | 4.5"          | 7006101  | 10.01       |
| 21/64"                  | 0.328125" | 3.3125"     | 4.625"        | 7006102  | 10.98       |
| 11/32"                  | 0.34375"  | 3.4375"     | 4.75"         | 7006103  | 12.25       |
| 23/64"                  | 0.359375" | 3.5"        | 4.875"        | 7006104  | 14.53       |
| 3/8"                    | 0.375"    | 3.625"      | 5"            | 7006105  | 14.85       |
| 25/64"                  | 0.390625" | 3.75"       | 5.125"        | 7006106  | 16.70       |
| 13/32"                  | 0.40625"  | 3.875"      | 5.25"         | 7006107  | 16.86       |
| 27/64"                  | 0.421875" | 3.9375"     | 5.375"        | 7006108  | 19.60       |
| 7/16"                   | 0.4375"   | 4.0625"     | 5.5"          | 7006109  | 19.80       |
| 29/64"                  | 0.453125" | 4.1875"     | 5.625"        | 7006110  | 23.45       |
| 15/32"                  | 0.46875"  | 4.3125"     | 5.75"         | 7006111  | 24.12       |
| 31/64"                  | 0.484375" | 4.375"      | 5.875"        | 7006112  | 25.61       |
| 1/2"                    | 0.5"      | 4.5"        | 6"            | 7006113  | 25.61       |

Cutting Tools



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# HSS DRILL BITS

## HSS Drill Bits Cont.

### 118° Jobber Length Drills Bright & TiN Coated



Cutting Tools

- Norseman 100/240B - General purpose with bright finish.
- This 118° point, high-speed drill performs well in a wide variety of drilling applications. It is recommended for non-ferrous metals, wood, and plastics.
- Chicago-Latrobe 150D drill bits are for general purpose drilling in a wide range of operating conditions and materials.
- The bright finish provides good chip ejection.
- These production drill bits are made from premium HSS.
- Chicago-Latrobe 150T are Titanium Nitride (TiN) to add lubricity and hardness, enhancing chip ejection and the life of the tool.



| Size   | Decimal   | Flute Lgth. | Overall Lgth. | Norseman 100 /240B Bright |             | C/L 150D HSS Bright |             | C/L 150T TiN Coat |             |
|--------|-----------|-------------|---------------|---------------------------|-------------|---------------------|-------------|-------------------|-------------|
|        |           |             |               | Part No.                  | Price /Each | Part No.            | Price /Each | Part No.          | Price /Each |
| 1/64"  | 0.015625" | 3/16"       | 3/4"          | 0310140                   | \$3.08      | 7004914             | \$2.15      | 0355895           | \$2.37      |
| 1/32"  | 0.03125"  | 1/2"        | 1-3/8"        | 0310141                   | 1.96        | 7004915             | 1.14        | 0355896           | 1.66        |
| 3/64"  | 0.0469"   | 3/8"        | 1-3/4"        | 0310142                   | 1.34        | 7004916             | 1.15        | 0355897           | 1.66        |
| 1/16"  | 0.0625"   | 7/8"        | 1-7/8"        | 0310143                   | 1.13        | 7004917             | 1.15        | 7005217           | 2.07        |
| 5/64"  | 0.0781"   | 1"          | 2"            | 0310144                   | 1.13        | 7004918             | 1.15        | 7005218           | 2.11        |
| 3/32"  | 0.0938"   | 1-1/4"      | 2-1/4"        | 0310145                   | 1.13        | 7004919             | 1.15        | 7005219           | 2.27        |
| 7/64"  | 0.1094"   | 1-1/2"      | 2-5/8"        | 0310146                   | 1.13        | 7004920             | 1.15        | 7005220           | 2.39        |
| 1/8"   | 0.125"    | 1-5/8"      | 2-3/4"        | 0310147                   | 1.19        | 7004921             | 1.20        | 7005221           | 2.41        |
| 9/64"  | 0.1406"   | 1-3/4"      | 2-7/8"        | 0310148                   | 1.34        | 7004922             | 1.27        | 7005222           | 2.52        |
| 5/32"  | 0.1562"   | 2"          | 3-1/8"        | 0310149                   | 1.41        | 7004923             | 1.44        | 7005223           | 2.71        |
| 11/64" | 0.1719"   | 2-1/8"      | 3-1/4"        | 0310150                   | 1.56        | 7004924             | 1.53        | 7005224           | 2.81        |
| 3/16"  | 0.1875"   | 2-5/16"     | 3-1/2"        | 0310151                   | 1.78        | 7004925             | 1.72        | 7005225           | 3.08        |
| 13/64" | 0.2031"   | 2-7/16"     | 3-5/8"        | 0310152                   | 1.96        | 7004926             | 1.89        | 7005226           | 3.42        |
| 7/32"  | 0.2188"   | 2-1/2"      | 3-3/4"        | 0310153                   | 2.17        | 7004927             | 1.95        | 7005227           | 3.99        |
| 15/64" | 0.2344"   | 2-5/8"      | 3-7/8"        | 0310154                   | 2.32        | 7004928             | 2.14        | 7005228           | 4.16        |
| 1/4"-E | 0.25"     | 2-3/4"      | 4"            | 0310155                   | 2.61        | 7004929             | 2.27        | 7005229           | 4.46        |
| 17/64" | 0.2656"   | 2-7/8"      | 4-1/8"        | 0310156                   | 3.27        | 7004930             | 2.61        | 7005230           | 5.76        |
| 9/32"  | 0.2812"   | 2-15/16"    | 4-1/4"        | 0310157                   | 3.58        | 7004931             | 2.79        | 7005231           | 5.90        |
| 19/64" | 0.2969"   | 3-1/16"     | 4-3/8"        | 0310158                   | 3.95        | 7004932             | 3.23        | 7005232           | 6.97        |
| 5/16"  | 0.3125"   | 3-3/16"     | 4-1/2"        | 0310159                   | 4.02        | 7004933             | 3.49        | 7005233           | 7.15        |
| 21/64" | 0.3281"   | 3-5/16"     | 4-5/8"        | 0310160                   | 4.46        | 7004934             | 3.78        | 7005234           | 8.01        |
| 11/32" | 0.3438"   | 3-7/16"     | 4-3/4"        | 0310161                   | 5.18        | 7004935             | 4.23        | 7005235           | 8.92        |
| 23/64" | 0.3594"   | 3-1/2"      | 4-7/8"        | 0310162                   | 5.73        | 7004936             | 4.82        | 7005236           | 10.10       |
| 3/8"   | 0.375"    | 3-5/8"      | 5"            | 0310163                   | 5.87        | 7004937             | 4.91        | 7005237           | 10.31       |
| 25/64" | 0.3906"   | 3-3/4"      | 5-1/8"        | 0310164                   | 6.60        | 7004938             | 5.65        | 7005238           | 11.67       |
| 13/32" | 0.4062"   | 3-7/8"      | 5-1/4"        | 0310165                   | 6.74        | 7004939             | 5.78        | 7005239           | 12.06       |
| 27/64" | 0.4219"   | 3-15/16"    | 5-3/8"        | 0310166                   | 7.43        | 7004940             | 6.46        | 7005240           | 13.08       |
| 7/16"  | 0.4375"   | 4-1/16"     | 5-1/2"        | 0310167                   | 8.01        | 7004941             | 6.69        | 7005241           | 13.37       |
| 29/64" | 0.4531"   | 4-3/16"     | 5-5/8"        | 0310168                   | 9.28        | 7004942             | 7.65        | 7005242           | 14.99       |
| 15/32" | 0.4688"   | 4-5/16"     | 5-3/4"        | 0310169                   | 9.43        | 7004943             | 8.17        | 7005243           | 15.65       |
| 31/64" | 0.4844"   | 4-3/8"      | 5-7/8"        | 0310170                   | 9.86        | 7004944             | 8.46        | 7005244           | 15.88       |
| 1/2"   | 0.5"      | 4-1/2"      | 6"            | 0310171                   | 9.96        | 7004945             | 8.53        | 7005245           | 16.18       |
| #1     | 0.228"    | 2-5/8"      | 3-7/8"        | 0310172                   | 2.54        | 7004946             | 2.30        | 7005246           | 4.46        |
| #2     | 0.221"    | 2-5/8"      | 3-7/8"        | 0310173                   | 2.54        | 7004947             | 2.30        | 7005247           | 4.46        |
| #3     | 0.213"    | 2-1/2"      | 3-3/4"        | 0310174                   | 2.54        | 7004948             | 2.07        | 7005248           | 4.17        |
| #4     | 0.209"    | 2-1/2"      | 3-3/4"        | 0310175                   | 2.54        | 7004949             | 2.07        | 7005249           | 4.17        |
| #5     | 0.2055"   | 2-1/2"      | 3-3/4"        | 0310176                   | 2.54        | 7004950             | 2.07        | 7005250           | 4.17        |
| #6     | 0.204"    | 2-1/2"      | 3-3/4"        | 0310177                   | 2.54        | 7004951             | 2.07        | 7005251           | 4.17        |
| #7     | 0.201"    | 2-7/16"     | 3-5/8"        | 0310178                   | 1.89        | 7004952             | 1.85        | 7005252           | 3.74        |
| #8     | 0.199"    | 2-7/16"     | 3-5/8"        | 0310179                   | 1.89        | 7004953             | 1.85        | 7005253           | 3.74        |
| #9     | 0.196"    | 2-7/16"     | 3-5/8"        | 0310180                   | 2.07        | 7004954             | 1.85        | 7005254           | 3.74        |
| #10    | 0.1935"   | 2-7/16"     | 3-5/8"        | 0310181                   | 2.07        | 7004955             | 1.85        | 7005255           | 3.74        |
| #11    | 0.191"    | 2-5/16"     | 3-1/2"        | 0310182                   | 2.07        | 7004956             | 1.77        | 7005256           | 3.42        |
| #12    | 0.189"    | 2-5/16"     | 3-1/2"        | 0310183                   | 2.07        | 7004957             | 1.83        | 7005257           | 3.42        |
| #13    | 0.185"    | 2-5/16"     | 3-1/2"        | 0310184                   | 1.81        | 7004958             | 1.83        | 7005258           | 3.37        |
| #14    | 0.182"    | 2-3/16"     | 3-3/8"        | 0310185                   | 1.81        | 7004959             | 1.83        | 7005259           | 3.33        |
| #15    | 0.18"     | 2-3/16"     | 3-3/8"        | 0310186                   | 1.81        | 7004960             | 1.83        | 7005260           | 3.33        |
| #16    | 0.177"    | 2-3/16"     | 3-3/8"        | 0310187                   | 1.81        | 7004961             | 1.72        | 7005261           | 3.33        |
| #17    | 0.173"    | 2-3/16"     | 3-3/8"        | 0310188                   | 1.81        | 7004962             | 1.72        | 7005262           | 3.33        |
| #18    | 0.1695"   | 2-1/8"      | 3-1/4"        | 0310189                   | 1.63        | 7004963             | 1.60        | 7005263           | 2.91        |
| #19    | 0.166"    | 2-1/8"      | 3-1/4"        | 0310190                   | 1.63        | 7004964             | 1.60        | 7005264           | 2.91        |
| #20    | 0.161"    | 2-1/8"      | 3-1/4"        | 0310191                   | 1.63        | 7004965             | 1.60        | 7005265           | 2.82        |
| #11    | 0.191"    | 2-5/16"     | 3-1/2"        | 0310192                   | 1.49        | 7004966             | 1.49        | 7005266           | 2.70        |
| #22    | 0.157"    | 2"          | 3-1/8"        | 0310193                   | 1.49        | 7004967             | 1.49        | 7005267           | 2.70        |
| #23    | 0.154"    | 2"          | 3-1/8"        | 0310194                   | 1.49        | 7004968             | 1.49        | 7005268           | 2.62        |
| #24    | 0.152"    | 2"          | 3-1/8"        | 0310195                   | 1.49        | 7004969             | 1.49        | 7005269           | 2.62        |



| Size | Decimal | Flute Lgth. | Overall Lgth. | Norseman 100 /240B Bright |             | C/L 150D HSS Bright |             | C/L 150T TiN Coat |             |
|------|---------|-------------|---------------|---------------------------|-------------|---------------------|-------------|-------------------|-------------|
|      |         |             |               | Part No.                  | Price /Each | Part No.            | Price /Each | Part No.          | Price /Each |
| #25  | 0.1495" | 1-7/8"      | 3"            | 0310196                   | \$1.34      | 7004970             | \$1.44      | 7005270           | \$2.62      |
| #26  | 0.147"  | 1-7/8"      | 3"            | 0310197                   | 1.34        | 7004971             | 1.44        | 7005271           | 2.62        |
| #27  | 0.144"  | 1-7/8"      | 3"            | 0310198                   | 1.34        | 7004972             | 1.44        | 7005272           | 2.62        |
| #28  | 0.1405" | 1-3/4"      | 2-7/8"        | 0310199                   | 1.34        | 7004973             | 1.27        | 7005273           | 2.45        |
| #29  | 0.136"  | 1-3/4"      | 2-7/8"        | 0310200                   | 1.34        | 7004974             | 1.25        | 7005274           | 2.45        |
| #30  | 0.1285" | 1-5/8"      | 2-3/4"        | 0310201                   | 1.34        | 7004975             | 1.25        | 7005275           | 2.45        |
| #31  | 0.12"   | 1-5/8"      | 2-3/4"        | 0310202                   | 1.27        | 7004976             | 1.25        | 7005276           | 2.45        |
| #32  | 0.116"  | 1-5/8"      | 2-3/4"        | 0310203                   | 1.27        | 7004977             | 1.21        | 7005277           | 2.45        |
| #33  | 0.113"  | 1-1/2"      | 2-5/8"        | 0310204                   | 1.27        | 7004978             | 1.21        | 7005278           | 2.45        |
| #34  | 0.111"  | 1-1/2"      | 2-5/8"        | 0310205                   | 1.27        | 7004979             | 1.21        | 7005279           | 2.45        |
| #35  | 0.11"   | 1-1/2"      | 2-5/8"        | 0310206                   | 1.19        | 7004980             | 1.21        | 7005280           | 2.45        |
| #36  | 0.1065" | 1-7/16"     | 2-1/2"        | 0310207                   | 1.19        | 7004981             | 1.20        | 7005281           | 2.41        |
| #37  | 0.104"  | 1-7/16"     | 2-1/2"        | 0310208                   | 1.19        | 7004982             | 1.20        | 7005282           | 2.41        |
| #38  | 0.1015" | 1-7/16"     | 2-1/2"        | 0310209                   | 1.19        | 7004983             | 1.15        | 7005283           | 2.41        |
| #39  | 0.0995" | 1-3/8"      | 2-3/8"        | 0310210                   | 1.19        | 7004984             | 1.15        | 7005284           | 2.34        |
| #40  | 0.098"  | 1-3/8"      | 2-3/8"        | 0310211                   | 1.19        | 7004985             | 1.15        | 7005285           | 2.34        |
| #41  | 0.096"  | 1-3/8"      | 2-3/8"        | 0310212                   | 1.19        | 7004986             | 1.15        | 7005286           | 2.34        |
| #42  | 0.0935" | 1-1/4"      | 2-1/4"        | 0310213                   | 1.23        | 7004987             | 1.15        | 7005287           | 2.34        |
| #43  | 0.089"  | 1-1/4"      | 2-1/4"        | 0310214                   | 1.23        | 7004988             | 1.15        | 7005288           | 2.30        |
| #44  | 0.086"  | 1-1/8"      | 2-1/8"        | 0310215                   | 1.23        | 7004989             | 1.15        | 7005289           | 2.30        |
| #45  | 0.082"  | 1-1/8"      | 2-1/8"        | 0310216                   | 1.23        | 7004990             | 1.14        | 7005290           | 2.30        |
| #46  | 0.081"  | 1-1/8"      | 2-1/8"        | 0310217                   | 1.23        | 7004991             | 1.14        | 7005291           | 2.30        |
| #47  | 0.0785" | 1"          | 2"            | 0310218                   | 1.23        | 7004992             | 1.14        | 7005292           | 2.30        |
| #48  | 0.076"  | 1"          | 2"            | 0310219                   | 1.23        | 7004993             | 1.14        | 7005293           | 2.30        |
| #49  | 0.073"  | 1"          | 2"            | 0310220                   | 1.23        | 7004994             | 1.14        | 7005294           | 2.30        |
| #50  | 0.07"   | 1"          | 2"            | 0310221                   | 1.23        | 7004995             | 1.14        | 7005295           | 2.30        |
| #51  | 0.067"  | 1"          | 2"            | 0310222                   | 1.23        | 7004996             | 1.14        | 7005296           | 2.30        |
| #52  | 0.0635" | 7/8"        | 1-7/8"        | 0310223                   | 1.23        | 7004997             | 1.14        | 7005297           | 2.30        |
| #53  | 0.0595" | 7/8"        | 1-7/8"        | 0310224                   | 1.34        | 7004998             | 1.14        | 0355867           | 1.66        |
| #54  | 0.055"  | 7/8"        | 1-7/8"        | 0310225                   | 1.34        | 7004999             | 1.14        | 0355868           | 1.66        |
| #55  | 0.052"  | 7/8"        | 1-7/8"        | 0310226                   | 1.34        | 7005000             | 1.14        | 0355869           | 1.66        |
| #56  | 0.0465" | 3/8"        | 1-3/4"        | 0310227                   | 1.34        | 7005001             | 1.14        | 0355870           | 1.66        |
| #57  | 0.043"  | 3/8"        | 1-3/4"        | 0310228                   | 1.38        | 7005002             | 1.14        | 0355871           | 1.66        |
| #58  | 0.042"  | 11/16"      | 1-5/8"        | 0310229                   | 1.38        | 7005003             | 1.15        | 0355872           | 1.66        |
| #59  | 0.041"  | 11/16"      | 1-5/8"        | 0310230                   | 1.38        | 7005004             | 1.15        | 0355873           | 1.67        |
| #60  | 0.04"   | 11/16"      | 1-5/8"        | 0310231                   | 1.38        | 7005005             | 1.15        | 0355874           | 1.66        |
| #61  | 0.039"  | 11/16"      | 1-5/8"        | 0310232                   | 1.67        | 7005006             | 1.19        | 0355875           | 1.66        |
| #62  | 0.038"  | 5/8"        | 1-1/2"        | 0310233                   | 1.67        | 7005007             | 1.19        | 0355876           | 1.66        |
| #63  | 0.037"  | 5/8"        | 1-1/2"        | 0310234                   | 1.67        | 7005008             | 1.19        | 0355877           | 1.66        |
| #64  | 0.036"  | 5/8"        | 1-1/2"        | 0310235                   | 1.67        | 7005009             | 1.19        | 0355878           | 1.66        |
| #65  | 0.035"  | 5/8"        | 1-1/2"        | 0310236                   | 1.67        | 7005010             | 1.19        | 0355879           | 1.66        |
| #66  | 0.033"  | 1/2"        | 1-3/8"        | 0310237                   | 1.67        | 7005011             | 1.19        | 0355880           | 1.66        |
| #67  | 0.032"  | 1/2"        | 1-3/8"        | 0310238                   | 1.67        | 7005012             | 1.19        | 0355881           | 1.66        |
| #68  | 0.031"  | 1/2"        | 1-3/8"        | 0310239                   | 2.03        | 7005013             | 1.19        | 0355882           | 1.79        |
| #69  | 0.0292" | 1/2"        | 1-3/8"        | 0310240                   | 2.14        | 7005014             | 1.26        | 0355883           | 1.79        |
| #70  | 0.028"  | 3/8"        | 1-1/4"        | 0310241                   | 2.14        | 7005015             | 1.26        | 0355884           | 1.79        |
| #71  | 0.026"  | 3/8"        | 1-1/4"        | 0310242                   | 2.72        | 7005016             | 1.56        | 0355885           | 1.85        |
| #72  | 0.025"  | 5/16"       | 1-1/8"        | 0310243                   | 2.72        | 7005017             | 1.56        | 0355886           | 1.85        |
| #73  | 0.024"  | 1/4"        | 1"            | 0310244                   | 2.72        | 7005018             | 1.56        | 0355887           | 1.85        |
| #74  | 0.0225" | 1/4"        | 1"            | 0310245                   | 2.72        | 7005019             | 1.56        | 0355888           | 1.85        |
| #75  | 0.021"  | 1/4"        | 1"            | 0310246                   | 2.72        | 7005020             | 1.56        | 0355889           | 1.8         |



# HSS DRILL BITS

## HSS Drill Bits Cont.



| Size   | Decimal | Flute Lgth. | Overall Lgth. | Norseman 100 /240B Bright |             | C/L 150D HSS Bright |             | C/L 150T TIN Coat |             |
|--------|---------|-------------|---------------|---------------------------|-------------|---------------------|-------------|-------------------|-------------|
|        |         |             |               | Part No.                  | Price /Each | Part No.            | Price /Each | Part No.          | Price /Each |
| Ltr Q  | 0.332"  | 3-7/16"     | 4-3/4"        | 0310268                   | 5.00        | 7005058             | 4.39        | 7005313           | 8.39        |
| Ltr R  | 0.339"  | 3-7/16"     | 4-3/4"        | 0310269                   | 5.22        | 7005059             | 4.74        | 7005314           | 9.16        |
| Ltr S  | 0.348"  | 3-1/2"      | 4-7/8"        | 0310270                   | 6.02        | 7005060             | 5.04        | 7005315           | 9.50        |
| Ltr T  | 0.358"  | 3-1/2"      | 4-7/8"        | 0310271                   | 6.02        | 7005061             | 5.71        | 7005316           | 10.50       |
| Ltr U  | 0.368"  | 3-5/8"      | 5"            | 0310272                   | 6.09        | 7005062             | 5.71        | 7005317           | 10.57       |
| Ltr V  | 0.377"  | 3-5/8"      | 5"            | 0310273                   | 6.16        | 7005063             | 5.88        | 7005318           | 10.92       |
| Ltr W  | 0.386"  | 3-3/4"      | 5-1/8"        | 0310274                   | 6.85        | 7005064             | 6.07        | 7005319           | 11.21       |
| Ltr X  | 0.397"  | 3-3/4"      | 5-1/8"        | 0310275                   | 7.87        | 7005065             | 7.79        | 7005320           | 13.67       |
| Ltr Y  | 0.404"  | 3-7/8"      | 5-1/4"        | 0310276                   | 8.19        | 7005066             | 8.86        | 7005321           | 15.14       |
| Ltr Z  | 0.413"  | 3-7/8"      | 5-1/4"        | 0310277                   | 9.13        | 7005067             | 9.39        | 7005322           | 16.11       |
| 1.00mm | 0.0394" | 12mm        | 34mm          |                           |             | 0355650             | 0.86        | 7005323           | 2.46        |
| 1.05mm | 0.0413" | 12mm        | 34mm          |                           |             | 0355651             | 0.94        |                   |             |
| 1.10mm | 0.0433" | 14mm        | 36mm          |                           |             | 0355652             | 0.94        |                   |             |
| 1.15mm | 0.0453" | 14mm        | 36mm          |                           |             | 0355653             | 0.94        |                   |             |
| 1.20mm | 0.0472" | 16mm        | 38mm          |                           |             | 0355654             | 0.94        |                   |             |
| 1.25mm | 0.0492" | 16mm        | 38mm          |                           |             | 0355655             | 0.94        | 7005336           | 2.46        |
| 1.30mm | 0.0512" | 16mm        | 38mm          |                           |             | 0355656             | 0.94        | 7005337           | 2.46        |
| 1.35mm | 0.0531" | 18mm        | 40mm          |                           |             | 0355657             | 0.94        |                   |             |
| 1.40mm | 0.0551" | 18mm        | 40mm          |                           |             | 0355658             | 0.94        |                   |             |
| 1.45mm | 0.0571" | 18mm        | 40mm          |                           |             | 0355659             | 0.94        | 7005338           | 2.46        |
| 1.50mm | 0.0591" | 18mm        | 40mm          |                           |             | 0355660             | 0.89        | 7005339           | 2.46        |
| 1.55mm | 0.061"  | 20mm        | 43mm          |                           |             | 0355661             | 0.94        | 7005340           | 2.51        |
| 1.60mm | 0.063"  | 20mm        | 43mm          |                           |             | 0355662             | 0.94        |                   |             |
| 1.65mm | 0.065"  | 20mm        | 43mm          |                           |             | 0355663             | 0.94        | 7005341           | 2.51        |
| 1.70mm | 0.0669" | 20mm        | 43mm          |                           |             | 0355664             | 0.94        |                   |             |
| 1.75mm | 0.0689" | 22mm        | 46mm          |                           |             | 0355665             | 0.94        | 7005342           | 2.51        |
| 1.80mm | 0.0709" | 22mm        | 46mm          |                           |             | 0355666             | 0.94        |                   |             |
| 1.85mm | 0.0728" | 22mm        | 46mm          |                           |             | 0355667             | 0.94        |                   |             |
| 1.90mm | 0.0748" | 22mm        | 46mm          |                           |             | 0355668             | 0.94        |                   |             |
| 1.95mm | 0.0768" | 24mm        | 49mm          |                           |             | 0355669             | 0.94        |                   |             |
| 2.00mm | 0.0787" | 24mm        | 49mm          |                           |             | 0355670             | 0.86        | 7005324           | 2.51        |
| 2.05mm | 0.0807" | 24mm        | 49mm          |                           |             | 0355671             | 0.94        | 7005343           | 2.50        |
| 2.10mm | 0.0866" | 27mm        | 53mm          |                           |             | 0355672             | 0.94        | 7005344           | 2.50        |
| 2.15mm | 0.0846" | 27mm        | 53mm          |                           |             | 0355673             | 0.94        |                   |             |
| 2.20mm | 0.0866" | 27mm        | 53mm          |                           |             | 0355673             | 0.94        | 7005345           | 2.52        |
| 2.25mm | 0.0886" | 27mm        | 53mm          |                           |             | 0355675             | 0.94        |                   |             |
| 2.30mm | 0.0906" | 27mm        | 53mm          |                           |             | 0355676             | 0.94        | 7005346           | 2.52        |
| 2.35mm | 0.0925" | 27mm        | 53mm          |                           |             | 0355677             | 0.94        |                   |             |
| 2.40mm | 0.0945" | 30mm        | 57mm          |                           |             | 0355678             | 0.94        |                   |             |
| 2.45mm | 0.0965" | 30mm        | 57mm          |                           |             | 0355679             | 0.94        |                   |             |
| 2.50mm | 0.0984" | 30mm        | 57mm          |                           |             | 0355680             | 0.94        | 7005347           | 2.61        |
| 2.60mm | 0.1024" | 30mm        | 57mm          |                           |             | 0355681             | 1.01        |                   |             |
| 2.70mm | 0.1063" | 33mm        | 61mm          |                           |             | 0355682             | 1.01        |                   |             |
| 2.80mm | 0.1102" | 33mm        | 61mm          |                           |             | 0355683             | 1.01        | 7005348           | 2.61        |
| 2.90mm | 0.1142" | 33mm        | 61mm          |                           |             | 0355684             | 1.01        | 7005349           | 2.61        |
| 3.00mm | 0.1181" | 33mm        | 61mm          |                           |             | 0355685             | 0.93        | 7005325           | 2.69        |
| 3.10mm | 0.122"  | 36mm        | 65mm          |                           |             | 0355686             | 1.01        | 7005350           | 2.75        |
| 3.20mm | 0.126"  | 36mm        | 65mm          |                           |             | 0355687             | 1.01        | 7005351           | 2.75        |
| 3.30mm | 0.1299" | 36mm        | 65mm          |                           |             | 0355688             | 1.01        | 7005352           | 2.75        |
| 3.40mm | 0.1339" | 39mm        | 70mm          |                           |             | 0355689             | 1.01        | 7005353           | 2.75        |
| 3.50mm | 0.1378" | 39mm        | 70mm          |                           |             | 0355690             | 0.98        | 7005354           | 2.75        |
| 3.60mm | 0.1417" | 39mm        | 70mm          |                           |             | 0355691             | 1.18        |                   |             |
| 3.70mm | 0.1457" | 39mm        | 70mm          |                           |             | 0355692             | 1.18        | 7005355           | 2.87        |
| 3.80mm | 0.1496" | 43mm        | 75mm          |                           |             | 0355693             | 1.18        |                   |             |
| 3.90mm | 0.1535" | 43mm        | 75mm          |                           |             | 0355694             | 1.18        |                   |             |
| 4.00mm | 0.1575" | 43mm        | 75mm          |                           |             | 0355695             | 1.05        | 7005326           | 2.97        |
| 4.10mm | 0.1614" | 43mm        | 75mm          |                           |             | 0355696             | 1.18        |                   |             |
| 4.20mm | 0.1654" | 43mm        | 75mm          |                           |             | 0355697             | 1.18        | 7005356           | 3.11        |
| 4.30mm | 0.1693" | 47mm        | 80mm          |                           |             | 0355698             | 1.31        |                   |             |
| 4.40mm | 0.1732" | 47mm        | 80mm          |                           |             | 0355699             | 1.42        |                   |             |
| 4.50mm | 0.1772" | 47mm        | 80mm          |                           |             | 0355740             | 1.23        | 7005357           | 3.11        |
| 4.60mm | 0.1811" | 47mm        | 80mm          |                           |             | 0355741             | 1.42        |                   |             |
| 4.70mm | 0.185"  | 47mm        | 80mm          |                           |             | 0355742             | 1.47        |                   |             |
| 4.80mm | 0.189"  | 52mm        | 86mm          |                           |             | 0355743             | 1.47        |                   |             |
| 4.90mm | 0.1929" | 52mm        | 86mm          |                           |             | 0355744             | 1.47        | 7005358           | 3.61        |
| 5.00mm | 0.1969" | 52mm        | 86mm          |                           |             | 0355745             | 1.42        | 7005327           | 3.87        |
| 5.10mm | 0.2008" | 52mm        | 86mm          |                           |             | 0355746             | 1.69        |                   |             |
| 5.20mm | 0.2047" | 52mm        | 86mm          |                           |             | 0355747             | 1.70        |                   |             |
| 5.30mm | 0.2087" | 52mm        | 86mm          |                           |             | 0355748             | 1.69        |                   |             |
| 5.40mm | 0.2126" | 57mm        | 93mm          |                           |             | 0355749             | 1.69        |                   |             |



| Size    | Decimal | Flute Lgth. | Overall Lgth. | Norseman 100 /240B Bright |             | C/L 150D HSS Bright |             | C/L 150T TIN Coat |             |
|---------|---------|-------------|---------------|---------------------------|-------------|---------------------|-------------|-------------------|-------------|
|         |         |             |               | Part No.                  | Price /Each | Part No.            | Price /Each | Part No.          | Price /Each |
| 5.50mm  | 0.2165" | 57mm        | 93mm          |                           |             | 0355750             | 1.50        | 7005351           | 2.75        |
| 5.60mm  | 0.2205" | 57mm        | 93mm          |                           |             | 0355751             | 1.74        |                   |             |
| 5.70mm  | 0.2244" | 57mm        | 93mm          |                           |             | 0355752             | 1.74        | 7005360           | 4.45        |
| 5.80mm  | 0.2283" | 57mm        | 93mm          |                           |             | 0355753             | 1.74        |                   |             |
| 5.90mm  | 0.2323" | 57mm        | 93mm          |                           |             | 0355754             | 1.74        |                   |             |
| 6.00mm  | 0.2362" | 57mm        | 93mm          |                           |             | 0355755             | 1.66        | 7005328           | 5.31        |
| 6.10mm  | 0.2402" | 63mm        | 101mm         |                           |             | 0355756             | 1.86        |                   |             |
| 6.20mm  | 0.2441" | 63mm        | 101mm         |                           |             | 0355757             | 1.86        |                   |             |
| 6.30mm  | 0.248"  | 63mm        | 101mm         |                           |             | 0355758             | 1.86        |                   |             |
| 6.40mm  | 0.252"  | 63mm        | 101mm         |                           |             | 0355759             | 1.95        | 7005361           | 5.55        |
| 6.50mm  | 0.2559" | 63mm        | 101mm         |                           |             | 0355760             | 1.95        | 7005362           | 5.55        |
| 6.60mm  | 0.2598" | 63mm        | 101mm         |                           |             | 0355761             | 2.11        |                   |             |
| 6.70mm  | 0.2638" | 63mm        | 101mm         |                           |             | 0355762             | 2.00        | 7005363           | 5.55        |
| 6.80mm  | 0.2677" | 69mm        | 109mm         |                           |             | 0355763             | 2.16        | 7005364           | 5.56        |
| 6.90mm  | 0.2717" | 69mm        | 109mm         |                           |             | 0355764             | 2.21        |                   |             |
| 7.00mm  | 0.2756" | 69mm        | 109mm         |                           |             | 0355765             | 2.21        | 7005329           | 5.78        |
| 7.10mm  | 0.2795" | 69mm        | 109mm         |                           |             | 0355766             | 2.27        |                   |             |
| 7.20mm  | 0.2835" | 69mm        | 109mm         |                           |             | 0355767             | 2.53        | 7005365           | 6.60        |
| 7.30mm  | 0.2874" | 69mm        | 109mm         |                           |             | 0355768             | 2.57        |                   |             |
| 7.40mm  | 0.2913" | 69mm        | 109mm         |                           |             | 0355769             | 2.57        |                   |             |
| 7.50mm  | 0.2953" | 69mm        | 109mm         |                           |             | 0355770             | 2.57        | 7005366           | 6.60        |
| 7.60mm  | 0.2992" | 75mm        | 117mm         |                           |             | 0355771             | 2.96        |                   |             |
| 7.70mm  | 0.3031" | 75mm        | 117mm         |                           |             | 0355772             | 2.96        |                   |             |
| 7.80mm  | 0.3071" | 75mm        | 117mm         |                           |             | 0355773             | 2.96        |                   |             |
| 7.90mm  | 0.311"  | 75mm        | 117mm         |                           |             | 0355774             | 2.96        |                   |             |
| 8.00mm  | 0.315"  | 75mm        | 117mm         |                           |             | 0355775             | 2.96        | 7005330           | 7.85        |
| 8.10mm  | 0.3189" | 75mm        | 117mm         |                           |             | 0355776             | 3.17        |                   |             |
| 8.20mm  | 0.3228" | 75mm        | 117mm         |                           |             | 0355777             | 3.17        |                   |             |
| 8.30mm  | 0.3268" | 75mm        | 117mm         |                           |             | 0355778             | 3.17        |                   |             |
| 8.40mm  | 0.3307" | 75mm        | 117mm         |                           |             | 0355779             | 3.75        |                   |             |
| 8.50mm  | 0.3346" | 75mm        | 117mm         |                           |             | 0355780             | 3.33        | 7005367           | 8.08        |
| 8.60mm  | 0.3386" | 81mm        | 125mm         |                           |             | 0355781             | 3.75        |                   |             |
| 8.70mm  | 0.3425" | 81mm        | 125mm         |                           |             | 0355782             | 3.86        | 7005368           | 8.74        |
| 8.80mm  | 0.3465" | 81mm        | 125mm         |                           |             | 0355783             | 3.96        |                   |             |
| 8.90mm  | 0.3504" | 81mm        | 125mm         |                           |             | 0355784             | 3.96        |                   |             |
| 9.00mm  | 0.3543" | 81mm        | 125mm         |                           |             | 0355785             | 3.81        | 7005331           | 8.98        |
| 9.10mm  | 0.3583" | 81mm        | 125mm         |                           |             | 0355786             | 3.96        |                   |             |
| 9.20mm  | 0.3622" | 81mm        | 125mm         |                           |             | 0355787             | 4.18        |                   |             |
| 9.30mm  | 0.3661" | 81mm        | 125mm         |                           |             | 0355788             | 4.18        |                   |             |
| 9.40mm  | 0.3701" | 81mm        | 125mm         |                           |             | 0355789             | 4.18        |                   |             |
| 9.50mm  | 0.374"  | 81mm        | 125mm         |                           |             | 0355790             | 4.02        | 7005369           | 10.11       |
| 9.60mm  | 0.378"  | 87mm        | 133mm         |                           |             | 0355791             | 4.69        |                   |             |
| 9.70mm  | 0.3819" | 87mm        | 133mm         |                           |             | 0355792             | 4.69        |                   |             |
| 9.80mm  | 0.3858" | 87mm        | 133mm         |                           |             | 0355793             | 4.69        |                   |             |
| 9.90mm  | 0.3898" | 87mm        | 133mm         |                           |             | 0355794             | 4.69        |                   |             |
| 10.00mm | 0.3937" | 87mm        | 133mm         |                           |             | 0355795             | 4.55        | 7005332           | 11.14       |
| 10.20mm | 0.4016" | 87mm        | 133mm         |                           |             | 0355802             | 4.87        | 7005370           | 11.73       |
| 10.50mm | 0.4134" | 87mm        | 133mm         |                           |             | 0355796             | 4.91        | 7005371           | 12.47       |
| 10.80mm | 0.4252" | 94mm        | 142mm         |                           |             | 0355803             | 5.80        |                   |             |
| 11.00mm | 0.4331" | 94mm        | 142mm         |                           |             | 0355797             | 5.17        | 7005333           | 13.37       |
| 11.20mm | 0.4409" | 94mm        | 142mm         |                           |             | 0355804             | 6.22        | 7005372           | 13.91       |
| 11.50mm | 0.4528" | 94mm        | 142mm         |                           |             | 0355799             | 5.85        | 7005371           | 12.47       |
| 11.80mm | 0.4646" | 94mm        | 142mm         |                           |             | 0355805             | 6.70        |                   |             |
| 12.00mm | 0.4724" | 101mm       | 151mm         |                           |             |                     |             | 7005334           | 15.96       |
| 12.20mm | 0.4803" | 101mm       | 151mm         |                           |             | 0355806             | 6.96        | 7005374           | 16.02       |
| 12.50mm | 0.4921" | 101mm       | 151mm         |                           |             | 0355800             | 6.59        | 7005375           | 16.25       |
| 12.80mm | 0.5039" | 101mm       | 151mm         |                           |             | 0355807             | 11.39       |                   |             |
| 13.00mm | 0.5118" | 101mm       | 151mm         |                           |             | 0355801             | 11.39       | 7005335           | 28.12       |
| 13.20mm | 0.5197" | 101mm       | 151mm         |                           |             | 0355808             | 13.41       |                   |             |
| 14.00mm | 0.5512" | 108mm       | 160mm         |                           |             | 0355809             | 13.67       |                   |             |
| 13.50mm | 0.5315" | 108mm       | 160mm         |                           |             | 0355810             | 13.35       |                   |             |
| 13.80mm | 0.5433" | 108mm       | 160mm         |                           |             | 0355811             | 14.03       |                   |             |
| 14.25mm | 0.561"  | 108mm       | 160mm         |                           |             | 0355812             | 15.04       |                   |             |
| 14.50mm | 0.5709" | 114mm       | 169mm         |                           |             | 0355813             | 15.04       |                   |             |
| 14.75mm | 0.5807" | 114mm       | 169mm         |                           |             | 0355814             | 15.25       |                   |             |
| 15.00mm | 0.590   |             |               |                           |             |                     |             |                   |             |

# HSS DRILL BITS

## HSS Drill Bits Cont.



### Norseman 135° Mechanic Length Split Point



The 175-AG drill is a Super Premium drill made from hi-molybdenum tool steel. It has a 135° split point. It has 3 flats on the shank above 3/16" to provide a positive grip in the chuck.

| Size   | Decimal | Part No. | Price /Each |
|--------|---------|----------|-------------|
| 1/16"  | 0.0625" | 0311115  | \$1.45      |
| 5/64"  | 0.0781" | 0311116  | 1.51        |
| 3/32"  | 0.0938" | 0311117  | 1.54        |
| 7/64"  | 0.1094" | 0311118  | 1.65        |
| 1/8"   | 0.125"  | 0311119  | 1.96        |
| 9/64"  | 0.1406" | 0311120  | 1.98        |
| 5/32"  | 0.1562" | 0311121  | 2.11        |
| 11/64" | 0.1719" | 0311122  | 2.19        |
| 3/16"  | 0.1875" | 0311123  | 2.90        |
| 13/64" | 0.2031" | 0311124  | 3.18        |
| 7/32"  | 0.2188" | 0311125  | 3.26        |
| 15/64" | 0.2344" | 0311126  | 3.51        |
| 1/4"-E | 0.25"   | 0311127  | 3.94        |
| 17/64" | 0.2656" | 0311128  | 4.60        |
| 9/32"  | 0.2812" | 0311129  | 4.89        |
| 19/64" | 0.2969" | 0311130  | 5.45        |
| 5/16"  | 0.3125" | 0311131  | 5.74        |
| 21/64" | 0.3281" | 0311132  | 6.14        |
| 11/32" | 0.3438" | 0311133  | 7.84        |
| 23/64" | 0.3594" | 0311134  | 8.70        |
| 3/8"   | 0.375"  | 0311135  | 8.96        |
| 25/64" | 0.3906" | 0311136  | 10.25       |
| 13/32" | 0.4062" | 0311137  | 10.58       |
| 27/64" | 0.4219" | 0311138  | 11.72       |
| 7/16"  | 0.4375" | 0311139  | 12.14       |
| 29/64" | 0.4531" | 0311140  | 13.63       |
| 15/32" | 0.4688" | 0311141  | 14.48       |
| 31/64" | 0.5"    | 0311142  | 15.39       |
| 1/2"   | 0.4844" | 0311143  | 15.61       |

### 135° HSS Jobbers Length Split Point

- Heavy-duty, surface treated, 135° split point.
- This 135 degree split point drill is self centering and requires less thrust in drilling harder materials than a general purpose drill. It is recommended for medium hardness metal drilling applications.
- Cle-Line 1801 split point drill bits are self-centering and reduce thrust.
- The black oxide finish increases lubricity.
- Cle-Line 1878 have a black and gold finish to increase lubricity and abrasion resistance.
- Chicago-Latrobe 150ASP heavy duty, production drill bits are made of premium HSS.
- These drill bits are manufactured to NAS 907 Type B specifications.

- Chicago-Latrobe 150ASPTN heavy duty, production drill bits are made of premium HSS.
- The Titanium Nitride (TiN) coating adds lubricity and hardness, enhancing chip flow and the tool life.
- These are also manufactured to NAS 907 Type B specifications.



|        |         |             |               | <b>FASTENAL</b>                  | <b>CLE-LINE</b>                | <b>FASTENAL</b>                   | <b>CLE-LINE</b>                       | <b>norseman</b>       | <b>norseman</b>                      | <b>CL</b>                    | <b>CL</b>                      |          |             |       |        |         |      |         |      |
|--------|---------|-------------|---------------|----------------------------------|--------------------------------|-----------------------------------|---------------------------------------|-----------------------|--------------------------------------|------------------------------|--------------------------------|----------|-------------|-------|--------|---------|------|---------|------|
|        |         |             |               | Fastenal 135° S/P HD Black Oxide | CleLine 1801 135° S/P HD Black | Fastenal 135° S/P HD Black & Gold | CleLine 1878 135° S/P HD Black & Gold | Norseman 190 HD Black | Norseman 190 AG Magnum Super Premium | C/L 150ASP 135° S/P HD Black | C/L 150ASPTN 135° S/P TiN Coat |          |             |       |        |         |      |         |      |
| Size   | Decimal | Flute Lgth. | Overall Lgth. | Part No.                         | Price /Each                    | Part No.                          | Price /Each                           | Part No.              | Price /Each                          | Part No.                     | Price /Each                    | Part No. | Price /Each |       |        |         |      |         |      |
| 1/64"  | 0.0156" | 3/16"       | 3/4"          |                                  |                                |                                   |                                       | 53052                 | \$1.42                               |                              |                                | 7004777  | \$2.23      |       |        |         |      |         |      |
| 1/32"  | 0.0312" | 1/2"        | 1-3/8"        |                                  |                                |                                   |                                       | 53053                 | 1.37                                 |                              |                                | 7004778  | 1.37        |       |        |         |      |         |      |
| 3/64"  | 0.0469" | 3/8"        | 1-3/4"        |                                  |                                |                                   |                                       | 53054                 | 1.26                                 |                              |                                | 7004779  | 1.33        |       |        |         |      |         |      |
| 1/16"  | 0.0625" | 7/8"        | 1-7/8"        | 0346182                          | \$1.05                         | 7011542                           | 1.13                                  | 0345837               | \$1.27                               | 7012099                      | \$1.36                         | 53055    | 1.20        | 53720 | \$1.45 | 7004808 | 1.27 | 7005376 | 2.27 |
| 5/64"  | 0.0781" | 1"          | 2"            | 0346183                          | 1.10                           | 7011543                           | 1.18                                  | 0345838               | 1.32                                 | 7012100                      | 1.42                           | 53056    | 1.25        | 53721 | 1.51   | 7004809 | 1.27 | 7005377 | 2.29 |
| 3/32"  | 0.0938" | 1-1/4"      | 2-1/4"        | 0346184                          | 1.11                           | 7011544                           | 1.19                                  | 0345839               | 1.34                                 | 7012101                      | 1.44                           | 53057    | 1.27        | 53722 | 1.54   | 7004810 | 1.27 | 7005378 | 2.35 |
| 7/64"  | 0.1094" | 1-1/2"      | 2-5/8"        | 0346185                          | 1.20                           | 7011545                           | 1.29                                  | 0345840               | 1.44                                 | 7012102                      | 1.55                           | 53058    | 1.37        | 53723 | 1.65   | 7004811 | 1.34 | 7005379 | 2.50 |
| 1/8"   | 0.125"  | 1-5/8"      | 2-3/4"        | 0346186                          | 1.36                           | 7011546                           | 1.46                                  | 0345841               | 1.64                                 | 7012103                      | 1.76                           | 53059    | 1.55        | 53724 | 1.87   | 7004812 | 1.33 | 7005380 | 2.57 |
| 9/64"  | 0.1406" | 1-3/4"      | 2-7/8"        | 0346187                          | 1.44                           | 7011547                           | 1.55                                  | 0345842               | 1.73                                 | 7012104                      | 1.86                           | 53060    | 1.65        | 53725 | 1.98   | 7004813 | 1.42 | 7005381 | 2.68 |
| 5/32"  | 0.1562" | 2"          | 3-1/8"        | 0346188                          | 1.53                           | 7011548                           | 1.64                                  | 0345843               | 1.84                                 | 7012105                      | 1.98                           | 53061    | 1.75        | 53726 | 2.11   | 7004814 | 1.54 | 7005382 | 2.90 |
| 11/64" | 0.1719" | 2-1/8"      | 3-1/4"        | 0346189                          | 1.59                           | 7011549                           | 1.71                                  | 0345844               | 1.92                                 | 7012106                      | 2.06                           | 53062    | 1.82        | 53727 | 2.19   | 7004815 | 1.59 | 7005383 | 2.97 |
| 3/16"  | 0.1875" | 2-5/16"     | 3-1/2"        | 0346190                          | 1.89                           | 7011550                           | 2.03                                  | 0345845               | 2.31                                 | 7012107                      | 2.48                           | 53063    | 2.16        | 53728 | 2.64   | 7004816 | 1.84 | 7005384 | 3.26 |
| 13/64" | 0.2031" | 2-7/16"     | 3-5/8"        | 0346191                          | 2.09                           | 7011551                           | 2.24                                  | 0345846               | 2.53                                 | 7012108                      | 2.71                           | 53064    | 2.39        | 53729 | 2.89   | 7004817 | 2.00 | 7005385 | 3.62 |
| 7/32"  | 0.2188" | 2-1/2"      | 3-3/4"        | 0346192                          | 2.15                           | 7011552                           | 2.30                                  | 0345847               | 2.58                                 | 7012109                      | 2.77                           | 53065    | 2.45        | 53730 | 2.95   | 7004818 | 2.11 | 7005386 | 4.16 |
| 15/64" | 0.2344" | 2-5/8"      | 3-7/8"        | 0346193                          | 2.31                           | 7011553                           | 2.48                                  | 0345848               | 2.79                                 | 7012110                      | 2.99                           | 53066    | 2.64        | 53731 | 3.18   | 7004819 | 2.38 | 7005387 | 4.39 |
| 1/4"-E | 0.25"   | 2-3/4"      | 4"            | 0346194                          | 2.51                           | 7011554                           | 2.69                                  | 0345849               | 3.04                                 | 7012111                      | 3.26                           | 53067    | 2.87        | 53732 | 3.47   | 7004820 | 2.57 | 7005388 | 4.58 |
| 17/64" | 0.2656" | 2-7/8"      | 4-1/8"        | 0346195                          | 3.01                           | 7011555                           | 3.23                                  | 0345850               | 3.62                                 | 7012112                      | 3.88                           | 53068    | 3.44        | 53733 | 4.14   | 7004821 | 2.97 | 7005389 | 5.88 |
| 9/32"  | 0.2812" | 2-15/16"    | 4-1/4"        | 0346196                          | 3.19                           | 7011556                           | 3.42                                  | 0345851               | 3.88                                 | 7012113                      | 4.16                           | 53069    | 3.64        | 53734 | 4.44   | 7004822 | 3.04 | 7005390 | 6.13 |
| 19/64" | 0.2969" | 3-1/16"     | 4-3/8"        | 0346197                          | 3.60                           | 7011557                           | 3.86                                  | 0345852               | 4.36                                 | 7012114                      | 4.67                           | 53070    | 4.12        | 53735 | 4.98   | 7004823 | 3.62 | 7005391 | 7.24 |
| 5/16"  | 0.3125" | 3-3/16"     | 4-1/2"        | 0346198                          | 3.83                           | 7011558                           | 4.11                                  | 0345853               | 4.63                                 | 7012115                      | 4.96                           | 53071    | 4.38        | 53736 | 5.29   | 7004824 | 3.87 | 7005392 | 7.35 |



## HSS Drill Bits Cont.



| Size   | Decimal | Flute Lgth. | Overall Lgth. | Fastenal 135° S/P HD Black Oxide |             | CleLine 1801 135° S/P HD Black |             | Fastenal 135° S/P HD Black & Gold |             | CleLine 1878 135° S/P HD Black & Gold |             | Norseman 190 HD Black |             | Norseman 190 AG Magnum Super Premium |             | CL 150ASP 135° S/P HD Black |             | CL 150ASP-TN 135° S/P TIN Coat |             |
|--------|---------|-------------|---------------|----------------------------------|-------------|--------------------------------|-------------|-----------------------------------|-------------|---------------------------------------|-------------|-----------------------|-------------|--------------------------------------|-------------|-----------------------------|-------------|--------------------------------|-------------|
|        |         |             |               | Part No.                         | Price /Each | Part No.                       | Price /Each | Part No.                          | Price /Each | Part No.                              | Price /Each | Part No.              | Price /Each | Part No.                             | Price /Each | Part No.                    | Price /Each | Part No.                       | Price /Each |
| 21/64" | 0.3281" | 3-5/16"     | 4-5/8"        | 0346199                          | \$4.05      | 7011559                        | \$4.34      | 0345854                           | \$4.95      | 7012116                               | \$5.31      | 53072                 | \$4.63      | 53737                                | \$5.66      | 7004825                     | \$4.39      | 7005393                        | \$8.35      |
| 11/32" | 0.3438" | 3-7/16"     | 4-3/4"        | 0346200                          | 4.76        | 7011560                        | 5.10        | 0345855                           | 5.84        | 7012117                               | 6.26        | 53073                 | 5.44        | 53738                                | 6.68        | 7004826                     | 4.75        | 7005394                        | 9.27        |
| 23/64" | 0.3594" | 3-1/2"      | 4-7/8"        | 0346201                          | 5.09        | 7011561                        | 5.46        | 0345856                           | 6.22        | 7012118                               | 6.67        | 53074                 | 5.82        | 53739                                | 7.11        | 7004827                     | 5.42        | 7005395                        | 10.35       |
| 3/8"   | 0.375"  | 3-5/8"      | 5"            | 0346202                          | 5.52        | 7011562                        | 5.92        | 0345857                           | 6.77        | 7012119                               | 7.26        | 53075                 | 6.31        | 53740                                | 7.74        | 7004828                     | 5.49        | 7005396                        | 10.46       |
| 25/64" | 0.3906" | 3-3/4"      | 5-1/8"        | 0346203                          | 6.00        | 7011563                        | 6.43        | 0345858                           | 7.40        | 7012120                               | 7.93        | 53076                 | 6.86        | 53741                                | 8.46        | 7004829                     | 6.39        | 7005397                        | 11.72       |
| 13/32" | 0.4062" | 3-7/8"      | 5-1/4"        | 0346204                          | 6.36        | 7011564                        | 6.82        | 0345859                           | 7.82        | 7012121                               | 8.38        | 53077                 | 7.27        | 53742                                | 8.93        | 7004830                     | 6.46        | 7005398                        | 12.17       |
| 27/64" | 0.4219" | 3-15/16"    | 5-3/8"        | 0346205                          | 6.65        | 7011565                        | 7.13        | 0345860                           | 8.17        | 7012122                               | 8.76        | 53078                 | 7.60        | 53743                                | 9.34        | 7004831                     | 7.43        | 7005399                        | 13.38       |
| 7/16"  | 0.4375" | 4-1/16"     | 5-1/2"        | 0346206                          | 7.46        | 7011566                        | 8.00        | 0345861                           | 9.18        | 7012123                               | 9.84        | 53079                 | 8.53        | 53744                                | 10.49       | 7004832                     | 7.56        | 7005400                        | 13.61       |
| 29/64" | 0.4531" | 4-3/16"     | 5-5/8"        | 0346207                          | 8.21        | 7011567                        | 8.80        | 0345862                           | 10.15       | 7012124                               | 10.88       | 53080                 | 9.39        | 53745                                | 11.60       | 7004833                     | 8.69        | 7005401                        | 15.37       |
| 15/32" | 0.4688" | 4-5/16"     | 5-3/4"        | 0346208                          | 8.72        | 7011568                        | 9.35        | 0345863                           | 10.79       | 7012125                               | 11.56       | 53081                 | 9.97        | 53746                                | 12.33       | 7004834                     | 8.98        | 7005402                        | 16.13       |
| 31/64" | 0.4844" | 4-3/8"      | 5-7/8"        | 0346209                          | 8.97        | 7011569                        | 9.62        | 0345864                           | 11.10       | 7012126                               | 11.90       | 53082                 | 10.26       | 53747                                | 12.69       | 7004835                     | 9.65        | 7005403                        | 16.85       |
| 1/2"   | 0.5"    | 4-1/2"      | 6"            | 0346210                          | 9.25        | 7011570                        | 9.91        | 0345865                           | 11.40       | 7012127                               | 12.22       | 53083                 | 10.57       | 53748                                | 13.03       | 7004836                     | 9.56        | 7005404                        | 17.37       |
| #1     | 0.228"  | 2-5/8"      | 3-7/8"        | 0346211                          | 2.70        | 7011630                        | 2.89        | 0345866                           | 3.51        | 7012153                               | 3.76        | 0311183               | 3.08        | 53775                                | 4.01        | 7004837                     | 2.57        | 7005405                        | 4.50        |
| #2     | 0.221"  | 2-5/8"      | 3-7/8"        | 0346212                          | 2.52        | 7011629                        | 2.70        | 0345867                           | 3.51        | 7012154                               | 3.76        | 0311184               | 2.88        | 53776                                | 4.01        | 7004838                     | 2.57        | 7005406                        | 4.50        |
| #3     | 0.213"  | 2-1/2"      | 3-3/4"        | 0346213                          | 2.52        | 7011628                        | 2.70        | 0345868                           | 3.24        | 7012155                               | 3.47        | 0311185               | 2.88        | 53777                                | 3.70        | 7004839                     | 2.45        | 7005407                        | 4.24        |
| #4     | 0.209"  | 2-1/2"      | 3-3/4"        | 0346214                          | 2.52        | 7011627                        | 2.70        | 0345869                           | 3.24        | 7012156                               | 3.47        | 0311186               | 2.88        | 53778                                | 3.70        | 7004840                     | 2.45        | 7005408                        | 4.24        |
| #5     | 0.2055" | 2-1/2"      | 3-3/4"        | 0346215                          | 2.52        | 7011626                        | 2.70        | 0345870                           | 3.24        | 7012157                               | 3.47        | 0311187               | 2.88        | 53779                                | 3.70        | 7004841                     | 2.40        | 7005409                        | 4.24        |
| #6     | 0.204"  | 2-1/2"      | 3-3/4"        | 0346216                          | 2.52        | 7011625                        | 2.70        | 0345871                           | 3.24        | 7012158                               | 3.47        | 0311188               | 2.88        | 53780                                | 3.70        | 7004842                     | 2.40        | 7005410                        | 4.24        |
| #7     | 0.201"  | 2-7/16"     | 3-5/8"        | 0346217                          | 2.01        | 7011624                        | 2.16        | 0345872                           | 2.87        | 7012159                               | 3.08        | 0311189               | 2.30        | 53781                                | 3.28        | 7004843                     | 2.08        | 7005411                        | 3.86        |
| #8     | 0.199"  | 2-7/16"     | 3-5/8"        | 0346218                          | 2.04        | 7011623                        | 2.19        | 0345873                           | 2.87        | 7012160                               | 3.08        | 0311190               | 2.33        | 53782                                | 3.28        | 7004844                     | 2.08        | 7005412                        | 3.86        |
| #9     | 0.196"  | 2-7/16"     | 3-5/8"        | 0346219                          | 2.23        | 7011622                        | 2.39        | 0345874                           | 2.87        | 7012161                               | 3.08        | 0311191               | 2.55        | 53783                                | 3.28        | 7004845                     | 2.08        | 7005413                        | 3.86        |
| #10    | 0.1935" | 2-7/16"     | 3-5/8"        | 0346220                          | 2.09        | 7011621                        | 2.24        | 0345875                           | 2.81        | 7012162                               | 3.01        | 0311192               | 2.39        | 53784                                | 3.21        | 7004846                     | 2.08        | 7005414                        | 3.82        |
| #11    | 0.191"  | 2-5/16"     | 3-1/2"        | 0346221                          | 2.09        | 7011620                        | 2.24        | 0345876                           | 2.58        | 7012163                               | 2.77        | 0311193               | 2.39        | 53785                                | 2.95        | 7004847                     | 1.95        | 7005415                        | 3.71        |
| #12    | 0.189"  | 2-5/16"     | 3-1/2"        | 0346222                          | 2.09        | 7011619                        | 2.24        | 0345877                           | 2.58        | 7012164                               | 2.77        | 0311194               | 2.39        | 53786                                | 2.95        | 7004848                     | 1.97        | 7005416                        | 3.71        |
| #13    | 0.185"  | 2-5/16"     | 3-1/2"        | 0346223                          | 2.01        | 7011618                        | 2.16        | 0345878                           | 2.50        | 7012165                               | 2.68        | 0311195               | 2.30        | 53787                                | 2.86        | 7004849                     | 1.96        | 7005417                        | 3.60        |
| #14    | 0.182"  | 2-3/16"     | 3-3/8"        | 0346224                          | 2.01        | 7011617                        | 2.16        | 0345879                           | 2.50        | 7012166                               | 2.68        | 0311196               | 2.30        | 53788                                | 2.86        | 7004850                     | 1.96        | 7005418                        | 3.60        |
| #15    | 0.18"   | 2-3/16"     | 3-3/8"        | 0346225                          | 2.01        | 7011616                        | 2.16        | 0345880                           | 2.50        | 7012167                               | 2.68        | 0311197               | 2.30        | 53789                                | 2.86        | 7004851                     | 1.96        | 7005419                        | 3.60        |
| #16    | 0.177"  | 2-3/16"     | 3-3/8"        | 0346226                          | 1.90        | 7011615                        | 2.04        | 0345881                           | 2.50        | 7012168                               | 2.68        | 0311198               | 2.17        | 53790                                | 2.86        | 7004852                     | 1.94        | 7005420                        | 3.55        |
| #17    | 0.173"  | 2-3/16"     | 3-3/8"        | 0346227                          | 1.85        | 7011614                        | 1.98        | 0345882                           | 2.50        | 7012169                               | 2.68        | 0311199               | 2.11        | 53791                                | 2.86        | 7004853                     | 1.94        | 7005421                        | 3.55        |
| #18    | 0.1695" | 2-1/8"      | 3-1/4"        | 0346228                          | 1.77        | 7011613                        | 1.90        | 0345883                           | 2.17        | 7012170                               | 2.33        | 0311200               | 2.03        | 53792                                | 2.48        | 7004854                     | 1.67        | 7005422                        | 3.04        |
| #19    | 0.166"  | 2-1/8"      | 3-1/4"        | 0346229                          | 1.77        | 7011612                        | 1.90        | 0345884                           | 2.17        | 7012171                               | 2.33        | 0311201               | 2.03        | 53793                                | 2.48        | 7004855                     | 1.67        | 7005423                        | 3.04        |
| #20    | 0.161"  | 2-1/8"      | 3-1/4"        | 0346230                          | 1.77        | 7011611                        | 1.90        | 0345885                           | 2.17        | 7012172                               | 2.33        | 0311202               | 2.03        | 53794                                | 2.48        | 7004856                     | 1.60        | 7005424                        | 3.04        |
| #11    | 0.191"  | 2-5/16"     | 3-1/2"        | 0346231                          | 1.68        | 7011610                        | 1.80        | 0345886                           | 1.99        | 7012173                               | 2.14        | 0311203               | 1.91        | 53795                                | 2.28        | 7004857                     | 1.54        | 7005425                        | 2.90        |
| #22    | 0.157"  | 2"          | 3-1/8"        | 0346232                          | 1.68        | 7011609                        | 1.80        | 0345887                           | 1.99        | 7012174                               | 2.14        | 0311204               | 1.91        | 53796                                | 2.28        | 7004858                     | 1.53        | 7005426                        | 2.93        |
| #23    | 0.154"  | 2"          | 3-1/8"        | 0346233                          | 1.62        | 7011608                        | 1.74        | 0345888                           | 1.96        | 7012175                               | 2.10        | 0311205               | 1.85        | 53797                                | 2.24        | 7004859                     | 1.53        | 7005427                        | 2.74        |
| #24    | 0.152"  | 2"          | 3-1/8"        | 0346234                          | 1.62        | 7011607                        | 1.74        | 0345889                           | 1.96        | 7012176                               | 2.10        | 0311206               | 1.85        | 53798                                | 2.24        | 7004860                     | 1.53        | 7005428                        | 2.74        |
| #25    | 0.1495" | 1-7/8"      | 3"            | 0346235                          | 1.52        | 7011606                        | 1.63        | 0345890                           | 1.89        | 7012177                               | 2.03        | 0311207               | 1.74        | 53799                                | 2.16        | 7004861                     | 1.53        | 7005429                        | 2.74        |
| #26    | 0.147"  | 1-7/8"      | 3"            | 0346236                          | 1.52        | 7011605                        | 1.63        | 0345891                           | 1.89        | 7012178                               | 2.03        | 0311208               | 1.74        | 53800                                | 2.16        | 7004862                     | 1.53        | 7005430                        | 2.74        |
| #27    | 0.144"  | 1-7/8"      | 3"            | 0346237                          | 1.50        | 7011604                        | 1.61        | 0345892                           | 1.89        | 7012179                               | 2.03        | 0311209               | 1.72        | 53801                                | 2.16        | 7004863                     | 1.53        | 7005431                        | 2.74        |
| #28    | 0.1405" | 1-3/4"      | 2-7/8"        | 0346238                          | 1.39        | 7011603                        | 1.49        | 0345893                           | 1.69        | 7012180                               | 1.81        | 0311210               | 1.58        | 53802                                | 1.93        | 7004864                     | 1.38        | 7005432                        | 2.61        |
| #29    | 0.136"  | 1-3/4"      | 2-7/8"        | 0346239                          | 1.39        | 7011602                        | 1.49        | 0345894                           | 1.69        | 7012181                               | 1.81        | 0311211               | 1.58        | 53803                                | 1.93        | 7004865                     | 1.38        | 7005433                        | 2.61        |
| #30    | 0.1285" | 1-5/8"      | 2-3/4"        | 0346240                          | 1.39        | 7011601                        | 1.49        | 0345895                           | 1.69        | 7012182                               | 1.81        | 0311212               | 1.58        | 53804                                | 1.93        | 7004866                     | 1.34        | 7005434                        | 2.61        |
| #31    | 0.12"   | 1-5/8"      | 2-3/4"        | 0346241                          | 1.28        | 7011600                        | 1.37        | 0345896                           | 1.69        | 7012183                               | 1.81        | 0311213               | 1.46        | 53805                                | 1.93        | 7004867                     | 1.34        | 7005435                        | 2.61        |
| #32    | 0.116"  | 1-5/8"      | 2-3/4"        | 0346242                          | 1.28        | 7011599                        | 1.37        | 0345897                           | 1.69        | 7012184                               | 1.81        | 0311214               | 1.46        | 53806                                | 1.93        | 7004868                     | 1.34        | 7005436                        | 2.60        |
| #33    | 0.113"  | 1-1/2"      | 2-5/8"        | 0346243                          | 1.28        | 7011598                        | 1.37        | 0345898                           | 1.69        | 7012185                               | 1.81        | 0311215               | 1.46        | 53807                                | 1.93        | 7004869                     | 1.34        | 7005437                        | 2.60        |
| #34    | 0.111"  | 1-1/2"      | 2-5/8"        | 0346244                          | 1.28        | 7011597                        | 1.37        | 0345899                           | 1.69        | 7012186                               | 1.81        | 0311216               | 1.46        | 53808                                | 1.93        | 7004870                     | 1.34        | 7005438                        | 2.60        |
| #35    | 0.11"   | 1-1/2"      | 2-5/8"        | 0346245                          | 1.28        | 7011596                        | 1.37        | 0345900                           | 1.69        | 7012187                               | 1.81        | 0311217               | 1.46        | 53809                                | 1.93        | 7004871                     | 1.34        | 7005439                        | 2.61        |
| #36    | 0.1065" | 1-7/16"     | 2-1/2"        | 0346246                          | 1.26        | 7011595                        | 1.35        | 0345901                           | 1.69        | 7012188                               | 1.81        | 0311218               | 1.44        | 53810                                | 1.93        | 7004872                     | 1.34        | 7005440                        | 2.61        |
| #37    | 0.104"  | 1-7/16"     | 2-1/2"        | 0346247                          | 1.26        | 7011594                        | 1.35        | 0345902                           | 1.69        | 7012189                               | 1.81        | 0311219               | 1.44        | 53811                                | 1.93        | 7004873                     | 1.34        | 7005441                        | 2.61        |
| #38    | 0.1015" | 1-7/16"     | 2-1/2"        | 0346248                          | 1.26        | 7011593                        | 1.35        | 0345903                           | 1.69        | 7012190                               | 1.81        | 0311220               | 1.44        | 53812                                | 1.93        | 7004874                     | 1.34        | 7005442                        | 2.61        |
| #39    | 0.0995" | 1-3/8"      | 2-3/8"        | 0346249                          | 1.22        | 7011592                        | 1.31        | 0345904                           | 1.69        | 7012191                               | 1.81        | 0311221               | 1.40        | 53813                                | 1.93        | 7004875                     | 1.34        | 7005443                        | 2.52        |
| #40    | 0.098"  | 1-3/8"      | 2-3/8"        | 0346250                          | 1.22        | 7011591                        | 1.31        | 0345905                           | 1.69        | 7012192                               | 1.81        | 0311222               | 1.40        | 53813                                | 1.93        | 7004876                     | 1.34        | 7005444                        | 2.51        |
| #41    | 0.096"  | 1-3/8"      | 2-3/8"        | 0346251                          | 1.21        | 7011590                        | 1.30        | 0345906                           | 1.69        | 7012193                               | 1.81        | 0311223               | 1.39        | 53815                                | 1.93        | 7004877                     | 1.34        | 7005445                        | 2.51        |
| #42    | 0.0935" | 1-1/4"      | 2-1/4"        | 0346252                          | 1.20        | 7011589                        | 1.29        | 0345907                           | 1.69        | 7012194                               | 1.81        | 0311224               | 1.38        | 53816                                | 1.93        | 7004878                     | 1.34        | 7005446                        | 2.51        |
| #43    | 0.089"  | 1-1/4"      | 2-1/4"        | 0346253                          | 1.20        | 7011588                        | 1.29        | 0345908                           | 1.69        | 7012195                               | 1.52        | 0311225               | 1.38        | 7004879                              | 1.34        | 7005447                     | 2.44        | 53817                          | 1.93        |
| #44    | 0.086"  | 1-1/8"      | 2-1/8"        | 0346254                          | 1.20        |                                |             |                                   |             |                                       |             |                       |             |                                      |             |                             |             |                                |             |

# HSS DRILL BITS

## HSS Drill Bits Cont.

Cutting Tools



| Size   | Decimal | Flute Lgth. | Overall Lgth. | Fastenal 135° S/P HD Black Oxide |             | CleLine 1801 135° S/P HD Black |             | Fastenal 135° S/P HD Black & Gold |             | CleLine 1878 135° S/P HD Black & Gold |             | Norseman 190 HD Black |             | Norseman 190 AG Magnum Super Premium |             | C/L 150ASP 135° S/P HD Black |             | C/L 150ASP-TN 135° S/P TIN Coat |             |
|--------|---------|-------------|---------------|----------------------------------|-------------|--------------------------------|-------------|-----------------------------------|-------------|---------------------------------------|-------------|-----------------------|-------------|--------------------------------------|-------------|------------------------------|-------------|---------------------------------|-------------|
|        |         |             |               | Part No.                         | Price /Each | Part No.                       | Price /Each | Part No.                          | Price /Each | Part No.                              | Price /Each | Part No.              | Price /Each | Part No.                             | Price /Each | Part No.                     | Price /Each | Part No.                        | Price /Each |
| #57    | 0.043"  | 3/8"        | 1-3/4"        | 0346267                          | \$1.20      | 7011574                        | \$1.57      | 0345922                           | \$1.69      | 7012209                               | \$1.33      | 53831                 | \$1.93      |                                      |             | 7004784                      | \$1.33      | 0355241                         | \$1.91      |
| #58    | 0.042"  | 11/16"      | 1-5/8"        | 0346268                          | 1.20        | 7011573                        | 1.57        | 0345923                           | 1.69        | 7012210                               | 1.33        | 53832                 | 1.93        |                                      |             | 7004785                      | 1.33        | 0355242                         | 1.91        |
| #59    | 0.041"  | 11/16"      | 1-5/8"        | 0346269                          | 1.20        | 7011572                        | 1.57        | 0345924                           | 1.69        | 7012211                               | 1.33        | 53833                 | 1.93        |                                      |             | 7004786                      | 1.33        | 0355243                         | 1.91        |
| #60    | 0.04"   | 11/16"      | 1-5/8"        | 0346270                          | 1.20        | 7011571                        | 1.57        | 0345925                           | 1.69        | 7012212                               | 1.33        | 53834                 | 1.93        |                                      |             | 7004787                      | 1.33        | 0355244                         | 1.91        |
| #61    | 0.039"  | 11/16"      | 1-5/8"        |                                  |             |                                |             |                                   |             |                                       |             |                       |             |                                      |             | 7004788                      | 1.33        | 0355245                         | 1.91        |
| #62    | 0.038"  | 5/8"        | 1-1/2"        |                                  |             |                                |             |                                   |             |                                       |             |                       |             |                                      |             | 7004789                      | 1.37        | 0355408                         | 1.91        |
| #63    | 0.037"  | 5/8"        | 1-1/2"        |                                  |             |                                |             |                                   |             |                                       |             |                       |             |                                      |             | 7004790                      | 1.37        | 0355409                         | 1.91        |
| #64    | 0.036"  | 5/8"        | 1-1/2"        |                                  |             |                                |             |                                   |             |                                       |             |                       |             |                                      |             | 7004791                      | 1.37        | 0355410                         | 1.91        |
| #65    | 0.035"  | 5/8"        | 1-1/2"        |                                  |             |                                |             |                                   |             |                                       |             |                       |             |                                      |             | 7004792                      | 1.37        | 0355411                         | 1.91        |
| #66    | 0.033"  | 1/2"        | 1-3/8"        |                                  |             |                                |             |                                   |             |                                       |             |                       |             |                                      |             | 7004793                      | 1.37        | 0355412                         | 1.91        |
| #67    | 0.032"  | 1/2"        | 1-3/8"        |                                  |             |                                |             |                                   |             |                                       |             |                       |             |                                      |             | 7004794                      | 1.37        | 0355413                         | 1.91        |
| #68    | 0.031"  | 1/2"        | 1-3/8"        |                                  |             |                                |             |                                   |             |                                       |             |                       |             |                                      |             | 7004795                      | 1.37        | 0355414                         | 1.96        |
| #69    | 0.0292" | 1/2"        | 1-3/8"        |                                  |             |                                |             |                                   |             |                                       |             |                       |             |                                      |             | 7004796                      | 1.42        | 0355415                         | 2.08        |
| #70    | 0.028"  | 3/8"        | 1-1/4"        |                                  |             |                                |             |                                   |             |                                       |             |                       |             |                                      |             | 7004797                      | 1.42        | 0355416                         | 2.08        |
| #71    | 0.026"  | 3/8"        | 1-1/4"        |                                  |             |                                |             |                                   |             |                                       |             |                       |             |                                      |             | 7004798                      | 1.78        | 0355417                         | 2.29        |
| #72    | 0.025"  | 5/16"       | 1-1/8"        |                                  |             |                                |             |                                   |             |                                       |             |                       |             |                                      |             | 7004799                      | 1.78        | 0355418                         | 2.29        |
| #73    | 0.024"  | 1/4"        | 1"            |                                  |             |                                |             |                                   |             |                                       |             |                       |             |                                      |             | 7004800                      | 1.78        | 0355419                         | 2.29        |
| #74    | 0.0225" | 1/4"        | 1"            |                                  |             |                                |             |                                   |             |                                       |             |                       |             |                                      |             | 7004801                      | 1.78        | 0355420                         | 2.29        |
| #75    | 0.021"  | 1/4"        | 1"            |                                  |             |                                |             |                                   |             |                                       |             |                       |             |                                      |             | 7004802                      | 1.78        | 0355421                         | 2.29        |
| #76    | 0.02"   | 3/16"       | 7/8"          |                                  |             |                                |             |                                   |             |                                       |             |                       |             |                                      |             | 7004803                      | 1.78        | 0355422                         | 2.29        |
| #77    | 0.018"  | 3/16"       | 7/8"          |                                  |             |                                |             |                                   |             |                                       |             |                       |             |                                      |             | 7004804                      | 2.07        | 0355423                         | 2.51        |
| #78    | 0.016"  | 3/16"       | 7/8"          |                                  |             |                                |             |                                   |             |                                       |             |                       |             |                                      |             | 7004805                      | 2.07        | 0355424                         | 2.51        |
| #79    | 0.0145" | 1/8"        | 3/4"          |                                  |             |                                |             |                                   |             |                                       |             |                       |             |                                      |             | 7004806                      | 2.28        | 0355425                         | 2.69        |
| #80    | 0.0135" | 1/8"        | 3/4"          |                                  |             |                                |             |                                   |             |                                       |             |                       |             |                                      |             | 7004807                      | 2.28        | 0355426                         | 2.69        |
| Ltr A  | 0.234"  | 2-5/8"      | 3-7/8"        | 0346271                          | \$2.64      | 7011517                        | \$2.83      | 0345926                           | \$3.79      | 7012128                               | \$4.07      | 0311235               | \$3.01      | 53749                                | \$4.34      | 7004889                      | 3.01        | 7005457                         | 5.20        |
| Ltr B  | 0.238"  | 2-3/4"      | 4"            | 0346272                          | 2.64        | 7011518                        | 2.83        | 0345927                           | 3.79        | 7012129                               | 4.07        | 0311236               | 3.01        | 53750                                | 4.34        | 7004890                      | 3.01        | 7005458                         | 5.20        |
| Ltr C  | 0.242"  | 2-3/4"      | 4"            | 0346273                          | 2.50        | 7011519                        | 2.68        | 0345928                           | 3.79        | 7012130                               | 4.07        | 0311237               | 2.86        | 53751                                | 4.34        | 7004891                      | 3.03        | 7005459                         | 5.36        |
| Ltr D  | 0.246"  | 2-3/4"      | 4"            | 0346274                          | 2.50        | 7011520                        | 2.68        | 0345929                           | 3.67        | 7012131                               | 3.94        | 0311238               | 2.86        | 53752                                | 4.20        | 7004892                      | 3.03        | 7005460                         | 5.36        |
| 1/4"-E | 0.25"   | 2-3/4"      | 4"            | 0346275                          | 2.50        |                                |             | 0345930                           | 3.04        |                                       |             | 0311239               | 2.86        | 53753                                | 3.47        |                              |             |                                 |             |
| Ltr F  | 0.257"  | 2-7/8"      | 4-1/8"        | 0346276                          | 2.85        | 7011521                        | 3.06        | 0345931                           | 4.09        | 7012132                               | 4.38        | 0311240               | 3.26        | 53754                                | 4.67        | 7004893                      | 3.26        | 7005462                         | 6.08        |
| Ltr G  | 0.261"  | 2-7/8"      | 4-1/8"        | 0346277                          | 2.95        | 7011522                        | 3.16        | 0345932                           | 4.42        | 7012133                               | 4.74        | 0311241               | 3.37        | 53755                                | 5.05        | 7004894                      | 3.42        | 7005463                         | 6.47        |
| Ltr H  | 0.266"  | 2-7/8"      | 4-1/8"        | 0346278                          | 3.04        | 7011523                        | 3.26        | 0345933                           | 4.54        | 7012134                               | 4.87        | 0311242               | 3.48        | 53756                                | 5.19        | 7004895                      | 3.62        | 7005464                         | 6.83        |
| Ltr I  | 0.272"  | 2-7/8"      | 4-1/8"        | 0346279                          | 3.04        | 7011524                        | 3.26        | 0345934                           | 4.54        | 7012135                               | 4.87        | 0311243               | 3.48        | 53757                                | 5.19        | 7004896                      | 3.62        | 7005465                         | 6.91        |
| Ltr J  | 0.277"  | 2-7/8"      | 4-1/8"        | 0346280                          | 3.60        | 7011525                        | 3.86        | 0345935                           | 4.77        | 7012136                               | 5.11        | 0311244               | 4.12        | 53758                                | 5.45        | 7004897                      | 3.71        | 7005466                         | 6.98        |
| Ltr K  | 0.281"  | 2-15/16"    | 4-1/4"        | 0346281                          | 3.60        | 7011526                        | 3.86        | 0345936                           | 5.33        | 7012137                               | 5.72        | 0311245               | 4.12        | 53759                                | 6.10        | 7004898                      | 4.00        | 7005467                         | 7.72        |
| Ltr L  | 0.29"   | 2-15/16"    | 4-1/4"        | 0346282                          | 4.12        | 7011527                        | 4.42        | 0345937                           | 5.17        | 7012138                               | 5.54        | 0311246               | 4.71        | 53759                                | 6.10        | 7004899                      | 4.05        | 7005468                         | 7.86        |
| Ltr M  | 0.295"  | 3-1/16"     | 4-3/8"        | 0346283                          | 4.35        | 7011528                        | 4.66        | 0345938                           | 5.66        | 7012139                               | 6.07        | 0311247               | 4.97        | 53761                                | 6.47        | 7004900                      | 4.41        | 7005469                         | 8.47        |
| Ltr N  | 0.302"  | 3-1/16"     | 4-3/8"        | 0346284                          | 4.35        | 7011529                        | 4.66        | 0345939                           | 5.66        | 7012140                               | 6.07        | 0311248               | 4.97        | 53762                                | 6.47        | 7004901                      | 4.45        | 7005470                         | 8.52        |
| Ltr O  | 0.316"  | 3-3/16"     | 4-1/2"        | 0346285                          | 4.35        | 7011530                        | 4.66        | 0345940                           | 5.66        | 7012141                               | 6.07        | 0311249               | 4.97        | 53763                                | 6.47        | 7004902                      | 4.50        | 7005471                         | 8.82        |
| Ltr P  | 0.323"  | 3-5/16"     | 4-5/8"        | 0346286                          | 4.55        | 7011531                        | 4.88        | 0345941                           | 6.34        | 7012142                               | 6.80        | 0311250               | 5.20        | 53764                                | 7.25        | 7004903                      | 4.97        | 7005472                         | 9.21        |
| Ltr Q  | 0.332"  | 3-7/16"     | 4-3/4"        | 0346287                          | 4.55        | 7011532                        | 4.88        | 0345942                           | 6.50        | 7012143                               | 6.97        | 0311251               | 5.20        | 53765                                | 7.43        | 7004904                      | 5.04        | 7005473                         | 9.43        |
| Ltr R  | 0.339"  | 3-7/16"     | 4-3/4"        | 0346288                          | 4.55        | 7011533                        | 4.88        | 0345943                           | 6.80        | 7012144                               | 7.29        | 0311252               | 5.20        | 53766                                | 7.77        | 7004905                      | 5.31        | 7005474                         | 10.39       |
| Ltr S  | 0.348"  | 3-1/2"      | 4-7/8"        | 0346289                          | 5.31        | 7011534                        | 5.69        | 0345944                           | 7.35        | 7012145                               | 7.88        | 0311253               | 6.06        | 53767                                | 8.40        | 7004906                      | 5.72        | 7005475                         | 10.83       |
| Ltr T  | 0.358"  | 3-1/2"      | 4-7/8"        | 0346290                          | 5.31        | 7011535                        | 5.69        | 0345945                           | 8.25        | 7012146                               | 8.84        | 0311254               | 6.06        | 53768                                | 9.43        | 7004907                      | 6.40        | 7005476                         | 10.94       |
| Ltr U  | 0.368"  | 3-5/8"      | 5"            | 0346291                          | 5.72        | 7011536                        | 6.13        | 0345946                           | 8.25        | 7012147                               | 8.84        | 0311255               | 6.54        | 53769                                | 9.43        | 7004908                      | 6.41        | 7005477                         | 11.31       |
| Ltr V  | 0.377"  | 3-5/8"      | 5"            | 0346292                          | 5.72        | 7011537                        | 6.13        | 0345947                           | 8.43        | 7012148                               | 9.04        | 0311256               | 6.54        | 53770                                | 9.64        | 7004909                      | 6.59        | 7005478                         | 12.41       |
| Ltr W  | 0.386"  | 3-3/4"      | 5-1/8"        | 0346293                          | 6.15        | 7011538                        | 6.59        | 0345948                           | 8.80        | 7012149                               | 9.43        | 0311257               | 7.03        | 53771                                | 10.06       | 7004910                      | 6.84        | 7005479                         | 12.01       |
| Ltr X  | 0.397"  | 3-3/4"      | 5-1/8"        | 0346294                          | 7.24        | 7011539                        | 7.76        | 0345949                           | 10.50       | 7012150                               | 11.25       | 0311258               | 8.28        | 53772                                | 12.00       | 7004911                      | 8.46        | 7005480                         | 14.85       |
| Ltr Y  | 0.404"  | 3-7/8"      | 5-1/4"        | 0346295                          | 7.74        | 7011540                        | 8.30        | 0345950                           | 12.33       | 7012151                               | 13.21       | 0311259               | 8.85        | 53773                                | 14.09       | 7004912                      | 9.78        | 7005481                         | 16.77       |
| Ltr Z  | 0.413"  | 3-7/8"      | 5-1/4"        | 0346296                          | 8.38        | 7011541                        | 8.98        | 0345951                           | 12.60       | 7012152                               | 13.50       | 0311260               | 9.57        | 53774                                | 14.40       | 7004913                      | 10.01       | 7005482                         | 17.28       |

# 135° COBALT DRILL BITS

## Cobalt Drill Bits

### Cobalt Jobber Length Drills

- Cle-line 1802 drill bits are 135° split point for faster and easier penetration
- These drill bits are made from premium 8% cobalt HSS.
- The straw finish adds lubricity.
- Chicago-Latrobe 550 drill bits are 135° split point for faster and easier penetration
- These drill bits are made from premium 8% cobalt HSS.
- The straw finish adds lubricity.
- These drill bits are manufactured to NAS 907 Type J specifications.
- Chicago-Latrobe 2550 drill bits are 135° split point for faster and easier penetration
- These drill bits are made from premium 8% cobalt HSS.
- The straw finish adds lubricity.
- These drill bits are manufactured to NAS 907 Type J specifications.
- The Titanium Nitride (TiN) coating adds lubricity and hardness, enhancing chip flow and drill life.
- Chicago-Latrobe 550TA drill bits are 135° split point for faster and easier penetration
- These drill bits are made from premium 8% cobalt HSS.
- The straw finish adds lubricity.
- These drill bits are manufactured to NAS 907 Type J specifications.
- The Titanium Aluminum Nitride (TiAlN) coating combines the ability to work in high temperatures with added hardness to increase drill life.



Cutting Tools



| Size   | Decimal   | Flute Lgth. | Overall Lgth. | Fastenal Premium Cobalt Gold |             | CleLine 1802 135° S/P Cobalt |             | Norseman 150 Cobalt Gold Finish |             | C/L 550 135° S/P Cobalt |             | C/L 2550 135° S/P Cobalt TiN |             | C/L 550-TA 135° S/P Cobalt TiAlN |             |
|--------|-----------|-------------|---------------|------------------------------|-------------|------------------------------|-------------|---------------------------------|-------------|-------------------------|-------------|------------------------------|-------------|----------------------------------|-------------|
|        |           |             |               | Part No.                     | Price /Each | Part No.                     | Price /Each | Part No.                        | Price /Each | Part No.                | Price /Each | Part No.                     | Price /Each | Part No.                         | Price /Each |
| 1/64"  | 0.015625" | 3/16"       | 3/4"          |                              |             |                              |             |                                 |             | 7005068                 | \$3.42      |                              |             |                                  |             |
| 1/32"  | 0.03125"  | 1/2"        | 1-3/8"        |                              |             |                              |             |                                 |             | 7005069                 | 2.45        |                              |             | 0355431                          | \$3.14      |
| 3/64"  | 0.0469"   | 3/8"        | 1-3/4"        |                              |             |                              |             | 53585                           | \$2.17      | 7005070                 | 1.94        |                              |             | 0355432                          | 3.00        |
| 1/16"  | 0.0625"   | 7/8"        | 1-7/8"        | 0315989                      | \$1.82      | 7011657                      | \$1.95:     | 53569                           | 2.08        | 7005071                 | 1.79        | 7006451                      | \$3.27      | 0355433                          | 2.80        |
| 5/64"  | 0.0781"   | 1"          | 2"            | 0315990                      | 1.82        | 7011658                      | 1.95:       | 53586                           | 2.08        | 7005072                 | 1.79        | 0355831                      | 2.36        | 0355434                          | 2.85        |
| 3/32"  | 0.0938"   | 1-1/4"      | 2-1/4"        | 0315991                      | 1.82        | 7011659                      | 1.95:       | 53570                           | 2.08        | 7005073                 | 1.83        | 0355832                      | 2.43        | 0355435                          | 2.88        |
| 7/64"  | 0.1094"   | 1-1/2"      | 2-5/8"        | 0315992                      | 1.92        | 7011660                      | 2.06:       | 53571                           | 2.20        | 7005074                 | 1.97        | 0355833                      | 2.57        | 0355436                          | 3.01        |
| 1/8"   | 0.125"    | 1-5/8"      | 2-3/4"        | 0315993                      | 2.32        | 7011661                      | 2.49:       | 53572                           | 2.65        | 7005075                 | 2.28        | 7006455                      | 3.94        | 0355437                          | 3.12        |
| 9/64"  | 0.1406"   | 1-3/4"      | 2-7/8"        | 0315994                      | 2.41        | 7011662                      | 2.59:       | 53598                           | 2.76        | 7005076                 | 2.39        | 7006459                      | 4.23        | 0355438                          | 3.43        |
| 5/32"  | 0.1562"   | 2"          | 3-1/8"        | 0315995                      | 2.67        | 7011663                      | 2.86:       | 53573                           | 3.05        | 7005077                 | 2.64        | 7006465                      | 4.30        | 0355439                          | 3.53        |
| 11/64" | 0.1719"   | 2-1/8"      | 3-1/4"        | 0315996                      | 2.74        | 7011664                      | 2.94:       | 53587                           | 3.14        | 7005078                 | 2.82        | 7006471                      | 5.20        | 0355440                          | 4.10        |
| 3/16"  | 0.1875"   | 2-5/16"     | 3-1/2"        | 0315997                      | 3.09        | 7011665                      | 3.31:       | 53574                           | 3.53        | 7005079                 | 3.15        | 7006477                      | 5.65        | 0355441                          | 4.67        |
| 13/64" | 0.2031"   | 2-7/16"     | 3-5/8"        | 0315998                      | 3.89        | 7011666                      | 4.17:       | 53588                           | 4.45        | 7005080                 | 3.49        | 7006484                      | 6.60        | 0355442                          | 5.38        |
| 7/32"  | 0.2188"   | 2-1/2"      | 3-3/4"        | 0315999                      | 4.25        | 7011667                      | 4.56:       | 53575                           | 4.86        | 7005081                 | 3.78        | 7006489                      | 6.91        | 0355443                          | 5.66        |
| 15/64" | 0.2344"   | 2-5/8"      | 3-7/8"        | 0316000                      | 4.58        | 7011668                      | 4.91:       | 53589                           | 5.23        | 7005082                 | 4.05        | 7006492                      | 7.56        | 0355444                          | 5.92        |
| 1/4"-E | 0.25"     | 2-3/4"      | 4"            | 0316001                      | 4.82        | 7011669                      | 5.17:       | 53576                           | 5.51        | 7005083                 | 4.35        | 7006493                      | 7.78        | 0355445                          | 6.22        |
| 17/64" | 0.2656"   | 2-7/8"      | 4-1/8"        | 0316002                      | 5.73        | 7011670                      | 6.14:       | 53590                           | 6.55        | 7005084                 | 4.93        | 7006494                      | 9.83        | 0355446                          | 8.29        |
| 9/32"  | 0.2812"   | 2-15/16"    | 4-1/4"        | 0316003                      | 6.00        | 7011671                      | 6.43:       | 53577                           | 6.86        | 7005085                 | 5.48        | 7006495                      | 10.10       | 0355447                          | 8.45        |
| 19/64" | 0.2969"   | 3-1/16"     | 4-3/8"        | 0316004                      | 7.14        | 7011672                      | 7.65:       | 53591                           | 8.16        | 7005086                 | 6.39        | 7006496                      | 12.02       | 0355448                          | 9.60        |
| 5/16"  | 0.3125"   | 3-3/16"     | 4-1/2"        | 0316005                      | 7.69        | 7011673                      | 8.24:       | 53578                           | 8.79        | 7005087                 | 6.75        | 7006497                      | 12.92       | 0355449                          | 10.64       |
| 21/64" | 0.3281"   | 3-5/16"     | 4-5/8"        | 0316006                      | 8.50        | 7011674                      | 9.11:       | 53592                           | 9.71        | 7005088                 | 7.67        | 7006498                      | 14.85       | 0355450                          | 11.92       |
| 11/32" | 0.3438"   | 3-7/16"     | 4-3/4"        | 0316007                      | 9.35        | 7011675                      | 10.02:      | 53579                           | 10.69       | 7005089                 | 8.33        | 7006499                      | 15.57       | 0355451                          | 12.56       |
| 23/64" | 0.3594"   | 3-1/2"      | 4-7/8"        | 0316008                      | 10.96       | 7011676                      | 11.75:      | 53593                           | 12.53       | 7005090                 | 9.50        | 7006500                      | 16.54       | 0355452                          | 13.35       |
| 3/8"   | 0.375"    | 3-5/8"      | 5"            | 0316009                      | 11.19       | 7011677                      | 11.99:      | 53580                           | 12.78       | 7005091                 | 9.80        | 7006501                      | 16.70       | 0355453                          | 13.41       |
| 25/64" | 0.3906"   | 3-3/4"      | 5-1/8"        | 0316010                      | 12.72       | 7011678                      | 13.63:      | 53594                           | 14.54       | 7005092                 | 11.03       | 7006502                      | 19.37       | 0355454                          | 16.19       |
| 13/32" | 0.4062"   | 3-7/8"      | 5-1/4"        | 0316011                      | 13.40       | 7011679                      | 14.36:      | 53581                           | 15.31       | 7005093                 | 11.47       | 7006503                      | 20.25       | 0355455                          | 16.62       |
| 27/64" | 0.4219"   | 3-15/16"    | 5-3/8"        | 0316012                      | 14.40       | 7011680                      | 15.43:      | 53595                           | 16.46       | 7005094                 | 12.53       | 7006504                      | 21.44       | 0355456                          | 17.61       |
| 7/16"  | 0.4375"   | 4-1/16"     | 5-1/2"        | 0316013                      | 14.90       | 7011681                      | 15.97:      | 53582                           | 17.03       | 7005095                 | 13.16       | 7006505                      | 21.80       | 0355457                          | 17.93       |
| 29/64" | 0.4531"   | 4-3/16"     | 5-5/8"        | 0316014                      | 18.32       | 7011682                      | 19.63:      | 53596                           | 20.94       | 7005096                 | 15.28       | 7006506                      | 24.71       | 0355458                          | 20.16       |
| 15/32" | 0.4688"   | 4-5/16"     | 5-3/4"        | 0316015                      | 18.59       | 7011683                      | 19.92:      | 53583                           | 21.25       | 7005097                 | 15.50       | 7006507                      | 25.09       | 0355459                          | 20.37       |
| 31/64" | 0.4844"   | 4-3/8"      | 5-7/8"        | 0316016                      | 19.18       | 7011684                      | 20.55:      | 53597                           | 21.92       | 7005098                 | 16.44       | 7006508                      | 25.67       | 0355460                          | 20.73       |
| 1/2"   | 0.5"      | 4-1/2"      | 6"            | 0316017                      | 19.44       | 7011685                      | 20.83:      | 53584                           | 22.21       | 7005099                 | 17.27       | 7006509                      | 25.94       | 0355461                          | 20.78       |
| 33/64" | 0.5156"   | 4-13/16"    | 6-5/8"        |                              |             |                              |             |                                 |             | 7005205                 | 36.35       | 0355859                      | 36.28       | 0355462                          | 41.15       |
| 17/32" | 0.5312"   | 4-13/16"    | 6-5/8"        |                              |             |                              |             |                                 |             | 7005206                 | 36.72       | 0355860                      | 38.58       | 0355463                          | 41.95       |
| 35/64" | 0.5469"   | 4-13/16"    | 6-5/8"        |                              |             |                              |             |                                 |             | 7005207                 | 39.33       | 0355861                      | 40.08       | 0355464                          | 46.71       |
| 9/16"  | 0.5625"   | 4-13/16"    | 6-5/8"        |                              |             |                              |             |                                 |             | 7005208                 | 39.52       | 0355862                      | 40.53       | 0355465                          | 47.28       |
| 37/64" | 0.5781"   | 4-13/16"    | 6-5/8"        |                              |             |                              |             |                                 |             | 7005209                 | 40.82       | 0355863                      | 42.08       | 0355466                          | 50.49       |
| 19/32" | 0.5938"   | 5-3/16"     | 7-1/8"        |                              |             |                              |             |                                 |             | 7005210                 | 41.00       | 0355864                      | 42.90       | 0355467                          | 50.93       |
| 39/64" | 0.6094"   | 5-3/16"     | 7-1/8"        |                              |             |                              |             |                                 |             | 7005211                 | 42.31       | 0355865                      | 46.59       | 0355468                          | 51.60       |
| 5/8"   | 0.625"    | 5-3/16"     | 7-1/8"        |                              |             |                              |             |                                 |             | 7005212                 | 42.67       | 0355866                      | 44.59       | 0355469                          | 52.66       |
| 41/64" | 0.6406"   | 5-3/16"     | 7-1/8"        |                              |             |                              |             |                                 |             | 7005213                 | 47.72       |                              |             |                                  |             |
| 21/32" | 0.6562"   | 5-3/16"     | 7-1/8"        |                              |             |                              |             |                                 |             | 7005214                 | 51.20       |                              |             |                                  |             |
| 43/64" | 0.6719"   | 5-3/16"     | 7-1/8"        |                              |             |                              |             |                                 |             | 7005215                 | 53.81       |                              |             |                                  |             |
| 11/16" | 0.6875"   | 5-3/16"     | 7-1/8"        |                              |             |                              |             |                                 |             | 7005216                 | 54.91       |                              |             |                                  |             |

# COBALT DRILL BITS

## Cobalt Drill Bits Cont.



Cutting Tools

| Size | Decimal | Flute Lgth. | Overall Lgth. | Fastenal Premium Cobalt Gold |             | CleLine 1802 135° S/P Cobalt |             | Norseman 150 Cobalt Gold Finish |             | C/L 550 135° S/P Cobalt |             | C/L 2550 135° S/P Cobalt TiN |             | C/L 550-TA 135° S/P Cobalt TiAlN |             |
|------|---------|-------------|---------------|------------------------------|-------------|------------------------------|-------------|---------------------------------|-------------|-------------------------|-------------|------------------------------|-------------|----------------------------------|-------------|
|      |         |             |               | Part No.                     | Price /Each | Part No.                     | Price /Each | Part No.                        | Price /Each | Part No.                | Price /Each | Part No.                     | Price /Each | Part No.                         | Price /Each |
| #1   | 0.228"  | 2-5/8"      | 3-7/8"        | 0316044                      | \$5.03      | 7011745                      | \$5.39      | 0310832                         | \$5.75      | 7005100                 | \$4.52      | 7006491                      | \$8.82      | 0355598                          | \$7.24      |
| #2   | 0.221"  | 2-5/8"      | 3-7/8"        | 0316045                      | 5.03        | 7011744                      | 5.39        | 0310833                         | 5.75        | 7005101                 | 4.52        | 7006490                      | 8.82        | 0355599                          | 7.24        |
| #3   | 0.213"  | 2-1/2"      | 3-3/4"        | 0316046                      | 4.50        | 7011743                      | 4.82        | 0310834                         | 5.14        | 7005102                 | 4.30        | 7006488                      | 8.39        | 0355600                          | 6.92        |
| #4   | 0.209"  | 2-1/2"      | 3-3/4"        | 0316047                      | 4.70        | 7011742                      | 5.04        | 0310835                         | 5.38        | 7005103                 | 4.30        | 7006487                      | 8.39        | 0355601                          | 6.92        |
| #5   | 0.2055" | 2-1/2"      | 3-3/4"        | 0316048                      | 4.70        | 7011741                      | 5.04        | 0310836                         | 5.38        | 7005104                 | 4.30        | 7006486                      | 8.39        | 0355602                          | 6.92        |
| #6   | 0.204"  | 2-1/2"      | 3-3/4"        | 0316049                      | 4.70        | 7011740                      | 5.04        | 0310837                         | 5.38        | 7005105                 | 4.30        | 7006485                      | 8.39        | 0355603                          | 6.92        |
| #7   | 0.201"  | 2-7/16"     | 3-5/8"        | 0316050                      | 3.62        | 7011739                      | 3.88        | 0310838                         | 4.14        | 7005106                 | 3.56        | 7006483                      | 6.53        | 0355604                          | 5.49        |
| #8   | 0.199"  | 2-7/16"     | 3-5/8"        | 0316051                      | 3.67        | 7011738                      | 3.94        | 0310839                         | 4.20        | 7005107                 | 3.56        | 7006482                      | 6.53        | 0355605                          | 5.49        |
| #9   | 0.196"  | 2-7/16"     | 3-5/8"        | 0316052                      | 3.67        | 7011737                      | 3.94        | 0310840                         | 4.20        | 7005108                 | 3.56        | 7006481                      | 6.53        | 0355606                          | 5.49        |
| #10  | 0.1935" | 2-7/16"     | 3-5/8"        | 0316053                      | 3.67        | 7011736                      | 3.94        | 0310841                         | 4.20        | 7005109                 | 3.42        | 7006480                      | 6.46        | 0355607                          | 5.38        |
| #11  | 0.191"  | 2-5/16"     | 3-1/2"        | 0316054                      | 3.95        | 7011735                      | 4.24        | 0310842                         | 4.52        | 7005110                 | 3.42        | 7006479                      | 6.46        | 0355608                          | 5.38        |
| #12  | 0.189"  | 2-5/16"     | 3-1/2"        | 0316055                      | 3.86        | 7011734                      | 4.14        | 0310843                         | 4.42        | 7005111                 | 3.42        | 7006478                      | 6.46        | 0355609                          | 5.38        |
| #13  | 0.185"  | 2-5/16"     | 3-1/2"        | 0316056                      | 3.37        | 7011733                      | 3.61        | 0310844                         | 3.85        | 7005112                 | 3.26        | 7006476                      | 6.16        | 0355610                          | 5.12        |
| #14  | 0.182"  | 2-3/16"     | 3-3/8"        | 0316057                      | 3.46        | 7011732                      | 3.71        | 0310845                         | 3.95        | 7005113                 | 3.26        | 7006475                      | 6.16        | 0355611                          | 5.12        |
| #15  | 0.18"   | 2-3/16"     | 3-3/8"        | 0316058                      | 3.46        | 7011731                      | 3.71        | 0310846                         | 3.95        | 7005114                 | 3.26        | 7006474                      | 6.16        | 0355612                          | 5.12        |
| #16  | 0.177"  | 2-3/16"     | 3-3/8"        | 0316059                      | 3.22        | 7011730                      | 3.45        | 0310847                         | 3.68        | 7005115                 | 3.11        | 7006473                      | 5.88        | 0355613                          | 4.87        |
| #17  | 0.173"  | 2-3/16"     | 3-3/8"        | 0316060                      | 3.16        | 7011729                      | 3.39        | 0310848                         | 3.61        | 7005116                 | 3.11        | 7006472                      | 5.79        | 0355614                          | 4.69        |
| #18  | 0.1695" | 2-1/8"      | 3-1/4"        | 0316061                      | 2.88        | 7011728                      | 3.09        | 0310849                         | 3.29        | 7005117                 | 2.97        | 7006470                      | 5.36        | 0355615                          | 4.28        |
| #19  | 0.166"  | 2-1/8"      | 3-1/4"        | 0316062                      | 2.80        | 7011727                      | 3.00        | 0310850                         | 3.20        | 7005118                 | 2.90        | 7006469                      | 5.20        | 0355616                          | 4.12        |
| #20  | 0.161"  | 2-1/8"      | 3-1/4"        | 0316063                      | 2.70        | 7011726                      | 2.90        | 0310851                         | 3.09        | 7005119                 | 2.74        | 7006468                      | 5.11        | 0355617                          | 4.12        |
| #21  | 0.191"  | 2-5/16"     | 3-1/2"        | 0316064                      | 2.58        | 7011725                      | 2.77        | 0310852                         | 2.95        | 7005120                 | 2.74        | 7006467                      | 5.11        | 0355618                          | 4.12        |
| #22  | 0.157"  | 2"          | 3-1/8"        | 0316065                      | 2.80        | 7011724                      | 3.00        | 0310853                         | 3.20        | 7005121                 | 2.74        | 7006466                      | 5.11        | 0355619                          | 4.12        |
| #23  | 0.154"  | 2"          | 3-1/8"        | 0316066                      | 2.80        | 7011723                      | 3.00        | 0310854                         | 3.20        | 7005122                 | 2.74        | 7006464                      | 5.11        | 0355620                          | 4.12        |
| #24  | 0.152"  | 2"          | 3-1/8"        | 0316067                      | 2.82        | 7011722                      | 3.02        | 0310855                         | 3.22        | 7005123                 | 2.74        | 7006463                      | 4.97        | 0355621                          | 4.12        |
| #25  | 0.1495" | 1-7/8"      | 3"            | 0316068                      | 2.56        | 7011721                      | 2.75        | 0310856                         | 2.93        | 7005124                 | 2.52        | 7006462                      | 4.63        | 0355622                          | 3.75        |
| #26  | 0.147"  | 1-7/8"      | 3"            | 0316069                      | 2.50        | 7011720                      | 2.68        | 0310857                         | 2.86        | 7005125                 | 2.51        | 7006461                      | 4.63        | 0355623                          | 3.75        |
| #27  | 0.144"  | 1-7/8"      | 3"            | 0316070                      | 2.54        | 7011719                      | 2.72        | 0310858                         | 2.90        | 7005126                 | 2.51        | 7006460                      | 4.45        | 0355624                          | 3.75        |
| #28  | 0.1405" | 1-3/4"      | 2-7/8"        | 0316071                      | 2.38        | 7011718                      | 2.55        | 0310859                         | 2.72        | 7005127                 | 2.39        | 7006458                      | 4.19        | 0355625                          | 3.49        |
| #29  | 0.136"  | 1-3/4"      | 2-7/8"        | 0316072                      | 2.32        | 7011717                      | 2.49        | 0310860                         | 2.65        | 7005128                 | 2.38        | 7006457                      | 4.19        | 0355626                          | 3.43        |
| #30  | 0.1285" | 1-5/8"      | 2-3/4"        | 0316073                      | 2.13        | 7011716                      | 2.29        | 0310861                         | 2.44        | 7005129                 | 2.14        | 7006456                      | 3.74        | 0355627                          | 3.17        |
| #31  | 0.12"   | 1-5/8"      | 2-3/4"        | 0316074                      | 2.11        | 7011715                      | 2.26        | 0310862                         | 2.41        | 7005130                 | 2.14        | 0355837                      | 2.66        | 0355628                          | 3.17        |
| #32  | 0.116"  | 1-5/8"      | 2-3/4"        | 0316075                      | 2.05        | 7011714                      | 2.20        | 0310863                         | 2.34        | 7005131                 | 2.13        | 0355838                      | 2.66        | 0355629                          | 3.12        |
| #33  | 0.113"  | 1-1/2"      | 2-5/8"        | 0316076                      | 1.99        | 7011713                      | 2.13        | 0310864                         | 2.27        | 7005132                 | 2.07        | 0355839                      | 2.57        | 0355630                          | 3.05        |
| #34  | 0.111"  | 1-1/2"      | 2-5/8"        | 0316077                      | 1.99        | 7011712                      | 2.13        | 0310865                         | 2.27        | 7005133                 | 2.07        | 0355840                      | 2.57        | 0355631                          | 3.05        |
| #35  | 0.11"   | 1-1/2"      | 2-5/8"        | 0316078                      | 1.99        | 7011711                      | 2.13        | 0310866                         | 2.27        | 7005134                 | 2.07        | 0355841                      | 2.57        | 0355632                          | 3.05        |
| #36  | 0.1065" | 1-7/16"     | 2-1/2"        | 0316079                      | 1.93        | 7011710                      | 2.07        | 0310867                         | 2.21        | 7005135                 | 2.07        | 0355842                      | 2.57        | 0355633                          | 3.05        |
| #37  | 0.104"  | 1-7/16"     | 2-1/2"        | 0316080                      | 1.93        | 7011709                      | 2.07        | 0310868                         | 2.21        | 7005136                 | 2.07        | 0355843                      | 2.56        | 0355634                          | 2.96        |
| #38  | 0.1015" | 1-7/16"     | 2-1/2"        | 0316081                      | 1.85        | 7011708                      | 1.99        | 0310869                         | 2.12        | 7005137                 | 1.96        | 0355844                      | 2.44        | 0355635                          | 2.75        |
| #39  | 0.0995" | 1-3/8"      | 2-3/8"        | 0316082                      | 1.85        | 7011707                      | 1.99        | 0310870                         | 2.12        | 7005138                 | 1.96        | 0355845                      | 2.44        | 0355636                          | 2.75        |
| #40  | 0.098"  | 1-3/8"      | 2-3/8"        | 0316083                      | 1.85        | 7011706                      | 1.99        | 0310871                         | 2.12        | 7005139                 | 1.94        | 0355846                      | 2.37        | 0355637                          | 2.75        |
| #41  | 0.096"  | 1-3/8"      | 2-3/8"        | 0316084                      | 1.82        | 7011705                      | 1.95        | 0310872                         | 2.08        | 7005140                 | 1.94        | 0355847                      | 2.37        | 0355638                          | 2.69        |
| #42  | 0.0935" | 1-1/4"      | 2-1/4"        | 0316085                      | 1.75        | 7011704                      | 1.88        | 0310873                         | 2.00        | 7005141                 | 1.95        | 0355848                      | 2.37        | 0355639                          | 2.69        |
| #43  | 0.089"  | 1-1/4"      | 2-1/4"        | 0316086                      | 1.75        | 7011703                      | 1.88        | 0310874                         | 2.00        | 7005142                 | 1.86        | 0355849                      | 2.32        | 0355640                          | 2.69        |
| #44  | 0.086"  | 1-1/8"      | 2-1/8"        | 0316087                      | 1.75        | 7011702                      | 1.88        | 0310875                         | 2.00        | 7005143                 | 1.86        | 0355850                      | 2.32        | 0355641                          | 2.69        |
| #45  | 0.082"  | 1-1/8"      | 2-1/8"        | 0316088                      | 1.75        | 7011701                      | 1.88        | 0310876                         | 2.00        | 7005144                 | 1.86        | 0355851                      | 2.32        | 0355642                          | 2.69        |
| #46  | 0.081"  | 1-1/8"      | 2-1/8"        | 0316089                      | 1.75        | 7011700                      | 1.88        | 0310877                         | 2.00        | 7005145                 | 1.86        | 0355852                      | 2.32        | 0355643                          | 2.69        |
| #47  | 0.0785" | 1"          | 2"            | 0316090                      | 1.75        | 7011699                      | 1.88        | 0310878                         | 2.00        | 7005146                 | 1.86        | 0355853                      | 2.37        | 0355644                          | 2.69        |
| #48  | 0.076"  | 1"          | 2"            | 0316091                      | 1.75        | 7011698                      | 1.88        | 0310879                         | 2.00        | 7005147                 | 1.86        | 0355854                      | 2.37        | 0355645                          | 2.69        |
| #49  | 0.073"  | 1"          | 2"            | 0316092                      | 1.75        | 7011697                      | 1.88        | 0310880                         | 2.00        | 7005148                 | 1.86        | 0355855                      | 2.37        | 0355646                          | 2.69        |
| #50  | 0.07"   | 1"          | 2"            | 0316093                      | 1.75        | 7011696                      | 1.88        | 0310881                         | 2.00        | 7005149                 | 1.86        | 0355856                      | 2.37        | 0355647                          | 2.69        |
| #51  | 0.067"  | 1"          | 2"            | 0316094                      | 1.75        | 7011695                      | 1.88        | 0310882                         | 2.00        | 7005150                 | 1.86        | 0355857                      | 2.37        | 0355648                          | 2.69        |
| #52  | 0.0635" | 7/8"        | 1-7/8"        | 0316095                      | 1.75        | 7011694                      | 1.88        | 0310883                         | 2.00        | 7005151                 | 1.86        | 0355858                      | 2.37        | 0355649                          | 2.69        |
| #53  | 0.0595" | 7/8"        | 1-7/8"        | 0316096                      | 1.93        | 7011693                      | 2.07        | 0310884                         | 2.21        | 7005152                 | 1.93        |                              |             |                                  |             |
| #54  | 0.055"  | 7/8"        | 1-7/8"        | 0316097                      | 1.93        | 7011692                      | 2.07        | 0310885                         | 2.21        | 7005153                 | 1.93        |                              |             |                                  |             |
| #55  | 0.052"  | 7/8"        | 1-7/8"        | 0316098                      | 1.93        | 7011691                      | 2.07        | 0310886                         | 2.21        | 7005154                 | 1.93        |                              |             |                                  |             |
| #56  | 0.0465" | 3/8"        | 1-3/4"        | 0316099                      | 1.93        | 7011690                      | 2.07        | 0310887                         | 2.21        | 7005155                 | 2.07        |                              |             |                                  |             |
| #57  | 0.043"  | 3/8"        | 1-3/4"        | 0316100                      | 2.16        | 7011689                      | 2.32        | 0310888                         | 2.47        | 7005156                 | 2.07        |                              |             |                                  |             |
| #58  | 0.042"  | 11/16"      | 1-5/8"        | 0316101                      | 2.16        | 7011688                      | 2.32        | 0310889                         | 2.47        | 7005157                 | 2.07        |                              |             |                                  |             |
| #59  | 0.041"  | 11/16"      | 1-5/8"        | 0316102                      | 2.16        | 7011687                      | 2.32        | 0310890                         | 2.47        | 7005158                 | 2.07        |                              |             |                                  |             |
| #60  | 0.04"   | 11/16"      | 1-5/8"        | 0316103                      | 2.16        | 7011686                      | 2.32        | 0310891                         | 2.47        | 7005159                 | 2.07        |                              |             |                                  |             |
| #61  | 0.039"  | 11/16"      | 1-5/8"        |                              |             |                              |             |                                 |             | 7005160                 | 2.30        |                              |             |                                  |             |
| #62  | 0.038"  | 5/8"        | 1-1/2"        |                              |             |                              |             |                                 |             | 7005161                 | 2.30        |                              |             |                                  |             |
| #63  | 0.037"  | 5/8"        | 1-1/2"        |                              |             |                              |             |                                 |             | 7005162                 | 2.30        |                              |             |                                  |             |
| #64  | 0.036"  | 5/8"        | 1-1/2"        |                              |             |                              |             |                                 |             | 7005163                 | 2.30        |                              |             |                                  |             |
| #65  | 0.035"  | 5/8"        | 1-1/2"        |                              |             |                              |             |                                 |             | 7005164                 | 2.30        |                              |             |                                  |             |

# COBALT DRILL BITS

## Cobalt Drill Bits Cont.



| Size   | Decimal | Flute Lgth. | Overall Lgth. | Fastenal Premium Cobalt Gold |             | CleLine 1802 135° S/P Cobalt |             | Norseman 150 Cobalt Gold Finish |             | C/L 550 135° S/P Cobalt |             | C/L 2550 135° S/P Cobalt TiN |             | C/L 550-TA 135° S/P Cobalt TiAIN |             |
|--------|---------|-------------|---------------|------------------------------|-------------|------------------------------|-------------|---------------------------------|-------------|-------------------------|-------------|------------------------------|-------------|----------------------------------|-------------|
|        |         |             |               | Part No.                     | Price /Each | Part No.                     | Price /Each | Part No.                        | Price /Each | Part No.                | Price /Each | Part No.                     | Price /Each | Part No.                         | Price /Each |
| #66    | 0.033"  | 1/2"        | 1-3/8"        |                              |             |                              |             |                                 |             | 7005165                 | \$2.50      |                              |             |                                  |             |
| #67    | 0.032"  | 1/2"        | 1-3/8"        |                              |             |                              |             |                                 |             | 7005166                 | 2.50        |                              |             |                                  |             |
| #68    | 0.031"  | 1/2"        | 1-3/8"        |                              |             |                              |             |                                 |             | 7005167                 | 2.50        |                              |             |                                  |             |
| #69    | 0.0292" | 1/2"        | 1-3/8"        |                              |             |                              |             |                                 |             | 7005168                 | 2.61        |                              |             |                                  |             |
| #70    | 0.028"  | 3/8"        | 1-1/4"        |                              |             |                              |             |                                 |             | 7005169                 | 2.61        |                              |             |                                  |             |
| #71    | 0.026"  | 3/8"        | 1-1/4"        |                              |             |                              |             |                                 |             | 7005170                 | 2.75        |                              |             |                                  |             |
| #72    | 0.025"  | 5/16"       | 1-1/8"        |                              |             |                              |             |                                 |             | 7005171                 | 2.90        |                              |             |                                  |             |
| #73    | 0.024"  | 1/4"        | 1"            |                              |             |                              |             |                                 |             | 7005172                 | 2.90        |                              |             |                                  |             |
| #74    | 0.0225" | 1/4"        | 1"            |                              |             |                              |             |                                 |             | 7005173                 | 2.90        |                              |             |                                  |             |
| #75    | 0.021"  | 1/4"        | 1"            |                              |             |                              |             |                                 |             | 7005174                 | 3.15        |                              |             |                                  |             |
| #76    | 0.02"   | 3/16"       | 7/8"          |                              |             |                              |             |                                 |             | 7005175                 | 3.15        |                              |             |                                  |             |
| #77    | 0.018"  | 3/16"       | 7/8"          |                              |             |                              |             |                                 |             | 7005176                 | 3.56        |                              |             |                                  |             |
| #78    | 0.016"  | 3/16"       | 7/8"          |                              |             |                              |             |                                 |             | 7005177                 | 3.56        |                              |             |                                  |             |
| #79    | 0.0145" | 1/8"        | 3/4"          |                              |             |                              |             |                                 |             | 7005178                 | 3.63        |                              |             |                                  |             |
| #80    | 0.0135" | 1/8"        | 3/4"          |                              |             |                              |             |                                 |             | 7005179                 | 3.63        |                              |             |                                  |             |
| Ltr A  | 0.234"  | 2-5/8"      | 3-7/8"        | 0316018                      | \$4.82      | 7011632                      | \$5.17      | 0310806                         | \$5.51      | 7005180                 | 4.75        | 7006510                      | \$9.14      | 0355470                          | \$7.81      |
| Ltr B  | 0.238"  | 2-3/4"      | 4"            | 0316019                      | 5.48        | 7011633                      | 5.87        | 0310807                         | 6.26        | 7005181                 | 5.11        | 7006511                      | 10.31       | 0355471                          | 8.24        |
| Ltr C  | 0.242"  | 2-3/4"      | 4"            | 0316020                      | 5.48        | 7011634                      | 5.87        | 0310808                         | 6.26        | 7005182                 | 5.11        | 7006512                      | 10.31       | 0355472                          | 8.29        |
| Ltr D  | 0.246"  | 2-3/4"      | 4"            | 0316021                      | 5.48        | 7011635                      | 5.87        | 0310809                         | 6.26        | 7005183                 | 5.20        | 7006513                      | 10.62       | 0355473                          | 8.61        |
| 1/4"-E | 0.25"   | 2-3/4"      | 4"            | 0316022                      | 4.82        |                              |             | 0310810                         | 5.51        |                         |             |                              |             |                                  |             |
| Ltr F  | 0.257"  | 2-7/8"      | 4-1/8"        | 0316023                      | 5.66        | 7011636                      | 5.17        | 0310811                         | 6.47        | 7005184                 | 5.36        | 7006514                      | 10.76       | 0355577                          | 8.65        |
| Ltr G  | 0.261"  | 2-7/8"      | 4-1/8"        |                              |             | 7011637                      | 4.33        | 0310812                         | 6.47        | 7005185                 | 5.56        | 7006515                      | 10.98       | 0355578                          | 8.82        |
| Ltr H  | 0.266"  | 2-7/8"      | 4-1/8"        | 0316025                      | 6.36        | 7011638                      | 6.81        | 0310813                         | 7.26        | 7005186                 | 5.72        | 7006516                      | 11.05       | 0355579                          | 8.92        |
| Ltr I  | 0.272"  | 2-7/8"      | 4-1/8"        | 0316026                      | 5.98        | 7011639                      | 6.41        | 0310814                         | 6.83        | 7005187                 | 5.79        | 7006517                      | 11.14       | 0355580                          | 8.98        |
| Ltr J  | 0.277"  | 2-7/8"      | 4-1/8"        | 0316027                      | 6.36        | 7011640                      | 6.81        | 0310815                         | 7.26        | 7005188                 | 6.01        | 7006518                      | 11.59       | 0355581                          | 9.35        |
| Ltr K  | 0.281"  | 2-15/16"    | 4-1/4"        | 0316028                      | 6.36        | 7011641                      | 6.81        | 0310816                         | 7.26        | 7005189                 | 6.24        | 7006519                      | 11.79       | 0355582                          | 10.01       |
| Ltr L  | 0.29"   | 2-15/16"    | 4-1/4"        | 0316029                      | 7.09        | 7011642                      | 7.60        | 0310817                         | 8.10        | 7005190                 | 6.85        | 7006520                      | 13.08       | 0355583                          | 10.65       |
| Ltr M  | 0.295"  | 3-1/16"     | 4-3/8"        | 0316030                      | 7.66        | 7011643                      | 8.21        | 0310818                         | 8.75        | 7005191                 | 7.43        | 7006521                      | 14.18       | 0355584                          | 11.45       |
| Ltr N  | 0.302"  | 3-1/16"     | 4-3/8"        | 0316031                      | 7.69        | 7011644                      | 8.24        | 0310819                         | 8.79        | 7005192                 | 7.56        | 7006522                      | 14.24       | 0355585                          | 11.66       |
| Ltr O  | 0.316"  | 3-3/16"     | 4-1/2"        | 0316032                      | 8.46        | 7011645                      | 9.07        | 0310820                         | 9.67        | 7005193                 | 8.24        | 7006523                      | 15.58       | 0355586                          | 12.81       |
| Ltr P  | 0.323"  | 3-5/16"     | 4-5/8"        | 0316033                      | 9.13        | 7011646                      | 9.78        | 0310821                         | 10.43       | 7005194                 | 8.62        | 7006524                      | 16.02       | 0355587                          | 13.25       |
| Ltr Q  | 0.332"  | 3-7/16"     | 4-3/4"        | 0316034                      | 9.24        | 7011647                      | 9.90        | 0310822                         | 10.56       | 7005195                 | 8.69        | 7006525                      | 16.18       | 0355588                          | 13.35       |
| Ltr R  | 0.339"  | 3-7/16"     | 4-3/4"        | 0316035                      | 9.24        | 7011648                      | 9.90        | 0310823                         | 10.56       | 7005196                 | 8.75        | 7006526                      | 16.40       | 0355589                          | 13.51       |
| Ltr S  | 0.348"  | 3-1/2"      | 4-7/8"        | 0316036                      | 11.54       | 7011649                      | 12.37       | 0310824                         | 13.19       | 7005197                 | 10.94       | 7006527                      | 19.84       | 0355590                          | 16.35       |
| Ltr T  | 0.358"  | 3-1/2"      | 4-7/8"        | 0316037                      | 11.54       | 7011650                      | 12.37       | 0310825                         | 13.19       | 7005198                 | 11.21       | 7006528                      | 20.77       | 0355591                          | 17.31       |
| Ltr U  | 0.368"  | 3-5/8"      | 5"            | 0316038                      | 11.54       | 7011651                      | 12.37       | 0310826                         | 13.19       | 7005199                 | 11.28       | 7006529                      | 20.92       | 0355592                          | 17.41       |
| Ltr V  | 0.377"  | 3-5/8"      | 5"            | 0316039                      | 13.23       | 7011652                      | 14.18       | 0310827                         | 15.12       | 7005200                 | 11.79       | 7006530                      | 22.63       | 0355593                          | 18.63       |
| Ltr W  | 0.386"  | 3-3/4"      | 5-1/8"        | 0316040                      | 13.46       | 7011653                      | 14.42       | 0310828                         | 15.38       | 7005201                 | 12.02       | 7006531                      | 22.77       | 0355594                          | 18.79       |
| Ltr X  | 0.397"  | 3-3/4"      | 5-1/8"        | 0316041                      | 13.46       | 7011654                      | 14.42       | 0310829                         | 15.38       | 7005202                 | 12.47       | 7006532                      | 22.93       | 0355595                          | 18.89       |
| Ltr Y  | 0.404"  | 3-7/8"      | 5-1/4"        | 0316042                      | 14.35       | 7011655                      | 15.38       | 0310830                         | 16.40       | 7005203                 | 13.21       | 7006533                      | 24.19       | 0355596                          | 19.96       |
| Ltr Z  | 0.413"  | 3-7/8"      | 5-1/4"        | 0316043                      | 15.59       | 7011656                      | 16.71       | 0310831                         | 17.82       | 7005204                 | 14.06       | 7006534                      | 25.67       | 0355597                          | 21.21       |

Cutting Tools

## Cobalt 135° Point Jobber Sets



| Contents                          | Cle-Line 1802 Straw |             | Norseman 150 Gold |             | Chicago Latrobe 550 Straw |             |
|-----------------------------------|---------------------|-------------|-------------------|-------------|---------------------------|-------------|
|                                   | Part No.            | Price /Each | Part No.          | Price /Each | Part No.                  | Price /Each |
| 1/16-1/4x1/64 13pc                | 7012738             | \$33.49     | 0310892           | \$53.35     | 7007270                   | \$44.36     |
| 1/16-1/2x1/32 15pc                | 7012739             | 91.11       | 0310893           | 159.57      | 7007271                   | 117.15      |
| 1/16-3/8x1/64 21pc                |                     |             | 0310894           | 141.55      | 7007274                   | 98.06       |
| 1/16-1/2x1/64 29pc                | 7012740             | 174.11      | 0310896           | 299.75      | 7007269                   | 214.65      |
| LET A-Z 26pc                      |                     |             | 0310895           | 267.17      | 7007273                   | 185.42      |
| #1-60 Wire 60 pc                  | 7012741             | 128.78      | 0310897           | 191.64      | 7007272                   | 167.92      |
| 1/16-1/2x1/64, #1-60#, A-Z 115 pc | 7012742             | 486.01      | 0310898           | 759.34      | 7007266                   | 633.02      |



# HSS DRILL BITS

## HSS Drill Bits

### 118° Screw Machine Bright & TiN

- Chicago-Latrobe 157 production drill bits are made from premium HSS with a 118° point.
- Sizes up through 1/2" are bright, providing good chip escalation.
- Sizes above 1/2" are black oxide which increases wear resistance and chip flow.
- Chicago-Latrobe 157L production drill bits are made from premium HSS with a 118° point.
- All sizes have a bright finish, providing good chip escalation.
- Left hand helix for drilling in operating conditions where the machine spindle rotates counter-clockwise.
- Left hand drills can also be used as a screw extractor.
- Chicago-Latrobe 2157 production drill bits are made from premium HSS with a 118° point.
- The Titanium Nitride (TiN) coating adds lubricity and hardness, enhancing chip flow and tool life.



### Fractional Sizes

| Size   | Decimal   | Flute Lgth. | Overall Lgth. | Norseman Series 260 Bright 118° |             | CL Series 157 Bright 118° |             | CL Series 157L Left Hand Helix 118° |             | CL Series 2157 TiN 118° |             |
|--------|-----------|-------------|---------------|---------------------------------|-------------|---------------------------|-------------|-------------------------------------|-------------|-------------------------|-------------|
|        |           |             |               | Part No.                        | Price /Each | Part No.                  | Price /Each | Part No.                            | Price /Each | Part No.                | Price /Each |
| 3/64"  | 0.046875" | 0.5"        | 1.375"        | 0311909                         | \$1.45      | 7006119                   | \$1.25      |                                     |             |                         |             |
| 1/16"  | 0.0625"   | 0.625"      | 1.625"        | 0311910                         | 1.39        | 7006123                   | 1.19        | 0356145                             | \$2.15      | 0356015                 | \$2.07      |
| 5/64"  | 0.078125" | 0.6875"     | 1.6875"       | 0311911                         | 1.39        | 7006129                   | 1.19        | 0356146                             | 2.15        | 0356016                 | 2.12        |
| 3/32"  | 0.09375"  | 0.75"       | 1.75"         | 0311912                         | 1.39        | 7006136                   | 1.19        | 0356147                             | 2.15        | 0356017                 | 2.12        |
| 7/64"  | 0.109375" | 0.8125"     | 1.8125"       | 0311913                         | 1.39        | 7006143                   | 1.19        | 0356148                             | 2.15        | 0356018                 | 2.21        |
| 1/8"   | 0.125"    | 0.875"      | 1.875"        | 0311914                         | 1.39        | 7006149                   | 1.19        | 0356149                             | 2.16        | 0356019                 | 2.21        |
| 9/64"  | 0.140625" | 0.9375"     | 1.9375"       | 0311915                         | 1.41        | 7006153                   | 1.21        | 0356150                             | 2.16        | 0356121                 | 2.52        |
| 5/32"  | 0.15625"  | 1"          | 2.0625"       | 0311916                         | 1.55        | 7006159                   | 1.32        | 0356151                             | 2.56        | 0356122                 | 2.69        |
| 11/64" | 0.171875" | 1.0625"     | 2.125"        | 0311917                         | 1.72        | 7006165                   | 1.42        | 0356152                             | 2.84        | 0356123                 | 2.96        |
| 3/16"  | 0.1875"   | 1.125"      | 2.1875"       | 0311918                         | 1.80        | 7006171                   | 1.43        | 0356153                             | 3.05        | 0356124                 | 2.96        |
| 13/64" | 0.203125" | 1.1875"     | 2.25"         | 0311919                         | 1.88        | 7006178                   | 1.65        | 0356154                             | 3.53        | 0356125                 | 3.43        |
| 7/32"  | 0.21875"  | 1.25"       | 2.375"        | 0311920                         | 2.27        | 7006183                   | 1.85        | 0356155                             | 3.95        | 0356126                 | 3.63        |
| 15/64" | 0.234375" | 1.3125"     | 2.4375"       | 0311921                         | 2.29        | 7006187                   | 1.93        | 0356156                             | 4.22        | 0356127                 | 3.74        |
| 1/4"-E | 0.25"     | 1.375"      | 2.5"          | 0311922                         | 2.41        | 7006191                   | 2.07        | 0356157                             | 4.44        | 0356128                 | 3.81        |
| 17/64" | 0.265625" | 1.4375"     | 2.625"        | 0311923                         | 2.87        | 7006194                   | 2.41        | 0356158                             | 5.54        | 0356129                 | 4.92        |
| 9/32"  | 0.28125"  | 1.5"        | 2.6875"       | 0311924                         | 3.09        | 7006199                   | 2.52        | 0356159                             | 5.82        | 0356130                 | 5.12        |
| 19/64" | 0.296875" | 1.5625"     | 2.75"         | 0311925                         | 3.29        | 7006202                   | 2.75        | 0356160                             | 6.46        | 0356131                 | 5.44        |
| 5/16"  | 0.3125"   | 1.625"      | 2.8125"       | 0311926                         | 3.58        | 7006204                   | 2.90        | 0356161                             | 6.51        | 0356132                 | 5.74        |
| 21/64" | 0.328125" | 1.6875"     | 2.9375"       | 0311927                         | 3.87        | 7006207                   | 3.26        | 0356162                             | 7.32        | 0356133                 | 6.17        |
| 11/32" | 0.34375"  | 1.6875"     | 3"            | 0311928                         | 4.40        | 7006210                   | 3.62        | 0356163                             | 8.17        | 0356134                 | 7.03        |
| 23/64" | 0.359375" | 1.75"       | 3.0625"       | 0311929                         | 5.11        | 7006213                   | 4.23        | 0356164                             | 9.60        | 0356135                 | 8.17        |
| 3/8"   | 0.375"    | 1.8125"     | 3.125"        | 0311930                         | 5.36        | 7006215                   | 4.39        | 0356165                             | 9.97        | 0356136                 | 8.33        |
| 25/64" | 0.390625" | 1.875"      | 3.25"         | 0311931                         | 6.03        | 7006218                   | 5.04        | 0356166                             | 11.34       | 0356137                 | 9.44        |
| 13/32" | 0.40625"  | 1.9375"     | 3.3125"       | 0311932                         | 5.27        | 7006221                   | 5.27        | 0356167                             | 11.50       | 0356138                 | 9.97        |
| 27/64" | 0.421875" | 2"          | 3.375"        | 0311933                         | 6.93        | 7006223                   | 5.72        | 0356168                             | 12.80       | 0356139                 | 10.70       |
| 7/16"  | 0.4375"   | 2.0625"     | 3.4375"       | 0311934                         | 7.08        | 7006224                   | 5.79        | 0356169                             | 13.04       | 0356140                 | 11.02       |
| 29/64" | 0.453125" | 2.125"      | 3.5625"       | 0311935                         | 8.39        | 7006225                   | 6.92        | 0356170                             | 15.42       | 0356141                 | 12.45       |
| 15/32" | 0.46875"  | 2.125"      | 3.625"        | 0311936                         | 8.94        | 7006226                   | 7.43        | 0356171                             | 16.35       | 0356142                 | 13.04       |
| 31/64" | 0.484375" | 2.1875"     | 3.6875"       | 0311937                         | 9.19        | 7006227                   | 7.78        | 0356172                             | 17.02       | 0356143                 | 13.29       |
| 1/2"   | 0.5"      | 2.25"       | 3.75"         | 0311938                         | 9.19        | 7006228                   | 7.86        | 0356173                             | 16.83       | 0356144                 | 13.51       |
| 33/64" | 0.515625" | 2.375"      | 3.875"        | 0311939                         | 22.87       | 7006229                   | 19.28       |                                     |             |                         |             |
| 17/32" | 0.53125"  | 2.375"      | 3.875"        | 0311940                         | 23.93       | 7006230                   | 19.97       |                                     |             |                         |             |
| 35/64" | 0.546875" | 2.5"        | 4"            | 0311941                         | 24.93       | 7006231                   | 20.77       |                                     |             |                         |             |
| 9/16"  | 0.5625"   | 2.5"        | 4"            | 0311942                         | 24.93       | 7006232                   | 20.57       |                                     |             |                         |             |
| 37/64" | 0.578125" | 2.625"      | 4.125"        | 0311943                         | 28.53       | 7006233                   | 22.08       |                                     |             |                         |             |
| 19/32" | 0.59375"  | 2.625"      | 4.125"        | 0311944                         | 28.53       | 7006234                   | 22.64       |                                     |             |                         |             |
| 39/64" | 0.609375" | 2.75"       | 4.25"         | 0311945                         | 29.90       | 7006235                   | 23.54       |                                     |             |                         |             |
| 5/8"   | 0.625"    | 2.75"       | 4.25"         | 0311946                         | 28.81       | 7006236                   | 23.72       |                                     |             |                         |             |
| 41/64" | 0.640625" | 2.875"      | 4.5"          | 0311947                         | 32.02       | 0355991                   | 18.20       |                                     |             |                         |             |
| 21/32" | 0.65625"  | 2.875"      | 4.5"          | 0311948                         | 36.68       | 0355992                   | 18.89       |                                     |             |                         |             |
| 43/64" | 0.671875" | 2.875"      | 4.625"        | 0311949                         | 33.02       | 0355993                   | 19.84       |                                     |             |                         |             |
| 11/16" | 0.6875"   | 2.875"      | 4.625"        | 0311950                         | 36.68       | 0355994                   | 20.36       |                                     |             |                         |             |
| 45/64" | 0.703125" | 3"          | 4.75"         | 0311951                         | 39.69       | 0355995                   | 21.68       |                                     |             |                         |             |
| 23/32" | 0.71875"  | 3"          | 4.75"         | 0311952                         | 39.69       | 0355996                   | 22.58       |                                     |             |                         |             |
| 47/64" | 0.734375" | 3.125"      | 5"            | 0311953                         | 42.73       | 0355997                   | 22.90       |                                     |             |                         |             |
| 3/4"   | 0.75"     | 3.125"      | 5"            | 0311954                         | 48.94       | 0355998                   | 23.87       |                                     |             |                         |             |
| 49/64" | 0.765625" | 3.25"       | 5.125"        | 0311955                         | 45.75       | 0355999                   | 26.01       |                                     |             |                         |             |
| 25/32" | 0.78125"  | 3.25"       | 5.125"        | 0311956                         | 45.75       | 0356000                   | 25.95       |                                     |             |                         |             |
| 51/64" | 0.796875" | 3.375"      | 5.25"         | 0311957                         | 48.94       | 0356001                   | 27.68       |                                     |             |                         |             |
| 13/16" | 0.8125"   | 3.375"      | 5.25"         | 0311958                         | 48.14       | 0356002                   | 27.81       |                                     |             |                         |             |

### Fractional Sizes Cont.

| Size   | Decimal   | Flute Lgth. | Overall Lgth. | Norseman Series 260 Bright 118° |             | CL Series 157 Bright 118° |             | CL Series 157L Left Hand Helix 118° |             | CL Series 2157 TiN 118° |             |
|--------|-----------|-------------|---------------|---------------------------------|-------------|---------------------------|-------------|-------------------------------------|-------------|-------------------------|-------------|
|        |           |             |               | Part No.                        | Price /Each | Part No.                  | Price /Each | Part No.                            | Price /Each | Part No.                | Price /Each |
| 53/64" | 0.828125" | 3.5"        | 5.375"        | 0311959                         | \$51.07     | 0356003                   | \$28.82     |                                     |             |                         |             |
| 27/32" | 0.84375"  | 3.5"        | 5.375"        | 0311960                         | 51.07       | 0356004                   | 29.28       |                                     |             |                         |             |
| 55/64" | 0.859375" | 3.5"        | 5.5"          | 0311961                         | 52.82       | 0356005                   | 30.45       |                                     |             |                         |             |
| 7/8"   | 0.875"    | 3.5"        | 5.5"          | 0311962                         | 52.41       | 0356006                   | 31.66       |                                     |             |                         |             |
| 57/64" | 0.890625" | 3.625"      | 5.625"        | 0311963                         | 54.84       | 0356007                   | 32.56       |                                     |             |                         |             |
| 29/32" | 0.90625"  | 3.625"      | 5.625"        | 0311964                         | 54.84       | 0356008                   | 32.08       |                                     |             |                         |             |
| 59/64" | 0.921875" | 3.75"       | 5.75"         | 0311965                         | 60.50       | 0356009                   | 34.03       |                                     |             |                         |             |
| 15/16" | 0.9375"   | 3.75"       | 5.75"         | 0311966                         | 60.50       | 0356010                   | 36.27       |                                     |             |                         |             |
| 61/64" | 0.953125" | 3.875"      | 5.875"        | 0311967                         | 65.72       | 0356011                   | 36.67       |                                     |             |                         |             |
| 31/32" | 0.96875"  | 3.875"      | 5.875"        | 0311968                         | 65.72       | 0356012                   | 37.98       |                                     |             |                         |             |
| 63/64" | 0.984375" | 4"          | 6"            | 0311969                         | 69.63       | 0356013                   | 39.52       |                                     |             |                         |             |
| 1      | 1"        | 4"          | 6"            | 0311970                         | 67.38       | 0356014                   | 40.90       |                                     |             |                         |             |

### Fractional Sets

| Type | Contents                  | Part No. | Price /Each |
|------|---------------------------|----------|-------------|
| 2157 | 1/16-1/2 x 64ths (29 pc.) | 0357001  | \$202.19    |
| 2157 | 1/16-1/4 x 64ths (13 pc.) | 0357004  | 36.24       |
| 2157 | 1/16-1/2 x 32nds (15 pc.) | 0357005  | 105.91      |

### Wire Sizes

| Size | Decimal | Flute Lgth. | Overall Lgth. | Norseman Series 260 Bright 118° |             | CL Series 157 Bright 118° |             | CL Series 157L Left Hand Helix 118° |             |
|------|---------|-------------|---------------|---------------------------------|-------------|---------------------------|-------------|-------------------------------------|-------------|
|      |         |             |               | Part No.                        | Price /Each | Part No.                  | Price /Each | Part No.                            | Price /Each |
| #1   | 0.228"  | 1.3125"     | 2.4375"       | 0312013                         | \$2.41      | 7006185                   | \$2.07      | 0356174                             | \$4.02      |
| #2   | 0.221"  | 1.3125"     | 2.4375"       | 0312014                         | 2.41        | 7006184                   | 2.07        | 0356175                             | 4.02        |
| #3   | 0.213"  | 1.25"       | 2.375"        | 0312015                         | 2.29        | 7006182                   | 1.94        | 0356176                             | 3.75        |
| #4   | 0.209"  | 1.25"       | 2.375"        | 0312016                         | 2.29        | 7006181                   | 1.94        | 0356177                             | 3.75        |
| #5   | 0.2055" | 1.25"       | 2.375"        | 0312017                         | 2.29        | 7006180                   | 1.94        | 0356178                             | 3.75        |
| #6   | 0.204"  | 1.25"       | 2.375"        | 0312018                         | 2.29        | 7006179                   | 1.94        | 0356179                             | 3.75        |
| #7   | 0.201"  | 1.1875"     | 2.25"         | 0312019                         | 1.86        | 7006177                   | 1.60        | 0356180                             | 3.12        |
| #8   | 0.199"  | 1.1875"     | 2.25"         | 0312020                         | 1.86        | 7006176                   | 1.60        | 0356181                             | 3.12        |
| #9   | 0.196"  | 1.1875"     | 2.25"         | 0312021                         | 1.86        | 7006175                   | 1.60        | 0356182                             | 3.12        |
| #10  | 0.1935" | 1.1875"     | 2.25"         | 0312022                         | 1.86        | 7006174                   | 1.60        | 0356183                             | 3.12        |
| #11  | 0.191"  | 1.1875"     | 2.25"         | 0312023                         | 1.84        | 7006173                   | 1.60        | 0356184                             | 3.01        |
| #12  | 0.189"  | 1.1875"     | 2.25"         | 0312024                         | 1.86        | 7006172                   | 1.60        | 0356185                             | 3.01        |
| #13  | 0.185"  | 1.125"      | 2.1875"       | 0312025                         | 1.86        | 7006170                   | 1.60        | 0356186                             | 2.80        |
| #14  | 0.182"  | 1.125"      | 2.1875"       | 0312026                         | 1.86        | 7006169                   | 1.60        | 0356187                             | 2.80        |
| #15  | 0.18"   | 1.125"      | 2.1875"       | 0312027                         | 1.86        | 7006168                   | 1.60        | 0356188                             | 2.80        |
| #16  | 0.177"  | 1.125"      | 2.1875"       | 0312028                         | 1.86        | 7006167                   | 1.60        | 0356189                             | 2.80        |
| #17  | 0.173"  | 1.125"      | 2.1875"       | 0312029                         | 1.86        | 7006166                   | 1.60        | 0356190                             | 2.80        |
| #18  | 0.1695" | 1.0625"     | 2.125"        | 0312030                         | 1.69        | 7006164                   | 1.43        | 0356191                             | 2.48        |
| #19  | 0.166"  | 1.0625"     | 2.125"        | 0312031                         | 1.69        | 7006163                   | 1.38        | 0356192                             | 2.48        |
| #20  | 0.161"  | 1.0625"     | 2.125"        | 0312032                         | 1.69        | 7006162                   | 1.38        | 0356193                             | 2.48        |
| #21  | 0.159"  | 1.0625"     | 2.125"        | 0312033                         | 1.55        | 7006161                   | 1.37        | 0356194                             | 2.27        |
| #22  | 0.157"  | 1.0625"     | 2.125"        | 0312034                         | 1.55        | 7006160                   | 1.37        | 0356195                             | 2.27        |
| #23  | 0.154"  | 1"          | 2.0625"       | 0312035                         | 1.55        | 7006158                   | 1.37        | 0356196                             | 2.27        |
| #24  | 0.152"  | 1"          | 2.0625"       | 0312036                         | 1.55        | 7006157                   | 1.37        | 0356197                             | 2.27        |
| #25  | 0.1495" | 1"          | 2.0625"       | 0312037                         | 1.55        | 7006156                   | 1.34        | 0356198                             | 2.16        |
| #26  | 0.147"  | 1"          | 2.0625"       | 0312038                         | 1.50        | 7006155                   | 1.34        | 0356221                             | 2.16        |
| #27  | 0.144"  | 1"          | 2.0625"       | 0312039                         | 1.50        | 7006154                   | 1.34        | 0356222                             | 2.16        |
| #28  | 0.1405" | 0.9375"     | 1.9375"       | 0312040                         | 1.39        | 7006152                   | 1.19        | 0356223                             | 2.08        |
| #29  | 0.136"  | 0.9375"     | 1.9375"       | 0312041                         | 1.39        | 7006151                   | 1.19        | 0356224                             | 2.08        |
| #30  | 0.1285" | 0.9375"     | 1.9375"       | 0312042                         | 1.39        | 7006150                   | 1.19        | 0356225                             | 2.08        |
| #31  | 0.12"   | 0.875"      | 1.875"        | 0312043                         | 1.37        | 7006148                   | 1.19        | 0356226                             | 2.08        |
| #32  | 0.116"  | 0.875"      | 1.875"        | 0312044                         | 1.37        | 7006147                   | 1.19        | 0356227                             | 2.08        |
| #33  | 0.113"  | 0.875"      | 1.875"        | 031204                          |             |                           |             |                                     |             |



## HSS Drill Bits Cont.



### Wire Sizes Cont.

| Size | Decimal | Flute Lgth. | Overall Lgth. | Norseman Series 260 Bright 118°<br>Part No. | Price /Each | CL Series 157 Bright 118°<br>Part No. | Price /Each | CL Series 157L Left Hand Helix 118°<br>Part No. | Price /Each |
|------|---------|-------------|---------------|---|-------------|---------------------------------------|-------------|---|-------------|
| #47  | 0.0785" | 0.75"       | 1.75"         | 0312059                                     | \$1.37      | 7006130                               | \$1.19      | 0356242   | \$2.08      |
| #48  | 0.076"  | 0.6875"     | 1.6875"       | 0312060                                     | 1.37        | 7006128                               | 1.19        | 0356243   | 2.08        |
| #49  | 0.073"  | 0.6875"     | 1.6875"       | 0312061                                     | 1.37        | 7006127                               | 1.19        | 0356244   | 2.08        |
| #50  | 0.07"   | 0.6875"     | 1.6875"       | 0312062                                     | 1.37        | 7006126                               | 1.19        | 0356245   | 2.08        |
| #51  | 0.067"  | 0.6875"     | 1.6875"       | 0312063                                     | 1.37        | 7006125                               | 1.19        | 0356246   | 2.08        |
| #52  | 0.0635" | 0.6875"     | 1.6875"       | 0312064                                     | 1.37        | 7006124                               | 1.19        | 0356247   | 2.08        |
| #53  | 0.0595" | 0.625"      | 1.625"        | 0312065                                     | 1.37        | 7006122                               | 1.19        | 0356248   | 2.08        |
| #54  | 0.055"  | 0.625"      | 1.625"        | 0312066                                     | 1.37        | 7006121                               | 1.19        | 0356249   | 2.08        |
| #55  | 0.052"  | 0.625"      | 1.625"        | 0312067                                     | 1.37        | 7006120                               | 1.19        | 0356250   | 2.08        |
| #56  | 0.0465" | 0.5"        | 1.375"        | 0312068                                     | 1.37        | 7006118                               | 1.19        | 0356251   | 2.08        |
| #57  | 0.043"  | 0.5"        | 1.375"        | 0312069                                     | 1.37        | 7006117                               | 1.19        | 0356252   | 2.08        |
| #58  | 0.042"  | 0.5"        | 1.375"        | 0312070                                     | 1.37        | 7006116                               | 1.19        | 0356253   | 2.08        |
| #59  | 0.041"  | 0.5"        | 1.375"        | 0312071                                     | 1.37        | 7006115                               | 1.19        | 0356254   | 2.08        |
| #60  | 0.04"   | 0.5"        | 1.375"        | 0312072                                     | 1.37        | 7006114                               | 1.12        | 0356255   | 2.08        |



### Wire Sets

| Type           | Contents            | Part No. | Price /Each |
|----------------|---------------------|----------|-------------|
| CL Series 2157 | #1-60 Wire (60 pc.) | 0357007  | \$138.14    |

### Letter Sets

| Type | Contents         | Part No. | Price /Each |
|------|------------------|----------|-------------|
| 2157 | LET A-Z (26 pc.) | 0357006  | \$185.47    |

## 135° Black + TiN Screw Machine

- Cle-Line 1896 screw machine length drill bits have superior rigidity minimizing deflection when using heavy feed rates.
- The 135° split point is self centering for reduced thrust and easier penetration.
- The black oxide finish increases wear resistance and improves lubricity.

- Chicago-Latrobe 159 screw machine length drill bits have superior rigidity minimizing deflection when using heavy feed rates.
- These drill bits are made from premium HSS.
- The 135° split point is self centering for reduced thrust and easier penetration.
- The black oxide finish increases wear resistance and improves lubricity.

- Chicago-Latrobe 159 screw machine length drill bits have superior rigidity minimizing deflection when using heavy feed rates.
- These drill bits are made from premium HSS.
- The 135° split point is self centering for reduced thrust and easier penetration.
- The Titanium Nitride (TiN) coating adds lubricity and hardness, enhancing chip flow and tool life.



### Fractional Sizes

| Size   | Decimal   | Flute Lgth. | Overall Lgth. | Cle-Line Series 1896 Black 135°<br>Part No. | Price /Each | Norseman Type 135 AG Magnum Super Premium Black and Gold 135°<br>Part No. | Price /Each | Norseman Type 135 Surface Treated 135°<br>Part No. | Price /Each | CL Series 159 Black 135°<br>Part No. | Price /Each | Norseman Type 135TN TiN Coated 135°<br>Part No. | Price /Each | CL Series 2159 TN 135°<br>Part No. | Price /Each |
|--------|-----------|-------------|---------------|---|-------------|---|-------------|--|-------------|--------------------------------------|-------------|---|-------------|------------------------------------|-------------|
| 1/32"  | 0.0312"   | 0.5"        | 1-3/8"        |   |             |   |             |  |             |                                      |             |   |             | 0356281                            | \$2.16      |
| 3/64"  | 0.046875" | 0.5"        | 1-3/8"        |   |             |   |             |  |             |                                      |             |   |             | 0356282                            | 2.11        |
| 1/16"  | 0.0625"   | 0.625"      | 1.625"        | 0355004                                     | \$0.86      | 0310584   | \$1.45      | 53105  | \$1.20      | 7006246                              | \$1.31      | 0310701   | \$3.55      | 7005483                            | 2.93        |
| 5/64"  | 0.078125" | 0.6875"     | 1.6875"       | 0355005                                     | 0.86        | 0310585   | 1.51        | 53106  | 1.20        | 7006252                              | 1.31        | 0310702   | 3.55        | 7005484                            | 2.93        |
| 3/32"  | 0.09375"  | 0.75"       | 1.75"         | 0355006                                     | 0.93        | 0310586   | 1.54        | 53107  | 1.20        | 7006259                              | 1.31        | 0310703   | 3.55        | 7005485                            | 3.01        |
| 7/64"  | 0.109375" | 0.8125"     | 1.8125"       | 0355007                                     | 0.93        | 0310587   | 1.65        | 53108  | 1.20        | 7006266                              | 1.31        | 0310704   | 3.55        | 7005486                            | 3.01        |
| 1/8"   | 0.125"    | 0.875"      | 1.875"        | 0355008                                     | 0.93        | 0310588   | 1.75        | 53109  | 1.20        | 7006272                              | 1.31        | 0310705   | 3.55        | 7005487                            | 3.01        |
| 9/64"  | 0.140625" | 0.9375"     | 1.9375"       | 0355009                                     | 1.04        | 0310589   | 1.78        | 53110  | 1.36        | 7006276                              | 1.37        | 0310706   | 4.06        | 7005488                            | 3.11        |
| 5/32"  | 0.15625"  | 1"          | 2.0625"       | 0355010                                     | 1.14        | 0310590   | 1.97        | 53111  | 1.40        | 7006282                              | 1.43        | 0310707   | 4.21        | 7005489                            | 3.20        |
| 11/64" | 0.171875" | 1.0625"     | 2.125"        | 0355011                                     | 1.22        | 0310591   | 2.18        | 53112  | 1.54        | 7006288                              | 1.49        | 0310708   | 4.38        | 7005490                            | 3.30        |
| 3/16"  | 0.1875"   | 1.125"      | 2.1875"       | 0355012                                     | 1.29        | 0310592   | 2.27        | 53113  | 1.78        | 7006294                              | 1.56        | 0310709   | 4.46        | 7005491                            | 3.50        |
| 13/64" | 0.203125" | 1.1875"     | 2.25"         | 0355013                                     | 1.47        | 0310593   | 2.42        | 53114  | 1.88        | 7006301                              | 1.70        | 0310710   | 5.87        | 7005492                            | 3.74        |
| 7/32"  | 0.21875"  | 1.25"       | 2.375"        | 0355014                                     | 1.58        | 0310594   | 2.87        | 53115  | 2.17        | 7006306                              | 2.01        | 0310711   | 6.30        | 7005493                            | 4.51        |
| 15/64" | 0.234375" | 1.3125"     | 2.4375"       | 0355015                                     | 1.65        | 0310595   | 2.89        | 53116  | 2.33        | 7006309                              | 2.08        | 0310712   | 6.35        | 7005494                            | 4.64        |
| 1/4"-E | 0.25"     | 1.375"      | 2.5"          | 0355016                                     | 1.71        | 0310596   | 3.07        | 53117  | 2.57        | 7006310                              | 2.27        | 0310713   | 6.52        | 7005495                            | 4.96        |
| 17/64" | 0.265625" | 1.4375"     | 2.625"        | 0355017                                     | 2.14        | 0310597   | 3.57        | 53118  | 2.98        | 7006312                              | 2.56        | 0310714   | 9.06        | 7005496                            | 5.42        |
| 9/32"  | 0.28125"  | 1.5"        | 2.6875"       | 0355018                                     | 2.18        | 0310598   | 3.87        | 53119  | 3.23        | 7006313                              | 2.70        | 0310715   | 9.35        | 7005497                            | 5.72        |
| 19/64" | 0.296875" | 1.5625"     | 2.75"         | 0355019                                     | 2.36        | 0310599   | 4.11        | 53120  | 3.44        | 7006314                              | 3.10        | 0310716   | 9.57        | 7005498                            | 6.46        |
| 5/16"  | 0.3125"   | 1.625"      | 2.8125"       | 0355020                                     | 2.43        | 0310600   | 4.50        | 53121  | 3.76        | 7006315                              | 3.26        | 0310717   | 9.90        | 7005499                            | 6.98        |
| 21/64" | 0.328125" | 1.6875"     | 2.9375"       | 0355021                                     | 3.11        | 0310601   | 4.86        | 53122  | 4.06        | 7006316                              | 3.63        | 0310718   | 11.42       | 7005500                            | 7.85        |
| 11/32" | 0.34375"  | 1.6875"     | 3"            | 0355022                                     | 3.35        | 0310602   | 5.48        | 53123  | 4.57        | 7006317                              | 4.01        | 0310719   | 12.00       | 7005501                            | 8.69        |

The : symbol after a price denotes that it is a Direct Ship Product (DSP) and shipping, availability & lead times may vary.

# HSS DRILL BITS

## HSS Drill Bits Cont.

### 135° Black + TiN Screw Machine Cont.

Cutting Tools



#### Fractional Sizes Cont.

| Size   | Decimal   | Flute Lgth. | Overall Lgth. | Cle-Line Series 1896 Black 135° |             | Norseman Type 135 AG Magnum Super Premium Black and Gold 135° |             | Norseman Type 135 Surface Treated 135° |             | CL Series 159 Black 135° |             | Norseman Type 135TiN Coated 135° |             | CL Series 2159 TN 135° |             |
|--------|-----------|-------------|---------------|---------------------------------|-------------|---|-------------|--|-------------|--------------------------|-------------|----------------------------------|-------------|------------------------|-------------|
|        |           |             |               | Part No.                        | Price /Each | Part No.  | Price /Each | Part No.                               | Price /Each | Part No.                 | Price /Each | Part No.                         | Price /Each | Part No.               | Price /Each |
| 23/64" | 0.359375" | 1.75"       | 3.0625"       | 0355023                         | 3.65        | 0310603   | 6.38        | 53124                                  | 5.33        | 7006318                  | 4.59        | 0310720                          | 12.79       | 7005502                | \$10.01     |
| 3/8"   | 0.375"    | 1.8125"     | 3.125"        | 0355148                         | 3.71        | 0310604   | 6.70        | 53125                                  | 5.60        | 7006319                  | 4.82        | 0310721                          | 13.12       | 7005503                | 10.53       |
| 25/64" | 0.390625" | 1.875"      | 3.25"         | 0355149                         | 4.32        | 0310605   | 7.53        | 53126                                  | 6.29        | 7006320                  | 5.50        | 0310722                          | 15.00       | 7005504                | 11.95       |
| 13/32" | 0.40625"  | 1.9375"     | 3.3125"       | 0355150                         | 4.43        | 0310606   | 7.97        | 53127                                  | 6.65        | 7006321                  | 5.72        | 0310723                          | 15.26       | 7005505                | 12.11       |
| 27/64" | 0.421875" | 2"          | 3.375"        | 0355151                         | 4.79        | 0310607   | 8.66        | 53128                                  | 7.23        | 7006322                  | 6.30        | 0310724                          | 15.95       | 7005506                | 13.50       |
| 7/16"  | 0.4375"   | 2.0625"     | 3.4375"       | 0355152                         | 4.93        | 0310608   | 8.85        | 53129                                  | 7.39        | 7006323                  | 6.39        | 0310725                          | 16.17       | 7005507                | 13.57       |
| 29/64" | 0.453125" | 2.125"      | 3.5625"       | 0355153                         | 5.65        | 0310609   | 10.49       | 53130                                  | 8.77        | 7006324                  | 7.79        | 0310726                          | 18.71       | 7005508                | 16.25       |
| 15/32" | 0.46875"  | 2.125"      | 3.625"        | 0355154                         | 6.01        | 0310610   | 11.15       | 53131                                  | 9.31        | 7006325                  | 8.24        | 0310727                          | 19.18       | 7005509                | 17.28       |
| 31/64" | 0.484375" | 2.1875"     | 3.6875"       | 0355155                         | 6.26        | 0310611   | 11.46       | 53132                                  | 9.57        | 7006326                  | 8.46        | 0310728                          | 19.54       | 7005510                | 17.44       |
| 1/2"   | 0.5"      | 2.25"       | 3.75"         | 0355156                         | 6.32        | 0310612   | 11.46       | 53133                                  | 9.57        | 7006327                  | 8.53        | 0310729                          | 19.54       | 7005511                | 17.51       |



#### Fractional Sets

| Type | Contents   | Part No. | Price /Each |
|------|--|----------|-------------|
| 1896 | 1/16-3/8 x 1/64 21 pc                                      | 7012757  | \$48.79     |
| 1896 | 1/16-1/2 x 1/64 29 pc                                      | 7012758  | 91.73       |
| 1896 | 5 Carbon Plg Hand Taps & 5 HD Screw Mach Drills, 10 pc Set | 7012774  | 49.55       |
| 159  | 1/16-1/2 x 1/64 29 pc                                      | 7007261  | 111.60      |
| 159  | 1/16-3/8 x 1/64 21 pc                                      | 7007262  | 66.42       |
| 159  | 1/16-1/2 x 1/32 15 pc                                      | 0357002  | 46.80       |



#### Wire Sets

| Type | Contents    | Part No. | Price /Each |
|------|-------------|----------|-------------|
| 1896 | #1-#60 60pc | 7012759  | \$80.43     |
| 159  | #1-#60 60pc | 7007263  | 107.59      |



#### Letter Sizes

| Size  | Decimal | Flute Lgth. | Overall Lgth. | Norseman Type 135 AG Magnum Super Premium Black and Gold 135° |             | CL Series 159 Black 135° |             | CL Series 2159 TN 135° |             |
|-------|---------|-------------|---------------|---|-------------|--------------------------|-------------|------------------------|-------------|
|       |         |             |               | Part No.  | Price /Each | Part No.                 | Price /Each | Part No.               | Price /Each |
| Ltr A | 0.234"  | 1.3125"     | 2.4375"       | 0310613   | \$3.46      | 0356257                  | 1.85        | 7005512                | \$4.75      |
| Ltr B | 0.238"  | 1.375"      | 2.5"          | 0310614   | 3.46        | 0356258                  | 1.85        | 7005513                | 4.97        |
| Ltr C | 0.242"  | 1.375"      | 2.5"          | 0310615   | 3.46        | 0356259                  | 1.85        | 7005514                | 5.04        |
| Ltr D | 0.246"  | 1.375"      | 2.5"          | 0310616   | 3.46        | 0356260                  | 1.85        | 7005515                | 5.11        |
| Ltr E | 0.25"   | 1.375"      | 2.5"          | 0310617   | 3.07        |                          |             |                        |             |
| Ltr F | 0.257"  | 1.4375"     | 2.625"        | 0310618   | 3.79        | 7006311                  | 2.50        | 7005516                | 5.22        |
| Ltr G | 0.261"  | 1.4375"     | 2.625"        | 0310619   | 4.00        | 0356261                  | 2.12        | 7005517                | 5.50        |
| Ltr H | 0.266"  | 1.5"        | 2.6875"       | 0310620   | 4.00        | 0356262                  | 2.20        | 7005518                | 5.75        |
| Ltr I | 0.272"  | 1.5"        | 2.6875"       | 0310621   | 4.00        | 0356263                  | 2.24        | 7005519                | 5.88        |
| Ltr J | 0.277"  | 1.5"        | 2.6875"       | 0310622   | 4.29        | 0356264                  | 2.37        | 7005520                | 5.97        |
| Ltr K | 0.2812" | 1.5"        | 2.6875"       | 0310623   | 4.62        | 0356265                  | 2.56        | 7005521                | 5.97        |
| Ltr L | 0.29"   | 1.5625"     | 2.75"         | 0310624   | 4.62        | 0356266                  | 2.57        | 7005522                | 6.52        |
| Ltr M | 0.295"  | 1.5625"     | 2.75"         | 0310625   | 5.09        | 0356267                  | 2.77        | 7005523                | 6.75        |
| Ltr N | 0.302"  | 1.625"      | 2.8125"       | 0310626   | 5.09        | 0356268                  | 2.84        | 7005524                | 7.16        |
| Ltr O | 0.316"  | 1.6875"     | 2.9375"       | 0310627   | 5.09        | 0356269                  | 2.88        | 7005525                | 7.72        |
| Ltr P | 0.323"  | 1.6875"     | 2.9375"       | 0310628   | 5.62        | 0356270                  | 3.06        | 7005526                | 8.08        |
| Ltr Q | 0.332"  | 1.6875"     | 3"            | 0310629   | 5.62        | 0356271                  | 3.09        | 7005527                | 8.62        |
| Ltr R | 0.339"  | 1.6875"     | 3"            | 0310630   | 5.62        | 0356272                  | 3.12        | 7005528                | 8.97        |
| Ltr S | 0.348"  | 1.75"       | 3.0625"       | 0310631   | 6.45        | 0356273                  | 3.55        | 7005529                | 10.07       |
| Ltr T | 0.358"  | 1.75"       | 3.0625"       | 0310632   | 7.56        | 0356274                  | 4.12        | 7005530                | 10.31       |
| Ltr U | 0.368"  | 1.8125"     | 3.125"        | 0310633   | 7.56        | 0356275                  | 4.23        | 7005531                | 10.94       |
| Ltr V | 0.377"  | 1.875"      | 3.25"         | 0310634   | 8.11        | 0356276                  | 4.48        | 7005532                | 11.49       |
| Ltr W | 0.386"  | 1.875"      | 3.25"         | 0310635   | 8.45        | 0356277                  | 4.59        | 7005533                | 11.65       |
| Ltr X | 0.397"  | 1.9375"     | 3.3125"       | 0310636   | 9.89        | 0356278                  | 5.36        | 7005534                | 12.13       |
| Ltr Y | 0.404"  | 1.9375"     | 3.3125"       | 0310637   | 11.74       | 0356279                  | 6.33        | 7005535                | 12.63       |
| Ltr Z | 0.413"  | 2"          | 3.375"        | 0310638   | 11.74       | 0356280                  | 6.46        | 7005536                | 13.37       |

## HSS Drill Bits Cont. 135° Black + TiN Screw Machine Cont.



| Wire Sizes |         |             |               | Cle-Line Series 1896 Black 135° |             | Norseman Type 135 AG Magnum Super Premium Black and Gold 135° |             | Norseman Type 135 Surface Treated 135° |             | CL Series 159 Black 135° |             | Norseman Type 135TN TiN Coated 135° |             | CL Series 2159 TN 135° |             |
|------------|---------|-------------|---------------|---------------------------------|-------------|---|-------------|--|-------------|--------------------------|-------------|-------------------------------------|-------------|------------------------|-------------|
| Size       | Decimal | Flute Lgth. | Overall Lgth. | Part No.                        | Price /Each | Part No.  | Price /Each | Part No.                               | Price /Each | Part No.                 | Price /Each | Part No.                            | Price /Each | Part No.               | Price /Each |
| #1         | 0.228"  | 1.3125"     | 2.4375"       | 0355216                         | \$1.82      | 0310639   | \$3.34      | 0310519                                | \$2.55      | 7006308                  | \$2.22      | 0310730                             | \$6.57      | 7005597                | \$4.82      |
| #2         | 0.221"  | 1.3125"     | 2.4375"       | 0355215                         | 1.82        | 0310640   | 3.34        | 0310520                                | 2.55        | 7006307                  | 2.22        | 0310731                             | 6.57        | 7005596                | 4.82        |
| #3         | 0.213"  | 1.25"       | 2.375"        | 0355214                         | 1.71        | 0310641   | 3.05        | 0310521                                | 2.55        | 7006305                  | 2.14        | 0310732                             | 6.35        | 7005595                | 4.60        |
| #4         | 0.209"  | 1.25"       | 2.375"        | 0355213                         | 1.71        | 0310642   | 3.05        | 0310522                                | 2.55        | 7006304                  | 2.14        | 0310733                             | 6.35        | 7005594                | 4.60        |
| #5         | 0.2055" | 1.25"       | 2.375"        | 0355212                         | 1.71        | 0310643   | 3.05        | 0310523                                | 2.55        | 7006303                  | 2.14        | 0310734                             | 6.35        | 7005593                | 4.60        |
| #6         | 0.204"  | 1.25"       | 2.375"        | 0355211                         | 1.71        | 0310644   | 3.05        | 0310524                                | 2.55        | 7006302                  | 2.14        | 0310735                             | 6.35        | 7005592                | 4.60        |
| #7         | 0.201"  | 1.1875"     | 2.25"         | 0355210                         | 1.49        | 0310645   | 2.71        | 0310525                                | 2.06        | 7006300                  | 1.70        | 0310736                             | 5.98        | 7005591                | 4.31        |
| #8         | 0.199"  | 1.1875"     | 2.25"         | 0355209                         | 1.49        | 0310646   | 2.71        | 0310526                                | 2.06        | 7006299                  | 1.70        | 0310737                             | 5.98        | 7005590                | 4.24        |
| #9         | 0.196"  | 1.1875"     | 2.25"         | 0355208                         | 1.49        | 0310647   | 2.71        | 0310527                                | 2.06        | 7006298                  | 1.70        | 0310738                             | 5.98        | 7005589                | 4.24        |
| #10        | 0.1935" | 1.1875"     | 2.25"         | 0355207                         | 1.47        | 0310648   | 2.71        | 0310528                                | 2.06        | 7006297                  | 1.72        | 0310739                             | 5.98        | 7005588                | 4.24        |
| #11        | 0.191"  | 1.1875"     | 2.25"         | 0355206                         | 1.47        | 0310649   | 2.71        | 0310529                                | 2.06        | 7006296                  | 1.72        | 0310740                             | 5.98        | 7005587                | 4.24        |
| #12        | 0.189"  | 1.1875"     | 2.25"         | 0355205                         | 1.49        | 0310650   | 2.71        | 0310530                                | 2.06        | 7006295                  | 1.72        | 0310741                             | 5.98        | 7005586                | 4.24        |
| #13        | 0.185"  | 1.125"      | 2.1875"       | 0355204                         | 1.49        | 0310651   | 2.54        | 0310531                                | 1.88        | 7006293                  | 1.72        | 0310742                             | 4.71        | 7005585                | 4.24        |
| #14        | 0.182"  | 1.125"      | 2.1875"       | 0355203                         | 1.49        | 0310652   | 2.54        | 0310532                                | 1.88        | 7006292                  | 1.72        | 0310743                             | 4.71        | 7005584                | 4.24        |
| #15        | 0.18"   | 1.125"      | 2.1875"       | 0355202                         | 1.49        | 0310653   | 2.54        | 0310533                                | 1.88        | 7006291                  | 1.72        | 0310744                             | 4.71        | 7005583                | 4.24        |
| #16        | 0.177"  | 1.125"      | 2.1875"       | 0355201                         | 1.47        | 0310654   | 2.54        | 0310534                                | 1.88        | 7006290                  | 1.72        | 0310745                             | 4.71        | 7005582                | 4.24        |
| #17        | 0.173"  | 1.125"      | 2.1875"       | 0355200                         | 1.47        | 0310655   | 2.54        | 0310535                                | 1.88        | 7006289                  | 1.72        | 0310746                             | 4.71        | 7005581                | 4.24        |
| #18        | 0.1695" | 1.0625"     | 2.125"        | 0355199                         | 1.29        | 0310656   | 2.28        | 0310536                                | 1.64        | 7006287                  | 1.49        | 0310747                             | 4.35        | 7005580                | 3.72        |
| #19        | 0.166"  | 1.0625"     | 2.125"        | 0355198                         | 1.29        | 0310657   | 2.28        | 0310537                                | 1.64        | 7006286                  | 1.49        | 0310748                             | 4.35        | 7005579                | 3.63        |
| #20        | 0.161"  | 1.0625"     | 2.125"        | 0355197                         | 1.22        | 0310658   | 2.28        | 0310538                                | 1.64        | 7006285                  | 1.49        | 0310749                             | 4.35        | 7005578                | 3.56        |
| #21        | 0.159"  | 1.0625"     | 2.125"        | 0355196                         | 1.22        | 0310659   | 2.17        | 0310539                                | 1.54        | 7006284                  | 1.43        | 0310750                             | 4.24        | 7005577                | 3.33        |
| #22        | 0.157"  | 1.0625"     | 2.125"        | 0355195                         | 1.22        | 0310660   | 2.17        | 0310540                                | 1.54        | 7006283                  | 1.43        | 0310751                             | 4.24        | 7005576                | 3.33        |
| #23        | 0.154"  | 1"          | 2.0625"       | 0355194                         | 1.22        | 0310661   | 2.17        | 0310541                                | 1.54        | 7006281                  | 1.43        | 0310752                             | 4.24        | 7005575                | 3.33        |
| #24        | 0.152"  | 1"          | 2.0625"       | 0355193                         | 1.22        | 0310662   | 2.17        | 0310542                                | 1.54        | 7006280                  | 1.43        | 0310753                             | 4.24        | 7005574                | 3.33        |
| #25        | 0.1495" | 1"          | 2.0625"       | 0355192                         | 1.22        | 0310663   | 2.07        | 0310543                                | 1.54        | 7006279                  | 1.42        | 0310754                             | 4.24        | 7005573                | 3.33        |
| #26        | 0.147"  | 1"          | 2.0625"       | 0355191                         | 1.22        | 0310664   | 2.07        | 0310544                                | 1.54        | 7006278                  | 1.42        | 0310755                             | 4.24        | 7005572                | 3.33        |
| #27        | 0.144"  | 1"          | 2.0625"       | 0355190                         | 1.22        | 0310665   | 2.07        | 0310545                                | 1.54        | 7006277                  | 1.42        | 0310756                             | 4.24        | 7005571                | 3.34        |
| #28        | 0.1405" | 0.9375"     | 1.9375"       | 0355189                         | 1.04        | 0310666   | 1.86        | 0310546                                | 1.36        | 7006275                  | 1.25        | 0310757                             | 4.06        | 7005570                | 3.10        |
| #29        | 0.136"  | 0.9375"     | 1.9375"       | 0355188                         | 1.04        | 0310667   | 1.86        | 0310547                                | 1.36        | 7006274                  | 1.25        | 0310758                             | 4.06        | 7005569                | 3.04        |
| #30        | 0.1285" | 0.9375"     | 1.9375"       | 0355187                         | 0.97        | 0310668   | 1.86        | 53608                                  | 1.36        | 7006273                  | 1.25        | 0310759                             | 4.06        | 7005568                | 3.04        |
| #31        | 0.12"   | 0.875"      | 1.875"        | 0355186                         | 0.97        | 0310669   | 1.80        | 0310548                                | 1.25        | 7006271                  | 1.25        | 0310760                             | 3.47        | 7005567                | 3.04        |
| #32        | 0.116"  | 0.875"      | 1.875"        | 0355185                         | 0.97        | 0310670   | 1.80        | 0310549                                | 1.25        | 7006270                  | 1.25        | 0310761                             | 3.47        | 7005566                | 3.04        |
| #33        | 0.113"  | 0.875"      | 1.875"        | 0355184                         | 0.97        | 0310671   | 1.80        | 0310550                                | 1.25        | 7006269                  | 1.25        | 0310762                             | 3.47        | 7005565                | 3.04        |
| #34        | 0.111"  | 0.875"      | 1.875"        | 0355183                         | 0.97        | 0310672   | 1.80        | 0310551                                | 1.25        | 7006268                  | 1.25        | 0310763                             | 3.47        | 7005564                | 3.04        |
| #35        | 0.11"   | 0.875"      | 1.875"        | 0355182                         | 0.97        | 0310673   | 1.77        | 0310552                                | 1.20        | 7006267                  | 1.25        | 0310764                             | 3.47        | 7005563                | 3.04        |
| #36        | 0.1065" | 0.8125"     | 1.8125"       | 0355181                         | 0.97        | 0310674   | 1.77        | 0310553                                | 1.20        | 7006265                  | 1.25        | 0310765                             | 3.47        | 7005562                | 3.04        |
| #37        | 0.104"  | 0.8125"     | 1.8125"       | 0355180                         | 0.97        | 0310675   | 1.77        | 0310554                                | 1.20        | 7006264                  | 1.25        | 0310766                             | 3.47        | 7005561                | 3.04        |
| #38        | 0.1015" | 0.8125"     | 1.8125"       | 0355179                         | 0.97        | 0310676   | 1.77        | 0310555                                | 1.20        | 7006263                  | 1.25        | 0310767                             | 3.47        | 7005560                | 3.04        |
| #39        | 0.0995" | 0.8125"     | 1.8125"       | 0355178                         | 0.97        | 0310677   | 1.77        | 0310556                                | 1.20        | 7006262                  | 1.25        | 0310768                             | 3.47        | 7005559                | 3.04        |
| #40        | 0.098"  | 0.8125"     | 1.8125"       | 0355177                         | 0.93        | 0310678   | 1.77        | 0310557                                | 1.20        | 7006261                  | 1.25        | 0310769                             | 3.47        | 7005558                | 3.02        |
| #41        | 0.096"  | 0.8125"     | 1.8125"       | 0355176                         | 0.93        | 0310679   | 1.77        | 0310558                                | 1.20        | 7006260                  | 1.25        | 0310770                             | 3.47        | 7005557                | 3.02        |
| #42        | 0.0935" | 0.75"       | 1.75"         | 0355175                         | 0.93        | 0310680   | 1.77        | 0310559                                | 1.20        | 7006258                  | 1.25        | 0310771                             | 3.47        | 7005556                | 3.02        |
| #43        | 0.089"  | 0.75"       | 1.75"         | 0355174                         | 0.93        | 0310681   | 1.77        | 0310560                                | 1.20        | 7006257                  | 1.25        | 0310772                             | 3.47        | 7005555                | 3.02        |
| #44        | 0.086"  | 0.75"       | 1.75"         | 0355173                         | 0.93        | 0310682   | 1.77        | 0310561                                | 1.20        | 7006256                  | 1.25        | 0310773                             | 3.47        | 7005554                | 3.02        |
| #45        | 0.082"  | 0.75"       | 1.75"         | 0355172                         | 0.93        | 0310683   | 1.77        | 0310562                                | 1.20        | 7006255                  | 1.25        | 0310774                             | 3.47        | 7005553                | 3.02        |
| #46        | 0.081"  | 0.75"       | 1.75"         | 0355171                         | 0.93        | 0310684   | 1.77        | 0310563                                | 1.20        | 7006254                  | 1.25        | 0310775                             | 3.47        | 7005552                | 3.02        |
| #47        | 0.0785" | 0.75"       | 1.75"         | 0355170                         | 0.93        | 0310685   | 1.77        | 0310564                                | 1.20        | 7006253                  | 1.25        | 0310776                             | 3.47        | 7005551                | 3.02        |
| #48        | 0.076"  | 0.6875"     | 1.6875"       | 0355169                         | 0.93        | 0310686   | 1.77        | 0310565                                | 1.20        | 7006251                  | 1.25        | 0310777                             | 3.47        | 7005550                | 3.02        |
| #49        | 0.073"  | 0.6875"     | 1.6875"       | 0355168                         | 0.93        | 0310687   | 1.77        | 0310566                                | 1.20        | 7006250                  | 1.25        | 0310778                             | 3.47        | 7005549                | 3.02        |
| #50        | 0.07"   | 0.6875"     | 1.6875"       | 0355167                         | 0.93        | 0310688   | 1.77        | 0310567                                | 1.20        | 7006249                  | 1.25        | 0310779                             | 3.47        | 7005548                | 2.97        |
| #51        | 0.067"  | 0.6875"     | 1.6875"       | 0355166                         | 0.93        | 0310689   | 1.77        | 0310568                                | 1.20        | 7006248                  | 1.25        | 0310780                             | 3.47        | 7005547                | 2.97        |
| #52        | 0.0635" | 0.6875"     | 1.6875"       | 0355165                         | 0.93        | 0310690   | 1.77        | 0310569                                | 1.20        | 7006247                  | 1.25        | 0310781                             | 3.47        | 7005546                | 2.97        |
| #53        | 0.0595" | 0.625"      | 1.625"        | 0355164                         | 0.93        | 0310691   | 1.77        | 0310570                                | 1.35        | 7006245                  | 1.25        | 0310782                             | 3.47        | 7005544                | 2.97        |
| #54        | 0.055"  | 0.625"      | 1.625"        | 0355163                         | 0.93        | 0310692   | 1.77        | 0310571                                | 1.35        | 7006244                  | 1.25        | 0310783                             | 3.47        | 7005543                | 2.97        |
| #55        | 0.052"  | 0.625"      | 1.625"        | 0355162                         | 0.93        | 0310693   | 1.77        | 0310572                                | 1.35        | 7006243                  | 1.25        | 0310784                             | 3.47        | 7005542                | 2.97        |
| #56        | 0.0465" | 0.5"        | 1.375"        | 0355161                         | 0.93        | 0310694   | 1.77        | 0310573                                | 1.35        | 7006241                  | 1.25        | 0310785                             | 3.47        | 7005541                | 2.97        |
| #57        | 0.043"  | 0.5"        | 1.375"        | 0355160                         | 0.95        | 0310695   | 1.77        | 0310574                                | 1.37        | 7006240                  | 1.25        | 0310786                             | 3.47        | 7005540                | 2.97        |
| #58        | 0.042"  | 0.5"        | 1.375"        | 0355159                         | 0.95        | 0310696   | 1.77        | 0310575                                | 1.37        | 7006239                  | 1.25        | 0310787                             | 3.47        | 7005539                | 2.97        |
| #59        | 0.041"  | 0.5"        | 1.375"        | 0355158                         | 0.95        | 0310697   | 1.77        | 0310576                                | 1.37        | 7006238                  | 1.25        | 0310788                             | 3.47        | 7005538                | 2.97        |
| #60        | 0.04"   | 0.5"        | 1.375"        | 0355157                         | 0.95        | 0310698   | 1.77        | 0310577                                | 1.37        | 7006237                  | 1.21        | 0310789                             | 3.47        | 7005537                | 2.97        |

# HSS DRILL BITS

## HSS Drill Bits Cont.

Cutting Tools

# FASTENAL

### 135° Split Point Fastenal Premium Black Oxide

Jobbers Length Metric -  
Heavy Duty - Black Oxide

Extreme wear resistant.

Long lasting.



| Part No. | Size | Decimal | Overall Lgth. | Price /Each |
|----------|------|---------|---------------|-------------|
| 0346297  | 0.70 | .0276   | 35            | \$1.19      |
| 0346298  | 0.80 | .0315   | 38            | 1.19        |
| 0346299  | 0.85 | .0335   | 38            | 1.19        |
| 0346300  | 0.90 | .0354   | 38            | 1.19        |
| 0346301  | 0.95 | .0374   | 38            | 1.19        |
| 0346302  | 0.98 | .0386   | 41            | 1.19        |
| 0346303  | 1.00 | .0394   | 41            | 1.19        |
| 0346304  | 1.05 | .0413   | 44            | 1.19        |
| 0346305  | 1.10 | .0433   | 44            | 1.19        |
| 0346306  | 1.15 | .0453   | 48            | 1.19        |
| 0346307  | 1.20 | .0472   | 48            | 1.19        |
| 0346308  | 1.25 | .0492   | 48            | 1.19        |
| 0346309  | 1.30 | .0512   | 48            | 1.19        |
| 0346310  | 1.35 | .0531   | 48            | 1.19        |
| 0346311  | 1.40 | .0551   | 48            | 1.19        |
| 0346312  | 1.45 | .0571   | 48            | 1.19        |
| 0346313  | 1.50 | .0591   | 48            | 1.19        |
| 0346314  | 1.60 | .0630   | 51            | 1.26        |
| 0346315  | 1.65 | .0650   | 51            | 1.26        |
| 0346316  | 1.70 | .0669   | 51            | 1.26        |
| 0346317  | 1.75 | .0689   | 51            | 1.26        |
| 0346318  | 1.80 | .0709   | 51            | 1.26        |
| 0346319  | 1.90 | .0748   | 51            | 1.26        |
| 0346320  | 2.00 | .0787   | 51            | 1.26        |
| 0346321  | 2.05 | .0807   | 54            | 1.32        |
| 0346322  | 2.10 | .0827   | 54            | 1.32        |
| 0346323  | 2.20 | .0866   | 57            | 1.32        |
| 0346324  | 2.30 | .0906   | 57            | 1.32        |
| 0346325  | 2.40 | .0945   | 60            | 1.32        |
| 0346326  | 2.50 | .0984   | 60            | 1.32        |
| 0346327  | 2.60 | .1024   | 64            | 1.33        |
| 0346328  | 2.70 | .1063   | 64            | 1.33        |
| 0346329  | 2.80 | .1102   | 67            | 1.33        |
| 0346330  | 2.90 | .1142   | 70            | 1.33        |
| 0346331  | 3.00 | .1181   | 70            | 1.33        |
| 0346332  | 3.10 | .1220   | 70            | 1.34        |
| 0346333  | 3.20 | .1260   | 70            | 1.42        |
| 0346334  | 3.30 | .1299   | 73            | 1.42        |
| 0346335  | 3.40 | .1339   | 73            | 1.42        |
| 0346336  | 3.50 | .1378   | 73            | 1.46        |
| 0346337  | 3.60 | .1417   | 76            | 1.46        |
| 0346338  | 3.70 | .1457   | 76            | 1.46        |
| 0346339  | 3.80 | .1496   | 76            | 1.51        |
| 0346340  | 3.90 | .1535   | 79            | 1.51        |
| 0346341  | 4.00 | .1575   | 83            | 1.52        |
| 0346342  | 4.10 | .1614   | 83            | 1.60        |
| 0346343  | 4.20 | .1654   | 83            | 1.62        |
| 0346344  | 4.30 | .1693   | 83            | 1.62        |
| 0346345  | 4.40 | .1732   | 86            | 1.78        |
| 0346346  | 4.50 | .1772   | 86            | 1.87        |
| 0346347  | 4.60 | .1811   | 86            | 1.93        |
| 0346348  | 4.70 | .1850   | 89            | 2.00        |
| 0346349  | 4.80 | .1890   | 89            | 2.04        |
| 0346350  | 4.90 | .1929   | 92            | 2.12        |
| 0346351  | 5.00 | .1969   | 92            | 2.12        |
| 0346352  | 5.10 | .2008   | 92            | 2.17        |
| 0346353  | 5.20 | .2047   | 95            | 2.22        |
| 0346354  | 5.30 | .2087   | 95            | 2.27        |
| 0346355  | 5.40 | .2126   | 95            | 2.31        |
| 0346356  | 5.50 | .2165   | 95            | 2.38        |

| Part No. | Size  | Decimal | Overall Lgth. | Price /Each |
|----------|-------|---------|---------------|-------------|
| 0346357  | 5.60  | .2205   | 98            | \$2.49      |
| 0346358  | 5.70  | .2244   | 98            | 2.53        |
| 0346359  | 5.80  | .2283   | 98            | 2.55        |
| 0346360  | 5.90  | .2323   | 98            | 2.59        |
| 0346361  | 6.00  | .2362   | 102           | 2.66        |
| 0346362  | 6.10  | .2402   | 102           | 2.73        |
| 0346363  | 6.20  | .2441   | 102           | 2.79        |
| 0346364  | 6.30  | .2480   | 102           | 2.87        |
| 0346365  | 6.40  | .2520   | 105           | 2.94        |
| 0346366  | 6.50  | .2559   | 105           | 3.00        |
| 0346367  | 6.60  | .2598   | 105           | 3.10        |
| 0346368  | 6.70  | .2638   | 105           | 3.19        |
| 0346369  | 6.80  | .2677   | 105           | 3.28        |
| 0346370  | 6.90  | .2717   | 105           | 3.40        |
| 0346371  | 7.00  | .2756   | 105           | 3.50        |
| 0346372  | 7.10  | .2795   | 108           | 3.64        |
| 0346373  | 7.20  | .2835   | 108           | 3.71        |
| 0346374  | 7.30  | .2874   | 108           | 3.78        |
| 0346375  | 7.40  | .2913   | 111           | 3.85        |
| 0346376  | 7.50  | .2953   | 111           | 3.96        |
| 0346377  | 7.60  | .2992   | 111           | 4.04        |
| 0346378  | 7.70  | .3031   | 114           | 4.18        |
| 0346379  | 7.80  | .3071   | 114           | 4.18        |
| 0346380  | 7.90  | .3110   | 114           | 4.26        |
| 0346381  | 8.00  | .3150   | 114           | 4.36        |
| 0346382  | 8.10  | .3189   | 117           | 4.71        |
| 0346383  | 8.20  | .3228   | 117           | 4.71        |
| 0346384  | 8.30  | .3268   | 117           | 4.80        |
| 0346385  | 8.40  | .3307   | 121           | 4.80        |
| 0346386  | 8.50  | .3346   | 121           | 4.90        |
| 0346387  | 8.60  | .3386   | 121           | 4.97        |
| 0346388  | 8.70  | .3425   | 121           | 5.15        |
| 0346389  | 8.80  | .3465   | 124           | 5.32        |
| 0346390  | 8.90  | .3504   | 124           | 5.63        |
| 0346391  | 9.00  | .3543   | 124           | 5.63        |
| 0346392  | 9.10  | .3583   | 124           | 6.13        |
| 0346393  | 9.20  | .3622   | 127           | 6.13        |
| 0346394  | 9.30  | .3661   | 127           | 6.13        |
| 0346395  | 9.40  | .3701   | 127           | 6.13        |
| 0346396  | 9.50  | .3740   | 127           | 6.30        |
| 0346397  | 9.60  | .3780   | 130           | 6.39        |
| 0346398  | 9.70  | .3819   | 130           | 6.39        |
| 0346399  | 9.80  | .3858   | 130           | 6.66        |
| 0346400  | 9.90  | .3898   | 130           | 6.66        |
| 0346401  | 10.00 | .3937   | 130           | 6.81        |
| 0346402  | 10.10 | .3976   | 130           | 6.84        |
| 0346403  | 10.20 | .4016   | 133           | 7.31        |
| 0346404  | 10.30 | .4055   | 133           | 7.63        |
| 0346405  | 10.40 | .4094   | 133           | 7.77        |
| 0346406  | 10.50 | .4134   | 133           | 7.91        |
| 0346407  | 10.60 | .4173   | 133           | 8.02        |
| 0346408  | 10.70 | .4213   | 133           | 8.16        |
| 0346409  | 10.80 | .4252   | 103           | 8.21        |
| 0346410  | 10.90 | .4291   | 103           | 8.26        |
| 0346411  | 11.00 | .4331   | 103           | 8.33        |
| 0346412  | 11.10 | .4370   | 103           | 8.39        |
| 0346413  | 11.20 | .4409   | 106           | 8.52        |
| 0346414  | 11.30 | .4449   | 106           | 8.68        |
| 0346415  | 11.40 | .4488   | 106           | 8.75        |
| 0346416  | 11.50 | .4528   | 106           | 8.89        |
| 0346417  | 11.60 | .4567   | 106           | 9.03        |
| 0346418  | 11.70 | .4606   | 110           | 9.15        |
| 0346419  | 11.80 | .4646   | 110           | 9.28        |
| 0346420  | 11.90 | .4685   | 110           | 9.41        |
| 0346421  | 12.00 | .4724   | 111           | 9.47        |
| 0346422  | 12.10 | .4764   | 111           | 9.56        |
| 0346423  | 12.20 | .4803   | 111           | 9.66        |
| 0346424  | 12.30 | .4843   | 111           | 9.77        |
| 0346425  | 12.40 | .4882   | 111           | 9.77        |
| 0346426  | 12.50 | .4921   | 114           | 10.04       |
| 0346427  | 12.60 | .4961   | 114           | 9.97        |
| 0346428  | 12.70 | .5000   | 114           | 10.21       |
| 0346429  | 12.80 | .5039   | 114           | 10.60       |
| 0346430  | 12.90 | .5079   | 114           | 10.60       |
| 0346431  | 13.00 | .5118   | 114           | 11.49       |

### 135° Split Point Fastenal Premium Black and Gold

Jobbers Length Metric -  
Heavy Duty - Black and Gold

Extreme wear resistant.

Long lasting.



| Part No. | Size | Decimal | Overall Lgth. | Price /Each |
|----------|------|---------|---------------|-------------|
| 0345952  | 0.70 | .0276   | 35            | \$2.36      |
| 0345953  | 0.80 | .0315   | 38            | 2.36        |
| 0345954  | 0.85 | .0335   | 38            | 2.23        |
| 0345955  | 0.90 | .0354   | 38            | 1.72        |
| 0345956  | 0.95 | .0374   | 38            | 1.72        |
| 0345957  | 0.98 | .0386   | 41            | 1.72        |
| 0345958  | 1.00 | .0394   | 41            | 1.62        |
| 0345959  | 1.05 | .0413   | 44            | 1.62        |
| 0345960  | 1.10 | .0433   | 44            | 7.89        |
| 0345961  | 1.15 | .0453   | 48            | 1.62        |
| 0345962  | 1.20 | .0472   | 48            | 1.72        |
| 0345963  | 1.25 | .0492   | 48            | 1.62        |
| 0345964  | 1.30 | .0512   | 48            | 9.08        |
| 0345965  | 1.35 | .0531   | 48            | 1.62        |
| 0345966  | 1.40 | .0551   | 48            | 1.62        |
| 0345967  | 1.45 | .0571   | 48            | 1.62        |
| 0345968  | 1.50 | .0591   | 48            | 1.62        |
| 0345969  | 1.60 | .0630   | 51            | 9.13        |
| 0345970  | 1.65 | .0650   | 51            | 1.62        |
| 0345971  | 1.70 | .0669   | 51            | 1.62        |
| 0345972  | 1.75 | .0689   | 51            | 1.62        |
| 0345973  | 1.80 | .0709   | 51            | 9.48        |
| 0345974  | 1.90 | .0748   | 51            | 9.64        |
| 0345975  | 2.00 | .0787   | 51            | 1.42        |
| 0345976  | 2.05 | .0807   | 54            | 1.52        |
| 0345977  | 2.10 | .0827   | 54            | 1.52        |
| 0345978  | 2.20 | .0866   | 57            | 1.52        |
| 0345979  | 2.30 | .0906   | 57            | 1.52        |
| 0345980  | 2.40 | .0945   | 60            | 1.52        |
| 0345981  | 2.50 | .0984   | 60            | 1.52        |
| 0345982  | 2.60 | .1024   | 64            | 1.53        |
| 0345983  | 2.70 | .1063   | 64            | 1.53        |
| 0345984  | 2.80 | .1102   | 67            | 1.53        |
| 0345985  | 2.90 | .1142   | 70            | 1.42        |
| 0345986  | 3.00 | .1181   | 70            | 1.42        |
| 0345987  | 3.10 | .1220   | 70            | 1.55        |
| 0345988  | 3.20 | .1260   | 70            | 1.64        |
| 0345989  | 3.30 | .1299   | 73            | 1.64        |
| 0345990  | 3.40 | .1339   | 73            | 1.64        |
| 0345991  | 3.50 | .1378   | 73            | 1.68        |
| 0345992  | 3.60 | .1417   | 76            | 1.68        |
| 0345993  | 3.70 | .1457   | 76            | 1.68        |
| 0345994  | 3.80 | .1496   | 76            | 1.75        |
| 0345995  | 3.90 | .1535   | 79            | 1.75        |
| 0345996  | 4.00 | .1575   | 83            | 1.76        |
| 0345997  | 4.10 | .1614   | 83            | 1.85        |
| 0345998  | 4.20 | .1654   | 83            | 1.88        |
| 0345999  | 4.30 | .1693   | 83            | 1.88        |
| 0346000  | 4.40 | .1732   | 86            | 2.06        |
| 0346001  | 4.50 | .1772   | 86            | 2.16        |
| 0346002  | 4.60 | .1811   | 86            | 2.22        |
| 0346003  | 4.70 | .1850   | 89            | 2.31        |
| 0346004  | 4.80 | .1890   | 89            | 2.36        |
| 0346005  | 4.90 | .1929   | 92            | 2.45        |
| 0346006  | 5.00 | .1969   | 92            | 2.45        |
| 0346007  | 5.10 | .2008   | 92            | 2.51        |
| 0346008  | 5.20 | .2047   | 95            | 2.56        |
| 0346009  | 5.30 | .2087   | 95            | 2.61        |
| 0346010  | 5.40 | .2126   | 95            | 2.67        |
| 0346011  | 5.50 | .2165   | 95            | 2.62        |
| 0346012  | 5.60 | .2205   | 98            | 2.92        |
| 0346013  | 5.70 | .2244   | 98            | 2.92        |
| 0346014  | 5.80 | .2283   | 98            | 2.95        |
| 0346015  | 5.90 | .2323   | 98            | 2.93        |
| 0346016  | 6.00 | .2362   | 102           | 2.93        |
| 0346017  | 6.10 | .2402   | 102           | 3.00        |
| 0346018  | 6.20 | .2441   | 102           | 3.22        |

## HSS Drill Bits Cont.



### Type 170-AG Drills Jobber's Length - Metric Heavy-Duty Super Premium 135° Split Point

Special Hi-Molybdenum tool steel. Precision ground point, flutes, body, clearance and drill diameter for the ultimate in accuracy and performance. Recommended for use in work hardening grades of stainless steel and other hard metal drilling applications.



| Part No. | Size  | Decimal | Overall Lgth. | Price /Each |
|----------|-------|---------|---------------|-------------|
| 0346019  | 6.30  | .2480   | 102           | \$3.22      |
| 0346020  | 6.40  | .2520   | 105           | 3.52        |
| 0346021  | 6.50  | .2559   | 105           | 3.47        |
| 0346022  | 6.60  | .2598   | 105           | 3.59        |
| 0346023  | 6.70  | .2638   | 105           | 3.52        |
| 0346024  | 6.80  | .2677   | 105           | 3.78        |
| 0346025  | 6.90  | .2717   | 105           | 3.84        |
| 0346026  | 7.00  | .2756   | 105           | 3.78        |
| 0346027  | 7.10  | .2795   | 108           | 4.22        |
| 0346028  | 7.20  | .2835   | 108           | 4.28        |
| 0346029  | 7.30  | .2874   | 108           | 4.36        |
| 0346030  | 7.40  | .2913   | 111           | 4.44        |
| 0346031  | 7.50  | .2953   | 111           | 4.39        |
| 0346032  | 7.60  | .2992   | 111           | 4.67        |
| 0346033  | 7.70  | .3031   | 114           | 4.82        |
| 0346034  | 7.80  | .3071   | 114           | 4.82        |
| 0346035  | 7.90  | .3110   | 114           | 4.92        |
| 0346036  | 8.00  | .3150   | 114           | 5.03        |
| 0346037  | 8.10  | .3189   | 117           | 5.44        |
| 0346038  | 8.20  | .3228   | 117           | 5.44        |
| 0346039  | 8.30  | .3268   | 117           | 5.54        |
| 0346040  | 8.40  | .3307   | 121           | 5.54        |
| 0346041  | 8.50  | .3346   | 121           | 5.70        |
| 0346042  | 8.60  | .3386   | 121           | 5.59        |
| 0346043  | 8.70  | .3425   | 121           | 5.94        |
| 0346044  | 8.80  | .3465   | 124           | 6.15        |
| 0346045  | 8.90  | .3504   | 124           | 6.49        |
| 0346046  | 9.00  | .3543   | 124           | 6.49        |
| 0346047  | 9.10  | .3583   | 124           | 7.08        |
| 0346048  | 9.20  | .3622   | 127           | 7.08        |
| 0346049  | 9.30  | .3661   | 127           | 7.08        |
| 0346050  | 9.40  | .3701   | 127           | 7.08        |
| 0346051  | 9.50  | .3740   | 127           | 6.86        |
| 0346052  | 9.60  | .3780   | 130           | 7.38        |
| 0346053  | 9.70  | .3819   | 130           | 7.38        |
| 0346054  | 9.80  | .3858   | 130           | 7.69        |
| 0346055  | 9.90  | .3898   | 130           | 7.69        |
| 0346056  | 10.00 | .3937   | 130           | 7.86        |
| 0346057  | 10.10 | .3976   | 130           | 7.89        |
| 0346058  | 10.20 | .4016   | 133           | 8.44        |
| 0346059  | 10.30 | .4055   | 133           | 9.08        |
| 0346060  | 10.40 | .4094   | 133           | 9.08        |
| 0346061  | 10.50 | .4134   | 133           | 9.08        |
| 0346062  | 10.60 | .4173   | 133           | 9.13        |
| 0346063  | 10.70 | .4213   | 133           | 9.48        |
| 0346064  | 10.80 | .4252   | 103           | 9.48        |
| 0346065  | 10.90 | .4291   | 103           | 9.64        |
| 0346066  | 11.00 | .4331   | 103           | 9.63        |
| 0346067  | 11.10 | .4370   | 103           | 9.69        |
| 0346068  | 11.20 | .4409   | 106           | 9.85        |
| 0346069  | 11.30 | .4449   | 106           | 10.11       |
| 0346070  | 11.40 | .4488   | 106           | 10.11       |
| 0346071  | 11.50 | .4528   | 106           | 10.42       |
| 0346072  | 11.60 | .4567   | 106           | 10.25       |
| 0346073  | 11.70 | .4606   | 110           | 10.57       |
| 0346074  | 11.80 | .4646   | 110           | 10.57       |
| 0346075  | 11.90 | .4685   | 110           | 10.87       |
| 0346076  | 12.00 | .4724   | 111           | 10.94       |
| 0346077  | 12.10 | .4764   | 111           | 10.57       |
| 0346078  | 12.20 | .4803   | 111           | 10.57       |
| 0346079  | 12.30 | .4843   | 111           | 11.28       |
| 0346080  | 12.40 | .4882   | 111           | 11.28       |
| 0346081  | 12.50 | .4921   | 114           | 11.59       |
| 0346082  | 12.60 | .4961   | 114           | 11.52       |
| 0346083  | 12.70 | .5000   | 114           | 11.79       |
| 0346084  | 12.80 | .5039   | 114           | 12.24       |
| 0346085  | 12.90 | .5079   | 114           | 12.24       |
| 0346086  | 13.00 | .5118   | 114           | 13.27       |

| Size (mm) | Decimal | Flute Lgth. (mm) | Overall Lgth. (mm) | Part No. | Pkg. Qty. | Price /Each |
|-----------|---------|------------------|--------------------|----------|-----------|-------------|
| 0.80      | 0.0315  | 13               | 35                 | 53439    | 10        | \$2.70      |
| 0.85      | 0.0335  | 16               | 38                 | 53440    | 10        | 2.55        |
| 0.90      | 0.0354  | 16               | 38                 | 53441    | 10        | 1.97        |
| 0.95      | 0.0374  | 16               | 38                 | 53442    | 10        | 1.97        |
| 0.98      | 0.0386  | 16               | 38                 | 0311035  | 10        | 1.97        |
| 1.00      | 0.0394  | 17               | 41                 | 53443    | 10        | 1.85        |
| 1.05      | 0.0413  | 17               | 41                 | 53444    | 10        | 1.85        |
| 1.10      | 0.0433  | 19               | 44                 | 53445    | 10        | 1.85        |
| 1.15      | 0.0453  | 19               | 44                 | 53446    | 10        | 1.85        |
| 1.20      | 0.0472  | 22               | 48                 | 53447    | 10        | 1.85        |
| 1.25      | 0.0492  | 22               | 48                 | 0311036  | 10        | 1.85        |
| 1.30      | 0.0512  | 22               | 48                 | 53448    | 10        | 1.85        |
| 1.35      | 0.0531  | 22               | 48                 | 53449    | 10        | 1.85        |
| 1.40      | 0.0551  | 22               | 48                 | 53450    | 10        | 1.85        |
| 1.45      | 0.0571  | 22               | 48                 | 53451    | 10        | 1.85        |
| 1.50      | 0.0591  | 22               | 48                 | 53452    | 10        | 1.85        |
| 1.60      | 0.0630  | 22               | 48                 | 53453    | 10        | 1.85        |
| 1.65      | 0.0650  | 25               | 51                 | 53454    | 10        | 1.85        |
| 1.70      | 0.0669  | 25               | 51                 | 53455    | 10        | 1.85        |
| 1.75      | 0.0689  | 25               | 51                 | 53456    | 10        | 1.85        |
| 1.80      | 0.0709  | 25               | 51                 | 53457    | 10        | 1.85        |
| 1.90      | 0.0748  | 25               | 51                 | 53458    | 10        | 1.85        |
| 2.00      | 0.0787  | 25               | 51                 | 53459    | 10        | 1.62        |
| 2.05      | 0.0807  | 29               | 54                 | 53460    | 10        | 1.73        |
| 2.10      | 0.0827  | 29               | 54                 | 0311037  | 10        | 1.73        |
| 2.20      | 0.0866  | 32               | 57                 | 0311038  | 10        | 1.73        |
| 2.30      | 0.0906  | 32               | 57                 | 0311039  | 10        | 1.73        |
| 2.40      | 0.0945  | 35               | 60                 | 0311040  | 10        | 1.73        |
| 2.50      | 0.0984  | 35               | 60                 | 53461    | 10        | 1.73        |
| 2.60      | 0.1024  | 37               | 64                 | 0311041  | 10        | 1.75        |
| 2.70      | 0.1063  | 37               | 64                 | 0311042  | 10        | 1.75        |
| 2.80      | 0.1102  | 38               | 67                 | 0311043  | 10        | 1.75        |
| 2.90      | 0.1142  | 41               | 70                 | 53462    | 10        | 1.62        |
| 3.00      | 0.1181  | 41               | 70                 | 53463    | 10        | 1.62        |
| 3.10      | 0.1220  | 41               | 70                 | 0311044  | 10        | 1.77        |
| 3.20      | 0.1260  | 41               | 70                 | 0311045  | 10        | 1.87        |
| 3.30      | 0.1299  | 45               | 73                 | 53464    | 10        | 1.87        |
| 3.40      | 0.1339  | 45               | 73                 | 0311046  | 10        | 1.87        |
| 3.50      | 0.1378  | 45               | 73                 | 53465    | 10        | 1.92        |
| 3.60      | 0.1417  | 48               | 76                 | 0311047  | 10        | 1.92        |
| 3.70      | 0.1457  | 48               | 76                 | 0311048  | 10        | 1.92        |
| 3.80      | 0.1496  | 48               | 76                 | 0311049  | 10        | 1.99        |
| 3.90      | 0.1535  | 51               | 79                 | 0311050  | 10        | 1.99        |
| 4.00      | 0.1575  | 54               | 83                 | 53466    | 10        | 2.01        |
| 4.10      | 0.1614  | 54               | 83                 | 0311051  | 10        | 2.12        |
| 4.20      | 0.1654  | 54               | 83                 | 53467    | 10        | 2.14        |
| 4.30      | 0.1693  | 54               | 83                 | 0311052  | 10        | 2.14        |
| 4.40      | 0.1732  | 56               | 86                 | 0311053  | 10        | 2.35        |
| 4.50      | 0.1772  | 56               | 86                 | 53468    | 10        | 2.47        |
| 4.60      | 0.1811  | 56               | 86                 | 0311054  | 10        | 2.54        |
| 4.70      | 0.1850  | 59               | 89                 | 0311055  | 10        | 2.64        |
| 4.80      | 0.1890  | 59               | 89                 | 0311056  | 10        | 2.70        |
| 4.90      | 0.1929  | 62               | 92                 | 0311057  | 10        | 2.80        |
| 5.00      | 0.1969  | 62               | 92                 | 53469    | 10        | 2.80        |
| 5.10      | 0.2008  | 62               | 92                 | 0311058  | 10        | 2.87        |
| 5.20      | 0.2047  | 64               | 95                 | 0311059  | 10        | 2.92        |
| 5.30      | 0.2087  | 64               | 95                 | 0311060  | 10        | 2.99        |

| Size (mm) | Decimal | Flute Lgth. (mm) | Overall Lgth. (mm) | Part No. | Pkg. Qty. | Price /Each |
|-----------|---------|------------------|--------------------|----------|-----------|-------------|
| 5.40      | 0.2126  | 64               | 95                 | 0311061  | 10        | \$3.05      |
| 5.50      | 0.2165  | 64               | 95                 | 53470    | 10        | 3.00        |
| 5.60      | 0.2205  | 67               | 98                 | 0311062  | 10        | 3.33        |
| 5.70      | 0.2244  | 67               | 98                 | 0311063  | 10        | 3.33        |
| 5.80      | 0.2283  | 67               | 98                 | 0311064  | 10        | 3.37        |
| 5.90      | 0.2323  | 67               | 98                 | 0311065  | 10        | 3.34        |
| 6.00      | 0.2362  | 70               | 102                | 53471    | 10        | 3.34        |
| 6.10      | 0.2402  | 70               | 102                | 0311066  | 10        | 3.43        |
| 6.20      | 0.2441  | 70               | 102                | 0311067  | 10        | 3.68        |
| 6.30      | 0.2480  | 70               | 102                | 0311068  | 10        | 3.68        |
| 6.40      | 0.2520  | 73               | 105                | 0311069  | 10        | 4.03        |
| 6.50      | 0.2559  | 73               | 105                | 53472    | 10        | 3.96        |
| 6.60      | 0.2598  | 73               | 105                | 0311070  | 10        | 4.10        |
| 6.70      | 0.2638  | 73               | 105                | 53473    | 10        | 4.03        |
| 6.80      | 0.2677  | 73               | 105                | 53474    | 10        | 4.32        |
| 6.90      | 0.2717  | 73               | 105                | 0311071  | 10        | 4.39        |
| 7.00      | 0.2756  | 73               | 105                | 53475    | 10        | 4.32        |
| 7.10      | 0.2795  | 75               | 108                | 0311072  | 10        | 4.82        |
| 7.20      | 0.2835  | 75               | 108                | 0311073  | 10        | 4.89        |
| 7.30      | 0.2874  | 75               | 108                | 0311074  | 10        | 4.98        |
| 7.40      | 0.2913  | 78               | 111                | 0311075  | 5         | 5.08        |
| 7.50      | 0.2953  | 78               | 111                | 53476    | 5         | 5.02        |
| 7.60      | 0.2992  | 78               | 111                | 0311076  | 5         | 5.34        |
| 7.70      | 0.3031  | 81               | 114                | 0311077  | 5         | 5.51        |
| 7.80      | 0.3071  | 81               | 114                | 0311078  | 5         | 5.51        |
| 7.90      | 0.3110  | 81               | 114                | 0311079  | 5         | 5.62        |
| 8.00      | 0.3150  | 81               | 114                | 53477    | 5         | 5.75        |
| 8.10      | 0.3189  | 84               | 117                | 0311080  | 5         | 6.22        |
| 8.20      | 0.3228  | 84               | 117                | 0311081  | 5         | 6.22        |
| 8.30      | 0.3268  | 84               | 117                | 0311082  | 5         | 6.33        |
| 8.40      | 0.3307  | 87               | 121                | 0311083  | 5         | 6.33        |
| 8.50      | 0.3346  | 87               | 121                | 53478    | 5         | 6.52        |
| 8.60      | 0.3386  | 87               | 121                | 0311084  | 5         | 6.39        |
| 8.70      | 0.3425  | 87               | 121                | 0311085  | 5         | 6.79        |
| 8.80      | 0.3465  | 89               | 124                | 0311086  | 5         | 7.02        |
| 8.90      | 0.3504  | 89               | 124                | 0311087  | 5         | 7.42        |
| 9.00      | 0.3543  | 89               | 124                | 53479    | 5         | 7.42        |
| 9.10      | 0.3583  | 89               | 124                | 0311088  | 5         | 8.09        |
| 9.20      | 0.3622  | 92               | 127                | 0311089  | 5         | 8.09        |
| 9.30      | 0.3661  | 92               | 127                | 0311090  | 5         | 8.09        |
| 9.40      | 0.3701  | 92               | 127                | 0311091  | 5         | 8.09        |
| 9.50      | 0.3740  | 92               | 127                | 53480    | 5         | 7.84        |
| 9.60      | 0.3780  | 95               | 130                | 0311092  | 5         | 8.44        |
| 9.70      | 0.3819  | 95               | 130                | 0311093  | 5         | 8.44        |
| 9.80      | 0.3858  | 95               | 130                | 0311094  | 5         | 8.78        |
| 9.90      | 0.3898  | 95               | 130                | 0311095  | 5         | 8.78        |
| 10.00     | 0.3937  | 95               | 130                | 53481    | 5         | 8.98        |
| 10.10     | 0.3976  | 95               | 130                | 0311096  | 5         | 9.02        |
| 10.20     | 0.4016  | 98               | 133                | 53482    | 5         | 9.65        |
| 10.30     | 0.4055  | 98               | 133                | 0311097  | 5         | 10.38       |
| 10.50     | 0.4134  | 98               | 133                | 53483    | 5         | 10.38       |
| 10.60     | 0.4173  | 98               | 133                | 0311098  | 5         | 10.43       |
| 10.80     | 0.4252  | 103              | 140                | 0311099  | 5         | 10.84       |
| 10.90     | 0.4291  | 103              | 140                | 0311100  | 5         | 11.01       |
| 11.00     | 0.4331  | 103              | 140                | 53484    | 5         | 11.00       |
| 11.10     | 0.4370  | 103              | 140                | 0311101  | 5         | 11.08       |
| 11.20     | 0.4409  | 106              | 143                | 0311102  | 5         | 11.26       |
| 11.40     | 0.4488  | 106              | 143                | 0311103  | 5         | 11.56       |
| 11.50     | 0.4528  | 106              | 143                | 53485    | 5         | 11.91       |
| 11.60     | 0.4567  | 106              | 143                | 0311104  | 5         | 11.72       |
| 11.80     | 0.4646  | 110              | 146                | 0311105  | 5         | 12.08       |
| 11.90     | 0.4685  | 110              | 146                | 0311106  | 5         | 12.43       |
| 12.00     | 0.4724  | 111              | 149                | 53486    | 5         | 12.50       |
| 12.10     | 0.4764  | 111              | 149                | 0311107  | 5         | 12.08       |
| 12.       |         |                  |                    |          |           |             |



# COBALT DRILL BITS

## Cobalt Drill Bits Cont.



### 135°, Q-Cobalt Screw Machine Length Split Point Wide Land Parabolic Drills CTD 2075 & 2075TN

- Straw surface finish
- Titanium Nitride (TiN) coating adds lubricity and hardness which enhances chip flow, finish hole quality and drill life
- 135° split point is self-centering, for reduced thrust and easier penetration
- Premium 8% Cobalt High Speed Steel (M42)
- Screw machine length for superior rigidity needed to minimize deflection when heavy feed rates are used
- Parabolic flute form and point combinations produces tighter hole tolerances, heightened chip breaking action and improved coolant flow for deep-hole drilling
- Wider flute spacing disperses chips away from the cutting edge more rapidly than conventional parabolic drills, resulting in tighter, more manageable chips and less chip packing
- Recommended for stainless steels, work hardening materials

#### Fractional

| Size   | Decimal   | Flute Lgth. | Overall Lgth. | CTD STRAW |             | CTD TIN  |             |
|--------|-----------|-------------|---------------|-----------|-------------|----------|-------------|
|        |           |             |               | Part No.  | Price /Each | Part No. | Price /Each |
| 1/16"  | 0.0625"   | 0.625"      | 1.625"        | 7002654   | \$4.10      | 7002772  | \$5.42      |
| 5/64"  | 0.078125" | 0.6875"     | 1.6875"       | 7002655   | 4.10        | 7002773  | 5.42        |
| 3/32"  | 0.09375"  | 0.75"       | 1.75"         | 7002656   | 4.10        | 7002774  | 5.42        |
| 7/64"  | 0.109375" | 0.8125"     | 1.8125"       | 7002657   | 4.30        | 7002775  | 5.88        |
| 1/8"   | 0.125"    | 0.875"      | 1.875"        | 7002658   | 5.06        | 7002776  | 6.80        |
| 9/64"  | 0.140625" | 0.9375"     | 1.9375"       | 7002659   | 5.22        | 7002777  | 7.09        |
| 5/32"  | 0.15625"  | 1"          | 2.0625"       | 7002660   | 5.78        | 7002778  | 7.82        |
| 11/64" | 0.171875" | 1.0625"     | 2.125"        | 7002661   | 6.12        | 7002779  | 8.22        |
| 3/16"  | 0.1875"   | 1.125"      | 2.1875"       | 7002662   | 6.69        | 7002780  | 9.23        |
| 13/64" | 0.203125" | 1.1875"     | 2.25"         | 7002663   | 8.31        | 7002781  | 11.05       |
| 7/32"  | 0.21875"  | 1.25"       | 2.375"        | 7002664   | 8.96        | 7002782  | 12.06       |
| 15/64" | 0.234375" | 1.3125"     | 2.4375"       | 7002665   | 9.93        | 7002783  | 12.75       |
| 1/4"-E | 0.25"     | 1.375"      | 2.5"          | 7002666   | 9.92        | 7002784  | 12.75       |
| 17/64" | 0.265625" | 1.4375"     | 2.625"        | 7002667   | 11.55       | 7002785  | 14.99       |
| 9/32"  | 0.28125"  | 1.5"        | 2.6875"       | 7002668   | 11.66       | 7002786  | 15.30       |
| 19/64" | 0.296875" | 1.5625"     | 2.75"         | 7002669   | 13.57       | 7002787  | 18.74       |
| 5/16"  | 0.3125"   | 1.625"      | 2.8125"       | 7002670   | 13.57       | 7002788  | 18.74       |
| 21/64" | 0.328125" | 1.6875"     | 2.9375"       | 7002671   | 15.70       | 7002789  | 21.27       |
| 11/32" | 0.34375"  | 1.6875"     | 3"            | 7002672   | 16.11       | 7002790  | 21.58       |
| 23/64" | 0.359375" | 1.75"       | 3.0625"       | 7002673   | 17.81       | 7002791  | 24.21       |
| 3/8"   | 0.375"    | 1.8125"     | 3.125"        | 7002674   | 17.52       | 7002792  | 24.41       |
| 25/64" | 0.390625" | 1.875"      | 3.25"         | 7002675   | 20.66       | 7002793  | 28.14       |
| 13/32" | 0.40625"  | 1.9375"     | 3.3125"       | 7002676   | 20.85       | 7002794  | 28.75       |
| 27/64" | 0.421875" | 2"          | 3.375"        | 7002677   | 23.68       | 7002795  | 31.51       |
| 7/16"  | 0.4375"   | 2.0625"     | 3.4375"       | 7002678   | 23.81       | 7002796  | 31.58       |
| 29/64" | 0.453125" | 2.125"      | 3.5625"       | 7002679   | 28.56       | 7002797  | 38.68       |
| 15/32" | 0.46875"  | 2.125"      | 3.625"        | 7002680   | 28.55       | 7002798  | 38.79       |
| 31/64" | 0.484375" | 2.1875"     | 3.6875"       | 7002681   | 29.77       | 7002799  | 39.81       |
| 1/2"   | 0.5"      | 2.25"       | 3.75"         | 7002682   | 29.78       | 7002800  | 39.81       |
| 33/64" | 0.515625" | 2.375"      | 3.875"        | 7002683   | 34.95       | 7002801  | 45.08       |
| 17/32" | 0.53125"  | 2.375"      | 3.875"        | 7002684   | 35.97       | 7002802  | 46.57       |
| 35/64" | 0.546875" | 2.5"        | 4"            | 7002685   | 37.77       | 7002803  | 47.51       |
| 9/16"  | 0.5625"   | 2.5"        | 4"            | 7002686   | 38.39       | 7002804  | 49.33       |
| 37/64" | 0.578125" | 2.625"      | 4.125"        | 7002687   | 39.39       | 7002805  | 51.14       |
| 19/32" | 0.59375"  | 2.625"      | 4.125"        | 7002688   | 40.01       | 7002806  | 54.59       |
| 39/64" | 0.609375" | 2.75"       | 4.25"         | 7002689   | 44.05       | 7002807  | 58.64       |
| 5/8"   | 0.625"    | 2.75"       | 4.25"         | 7002690   | 46.09       | 7002808  | 61.16       |
| 41/64" | 0.640625" | 2.875"      | 4.5"          | 7002691   | 48.20       | 7002809  | 64.60       |
| 21/32" | 0.65625"  | 2.875"      | 4.5"          | 7002692   | 53.98       | 7002810  | 70.38       |
| 43/64" | 0.671875" | 2.875"      | 4.625"        | 7002693   | 56.41       | 7002811  | 72.29       |
| 11/16" | 0.6875"   | 2.875"      | 4.625"        | 7002694   | 57.30       | 7002812  | 74.93       |

#### Wire

| Size | Decimal | Flute Lgth. | Overall Lgth. | CTD STRAW |             | CTD TIN  |             |
|------|---------|-------------|---------------|-----------|-------------|----------|-------------|
|      |         |             |               | Part No.  | Price /Each | Part No. | Price /Each |
| #1   | 0.228"  | 1.3125"     | 2.4375"       | 7002695   | \$9.63      | 7002813  | \$12.47     |
| #2   | 0.221"  | 1.3125"     | 2.4375"       | 7002696   | 9.63        | 7002814  | 12.47       |
| #3   | 0.213"  | 1.25"       | 2.375"        | 7002697   | 9.02        | 7002815  | 12.06       |
| #4   | 0.209"  | 1.25"       | 2.375"        | 7002698   | 9.02        | 7002816  | 12.06       |
| #5   | 0.2055" | 1.25"       | 2.375"        | 7002699   | 9.02        | 7002817  | 12.06       |
| #6   | 0.204"  | 1.25"       | 2.375"        | 7002700   | 9.02        | 7002818  | 12.06       |
| #7   | 0.201"  | 1.1875"     | 2.25"         | 7002701   | 8.21        | 7002819  | 11.05       |
| #8   | 0.199"  | 1.1875"     | 2.25"         | 7002702   | 8.21        | 7002820  | 11.05       |
| #9   | 0.196"  | 1.1875"     | 2.25"         | 7002703   | 8.21        | 7002821  | 11.05       |
| #10  | 0.1935" | 1.1875"     | 2.25"         | 7002704   | 8.21        | 7002822  | 11.05       |
| #11  | 0.191"  | 1.1875"     | 2.25"         | 7002705   | 8.21        | 7002823  | 11.05       |
| #12  | 0.189"  | 1.1875"     | 2.25"         | 7002706   | 8.21        | 7002824  | 11.05       |
| #13  | 0.185"  | 1.125"      | 2.1875"       | 7002707   | 6.85        | 7002825  | 9.23        |
| #14  | 0.182"  | 1.125"      | 2.1875"       | 7002708   | 6.85        | 7002826  | 9.23        |
| #15  | 0.18"   | 1.125"      | 2.1875"       | 7002709   | 6.85        | 7002827  | 9.23        |
| #16  | 0.177"  | 1.125"      | 2.1875"       | 7002710   | 6.85        | 7002828  | 9.23        |
| #17  | 0.173"  | 1.125"      | 2.1875"       | 7002711   | 6.85        | 7002829  | 9.23        |
| #18  | 0.1695" | 1.0625"     | 2.125"        | 7002712   | 6.19        | 7002830  | 8.31        |
| #19  | 0.166"  | 1.0625"     | 2.125"        | 7002713   | 6.19        | 7002831  | 8.31        |
| #20  | 0.161"  | 1.0625"     | 2.125"        | 7002714   | 6.19        | 7002832  | 8.31        |
| #21  | 0.159"  | 1.0625"     | 2.125"        | 7002715   | 6.19        | 7002833  | 8.31        |
| #22  | 0.157"  | 1.0625"     | 2.125"        | 7002716   | 6.19        | 7002834  | 8.31        |
| #23  | 0.154"  | 1"          | 2.0625"       | 7002717   | 5.88        | 7002835  | 7.91        |
| #24  | 0.152"  | 1"          | 2.0625"       | 7002718   | 5.88        | 7002836  | 7.91        |
| #25  | 0.1495" | 1"          | 2.0625"       | 7002719   | 5.88        | 7002837  | 7.91        |
| #26  | 0.147"  | 1"          | 2.0625"       | 7002720   | 5.88        | 7002838  | 7.91        |
| #27  | 0.144"  | 1"          | 2.0625"       | 7002721   | 5.88        | 7002839  | 7.91        |
| #28  | 0.1405" | 0.9375"     | 1.9375"       | 7002722   | 5.27        | 7002840  | 6.84        |
| #29  | 0.136"  | 0.9375"     | 1.9375"       | 7002723   | 5.27        | 7002841  | 6.84        |
| #30  | 0.1285" | 0.9375"     | 1.9375"       | 7002724   | 5.27        | 7002842  | 6.84        |
| #31  | 0.12"   | 0.875"      | 1.875"        | 7002725   | 5.27        | 7002843  | 6.73        |
| #32  | 0.116"  | 0.875"      | 1.875"        | 7002726   | 5.27        | 7002844  | 6.73        |
| #33  | 0.113"  | 0.875"      | 1.875"        | 7002727   | 5.27        | 7002845  | 6.73        |
| #34  | 0.111"  | 0.875"      | 1.875"        | 7002728   | 5.27        | 7002846  | 6.73        |
| #35  | 0.11"   | 0.875"      | 1.875"        | 7002729   | 5.27        | 7002847  | 6.73        |
| #36  | 0.1065" | 0.8125"     | 1.8125"       | 7002730   | 4.30        | 7002848  | 5.79        |
| #37  | 0.104"  | 0.8125"     | 1.8125"       | 7002731   | 4.30        | 7002849  | 5.79        |
| #38  | 0.1015" | 0.8125"     | 1.8125"       | 7002732   | 4.30        | 7002850  | 5.79        |
| #39  | 0.0995" | 0.8125"     | 1.8125"       | 7002733   | 4.30        | 7002851  | 5.79        |
| #40  | 0.098"  | 0.8125"     | 1.8125"       | 7002734   | 4.30        | 7002852  | 5.79        |
| #41  | 0.096"  | 0.8125"     | 1.8125"       | 7002760   | 4.30        | 7002878  | 5.63        |
| #42  | 0.0935" | 0.75"       | 1.75"         | 7002761   | 4.17        | 7002879  | 5.37        |
| #43  | 0.089"  | 0.75"       | 1.75"         | 7002762   | 4.17        | 7002880  | 5.37        |
| #44  | 0.086"  | 0.75"       | 1.75"         | 7002763   | 4.17        | 7002881  | 5.37        |
| #45  | 0.082"  | 0.75"       | 1.75"         | 7002764   | 4.17        | 7002882  | 5.37        |
| #46  | 0.081"  | 0.75"       | 1.75"         | 7002765   | 4.17        | 7002883  | 5.37        |
| #47  | 0.0785" | 0.75"       | 1.75"         | 7002766   | 4.17        | 7002884  | 5.37        |
| #48  | 0.076"  | 0.6875"     | 1.6875"       | 7002767   | 4.17        | 7002885  | 5.37        |
| #49  | 0.073"  | 0.6875"     | 1.6875"       | 7002768   | 4.17        | 7002886  | 5.37        |
| #50  | 0.07"   | 0.6875"     | 1.6875"       | 7002769   | 4.17        | 7002887  | 5.37        |
| #51  | 0.067"  | 0.6875"     | 1.6875"       | 7002770   | 4.17        | 7002888  | 5.37        |
| #52  | 0.0635" | 0.6875"     | 1.6875"       | 7002771   | 4.17        | 7002889  | 5.37        |



## Cobalt Drill Bits Cont.



### 135°, Q-Cobalt Screw Machine Length Split Point Wide Land Parabolic Drills

| Letter |         |             |               | CTD STRAW |             | CTD TIN  |             |
|--------|---------|-------------|---------------|-----------|-------------|----------|-------------|
| Size   | Decimal | Flute Lgth. | Overall Lgth. | Part No.  | Price /Each | Part No. | Price /Each |
| Ltr A  | 0.234"  | 1.3125"     | 2.4375"       | 7002735   | \$11.45     | 7002853  | \$14.58     |
| Ltr B  | 0.238"  | 1.375"      | 2.5"          | 7002736   | 11.66       | 7002854  | 14.89       |
| Ltr C  | 0.242"  | 1.375"      | 2.5"          | 7002737   | 11.66       | 7002855  | 14.89       |
| Ltr D  | 0.246"  | 1.375"      | 2.5"          | 7002738   | 11.66       | 7002856  | 14.89       |
| Ltr F  | 0.257"  | 1.4375"     | 2.625"        | 7002739   | 12.97       | 7002857  | 16.92       |
| Ltr G  | 0.261"  | 1.5"        | 2.625"        | 7002740   | 12.97       | 7002858  | 16.92       |
| Ltr H  | 0.266"  | 1.5"        | 2.6875"       | 7002741   | 13.27       | 7002859  | 17.33       |
| Ltr I  | 0.272"  | 1.5"        | 2.6875"       | 7002742   | 13.27       | 7002860  | 17.33       |
| Ltr J  | 0.277"  | 1.5"        | 2.6875"       | 7002743   | 13.27       | 7002861  | 17.33       |
| Ltr K  | 0.2812" | 1.5"        | 2.6875"       | 7002744   | 13.27       | 7002862  | 17.33       |
| Ltr L  | 0.29"   | 1.5625"     | 2.75"         | 7002745   | 15.20       | 7002863  | 20.24       |
| Ltr M  | 0.295"  | 1.5625"     | 2.75"         | 7002746   | 15.20       | 7002864  | 20.24       |

| Letter Cont. |         |             |               | CTD STRAW |             | CTD TIN  |             |
|--------------|---------|-------------|---------------|-----------|-------------|----------|-------------|
| Size         | Decimal | Flute Lgth. | Overall Lgth. | Part No.  | Price /Each | Part No. | Price /Each |
| Ltr N        | 0.302"  | 1.625"      | 2.8125"       | 7002747   | \$16.00     | 7002865  | \$21.78     |
| Ltr O        | 0.316"  | 1.6875"     | 2.9375"       | 7002748   | 17.53       | 7002866  | 24.10       |
| Ltr P        | 0.323"  | 1.6875"     | 2.9375"       | 7002749   | 17.53       | 7002867  | 24.10       |
| Ltr Q        | 0.332"  | 1.6875"     | 3"            | 7002750   | 18.44       | 7002868  | 25.11       |
| Ltr R        | 0.339"  | 1.6875"     | 3"            | 7002751   | 18.44       | 7002869  | 25.11       |
| Ltr S        | 0.348"  | 1.75"       | 3.0625"       | 7002752   | 20.05       | 7002870  | 27.54       |
| Ltr T        | 0.358"  | 1.75"       | 3.0625"       | 7002753   | 20.05       | 7002871  | 27.54       |
| Ltr U        | 0.368"  | 1.8125"     | 3.125"        | 7002754   | 20.37       | 7002872  | 27.54       |
| Ltr V        | 0.377"  | 1.875"      | 3.25"         | 7002755   | 21.27       | 7002873  | 29.37       |
| Ltr W        | 0.386"  | 1.875"      | 3.25"         | 7002756   | 21.38       | 7002874  | 29.08       |
| Ltr X        | 0.397"  | 1.9375"     | 3.3125"       | 7002757   | 21.79       | 7002875  | 31.80       |
| Ltr Y        | 0.404"  | 1.9375"     | 3.3125"       | 7002758   | 21.79       | 7002876  | 28.76       |
| Ltr Z        | 0.413"  | 2"          | 3.375"        | 7002759   | 23.28       | 7002877  | 31.92       |

### 135° Parabolic Screw Machine Drill-Fractional TiN



| Part No. | Size   | Overall Lgth. | Surface | Price /Each |
|----------|--------|---------------|---------|-------------|
| 7002772  | 1/16"  | 1.625"        | TiN     | \$5.42      |
| 7002773  | 5/64"  | 1.6875"       | TiN     | 5.42        |
| 7002774  | 3/32"  | 1.75"         | TiN     | 5.42        |
| 7002775  | 7/64"  | 1.8125"       | TiN     | 5.88        |
| 7002776  | 1/8"   | 1.875"        | TiN     | 6.80        |
| 7002777  | 9/64"  | 1.9375"       | TiN     | 7.09        |
| 7002778  | 5/32"  | 2.0625"       | TiN     | 7.82        |
| 7002779  | 11/64" | 2.125"        | TiN     | 8.22        |
| 7002780  | 3/16"  | 2.1875"       | TiN     | 9.23        |
| 7002781  | 13/64" | 2.25"         | TiN     | 11.05       |
| 7002782  | 7/32"  | 2.375"        | TiN     | 12.06       |
| 7002783  | 15/64" | 2.4375"       | TiN     | 12.75       |
| 7002784  | 1/4"-E | 2.5"          | TiN     | 12.75       |
| 7002785  | 17/64" | 2.625"        | TiN     | 14.99       |
| 7002786  | 9/32"  | 2.6875"       | TiN     | 15.30       |
| 7002787  | 19/64" | 2.75"         | TiN     | 18.74       |
| 7002788  | 5/16"  | 2.8125"       | TiN     | 18.74       |
| 7002789  | 21/64" | 2.9375"       | TiN     | 21.27       |
| 7002790  | 11/32" | 3"            | TiN     | 21.58       |
| 7002791  | 23/64" | 3.0625"       | TiN     | 24.21       |
| 7002792  | 3/8"   | 3.125"        | TiN     | 24.41       |
| 7002793  | 25/64" | 3.25"         | TiN     | 28.14       |
| 7002794  | 13/32" | 3.3125"       | TiN     | 28.75       |
| 7002795  | 27/64" | 3.375"        | TiN     | 31.51       |
| 7002796  | 7/16"  | 3.4375"       | TiN     | 31.58       |
| 7002797  | 29/64" | 3.5625"       | TiN     | 38.68       |
| 7002798  | 15/32" | 3.625"        | TiN     | 38.79       |
| 7002799  | 31/64" | 3.6875"       | TiN     | 39.81       |
| 7002800  | 1/2"   | 3.75"         | TiN     | 39.81       |
| 7002801  | 33/64" | 3.875"        | TiN     | 45.08       |
| 7002802  | 17/32" | 3.875"        | TiN     | 46.57       |
| 7002803  | 35/64" | 4"            | TiN     | 47.51       |
| 7002804  | 9/16"  | 4"            | TiN     | 49.33       |
| 7002805  | 37/64" | 4.125"        | TiN     | 51.14       |
| 7002806  | 19/32" | 4.125"        | TiN     | 54.59       |
| 7002807  | 39/64" | 4.25"         | TiN     | 58.64       |
| 7002808  | 5/8"   | 4.25"         | TiN     | 61.16       |
| 7002809  | 41/64" | 4.5"          | TiN     | 64.60       |
| 7002810  | 21/32" | 4.5"          | TiN     | 70.38       |
| 7002811  | 43/64" | 4.625"        | TiN     | 72.29       |
| 7002812  | 11/16" | 4.625"        | TiN     | 74.93       |

### 135° Parabolic Screw Machine-Number TiN



| Part No. | Size | Overall Lgth. | Surface | Price /Each |
|----------|------|---------------|---------|-------------|
| 7002813  | #1   | 2.4375"       | TiN     | \$12.47     |
| 7002814  | #2   | 2.4375"       | TiN     | 12.47       |
| 7002815  | #3   | 2.375"        | TiN     | 12.06       |
| 7002816  | #4   | 2.375"        | TiN     | 12.06       |
| 7002817  | #5   | 2.375"        | TiN     | 12.06       |
| 7002818  | #6   | 2.375"        | TiN     | 12.06       |
| 7002819  | #7   | 2.25"         | TiN     | 11.05       |
| 7002820  | #8   | 2.25"         | TiN     | 11.05       |
| 7002821  | #9   | 2.25"         | TiN     | 11.05       |
| 7002822  | #10  | 2.25"         | TiN     | 11.05       |
| 7002823  | #11  | 2.25"         | TiN     | 11.05       |
| 7002824  | #12  | 2.25"         | TiN     | 11.05       |
| 7002825  | #13  | 2.1875"       | TiN     | 9.23        |
| 7002826  | #14  | 2.1875"       | TiN     | 9.23        |
| 7002827  | #15  | 2.1875"       | TiN     | 9.23        |
| 7002828  | #16  | 2.1875"       | TiN     | 9.23        |
| 7002829  | #17  | 2.1875"       | TiN     | 9.23        |
| 7002830  | #18  | 2.125"        | TiN     | 8.31        |
| 7002831  | #19  | 2.125"        | TiN     | 8.31        |
| 7002832  | #20  | 2.125"        | TiN     | 8.31        |
| 7002833  | #21  | 2.125"        | TiN     | 8.31        |
| 7002834  | #22  | 2.125"        | TiN     | 8.31        |
| 7002835  | #23  | 2.0625"       | TiN     | 7.91        |
| 7002836  | #24  | 2.0625"       | TiN     | 7.91        |
| 7002837  | #25  | 2.0625"       | TiN     | 7.91        |
| 7002838  | #26  | 2.0625"       | TiN     | 7.91        |
| 7002839  | #27  | 2.0625"       | TiN     | 7.91        |
| 7002840  | #28  | 1.9375"       | TiN     | 6.84        |
| 7002841  | #29  | 1.9375"       | TiN     | 6.84        |
| 7002842  | #30  | 1.9375"       | TiN     | 6.84        |
| 7002843  | #31  | 1.875"        | TiN     | 6.73        |
| 7002844  | #32  | 1.875"        | TiN     | 6.73        |
| 7002845  | #33  | 1.875"        | TiN     | 6.73        |
| 7002846  | #34  | 1.875"        | TiN     | 6.73        |
| 7002847  | #35  | 1.875"        | TiN     | 6.73        |
| 7002848  | #36  | 1.8125"       | TiN     | 5.79        |
| 7002849  | #37  | 1.8125"       | TiN     | 5.79        |
| 7002850  | #38  | 1.8125"       | TiN     | 5.79        |
| 7002851  | #39  | 1.8125"       | TiN     | 5.79        |
| 7002852  | #40  | 1.8125"       | TiN     | 5.79        |

### 135° Parabolic Screw Machine-Letter TiN



| Part No. | Size  | Overall Lgth. | Surface | Price /Each |
|----------|-------|---------------|---------|-------------|
| 7002853  | Ltr A | 2.4375"       | TiN     | \$14.58     |
| 7002854  | Ltr B | 2.5"          | TiN     | 14.89       |
| 7002855  | Ltr C | 2.5"          | TiN     | 14.89       |
| 7002856  | Ltr D | 2.5"          | TiN     | 14.89       |
| 7002857  | Ltr F | 2.625"        | TiN     | 16.92       |
| 7002858  | Ltr G | 2.625"        | TiN     | 16.92       |
| 7002859  | Ltr H | 2.6875"       | TiN     | 17.33       |
| 7002860  | Ltr I | 2.6875"       | TiN     | 17.33       |
| 7002861  | Ltr J | 2.6875"       | TiN     | 17.33       |
| 7002862  | Ltr K | 2.6875"       | TiN     | 17.33       |
| 7002863  | Ltr L | 2.75"         | TiN     | 20.24       |
| 7002864  | Ltr M | 2.75"         | TiN     | 20.24       |
| 7002865  | Ltr N | 2.8125"       | TiN     | 21.78       |
| 7002866  | Ltr O | 2.9375"       | TiN     | 24.10       |
| 7002867  | Ltr P | 2.9375"       | TiN     | 24.10       |
| 7002868  | Ltr Q | 3"            | TiN     | 25.11       |
| 7002869  | Ltr R | 3"            | TiN     | 25.11       |
| 7002870  | Ltr S | 3.0625"       | TiN     | 27.54       |
| 7002871  | Ltr T | 3.0625"       | TiN     | 27.54       |
| 7002872  | Ltr U | 3.125"        | TiN     | 27.54       |
| 7002873  | Ltr V | 3.25"         | TiN     | 29.37       |
| 7002874  | Ltr W | 3.25"         | TiN     | 29.08       |
| 7002875  | Ltr X | 3.3125"       | TiN     | 31.80       |
| 7002876  | Ltr Y | 3.3125"       | TiN     | 28.76       |
| 7002877  | Ltr Z | 3.375"        | TiN     | 31.92       |

# COBALT DRILL BITS

## Cobalt Drill Bits Cont.



Cutting Tools

### 135° Split Point Cobalt Screw Machine Length Straw Finish - CL559



| Part No.                | Size   | Flute Lgth. | Overall Lgth. | Decimal | Price /Each |
|-------------------------|--------|-------------|---------------|---------|-------------|
| <b>Fractional Sizes</b> |        |             |               |         |             |
| 7006543                 | 1/16"  | 0.625"      | 1.625"        | 0.0625" | \$1.67      |
| 7006549                 | 5/64"  | 0.6875"     | 1.6875"       | 0.0781" | 1.67        |
| 7006556                 | 3/32"  | 0.75"       | 1.75"         | 0.0938" | 1.67        |
| 7006563                 | 7/64"  | 0.8125"     | 1.8125"       | 0.1094" | 1.83        |
| 7006569                 | 1/8"   | 0.875"      | 1.875"        | 0.125"  | 2.12        |
| 7006573                 | 9/64"  | 0.9375"     | 1.9375"       | 0.1406" | 2.19        |
| 7006579                 | 5/32"  | 1"          | 2.0625"       | 0.1562" | 2.27        |
| 7006585                 | 11/64" | 1.0625"     | 2.125"        | 0.1719" | 2.57        |
| 7006591                 | 3/16"  | 1.125"      | 2.1875"       | 0.1875" | 2.93        |
| 7006598                 | 13/64" | 1.1875"     | 2.25"         | 0.2031" | 3.44        |
| 7006603                 | 7/32"  | 1.25"       | 2.375"        | 0.2188" | 3.79        |
| 7006607                 | 15/64" | 1.3125"     | 2.4375"       | 0.2344" | 4.16        |
| 7006611                 | 1/4"-E | 1.375"      | 2.5"          | 0.25"   | 4.24        |
| 7006614                 | 17/64" | 1.4375"     | 2.625"        | 0.2656" | 4.91        |
| 7006619                 | 9/32"  | 1.5"        | 2.6875"       | 0.2812" | 5.15        |
| 7006622                 | 19/64" | 1.5625"     | 2.75"         | 0.2969" | 6.28        |
| 7006627                 | 21/64" | 1.6875"     | 2.9375"       | 0.3281" | 7.56        |
| 7006630                 | 11/32" | 1.6875"     | 3"            | 0.3438" | 7.85        |
| 7006633                 | 23/64" | 1.75"       | 3.0625"       | 0.3594" | 9.27        |
| 7006635                 | 3/8"   | 1.8125"     | 3.125"        | 0.375"  | 9.16        |
| 7006638                 | 25/64" | 1.875"      | 3.25"         | 0.3906" | 10.53       |
| 7006641                 | 13/32" | 1.9375"     | 3.3125"       | 0.4062" | 10.68       |
| 7006643                 | 27/64" | 2"          | 3.375"        | 0.4219" | 12.02       |
| 7006644                 | 7/16"  | 2.0625"     | 3.4375"       | 0.4375" | 12.11       |
| 7006645                 | 29/64" | 2.125"      | 3.5625"       | 0.4531" | 13.55       |
| 7006646                 | 15/32" | 2.125"      | 3.625"        | 0.4688" | 13.79       |
| 7006647                 | 31/64" | 2.1875"     | 3.6875"       | 0.4844" | 14.36       |
| 7006648                 | 1/2"   | 2.25"       | 3.75"         | 0.5"    | 14.54       |

| Part No.            | Size  | Flute Lgth. | Overall Lgth. | Decimal | Price /Each |
|---------------------|-------|-------------|---------------|---------|-------------|
| <b>Letter Sizes</b> |       |             |               |         |             |
| 7006606             | Ltr A | 1.3125"     | 2.4375"       | 0.234"  | \$4.82      |
| 7006608             | Ltr B | 1.375"      | 2.5"          | 0.238"  | 4.82        |
| 7006609             | Ltr C | 1.375"      | 2.5"          | 0.242"  | 4.91        |
| 7006610             | Ltr D | 1.375"      | 2.5"          | 0.246"  | 4.98        |
| 7006612             | Ltr F | 1.4375"     | 2-5/8"        | 0.257"  | 5.35        |
| 7006613             | Ltr G | 1.4375"     | 2.625"        | 0.261"  | 5.46        |
| 7006615             | Ltr H | 1.5"        | 2.6875"       | 0.266"  | 5.55        |
| 7006616             | Ltr I | 1.5"        | 2.6875"       | 0.272"  | 5.71        |
| 7006617             | Ltr J | 1.5"        | 2.6875"       | 0.277"  | 5.78        |
| 7006618             | Ltr K | 1.5"        | 2.6875"       | 0.281"  | 5.87        |
| 7006620             | Ltr L | 1-9/16"     | 2-3/4"        | 0.29"   | 6.85        |
| 7006621             | Ltr M | 1-9/16"     | 2-3/4"        | 0.295"  | 6.92        |
| 7006623             | Ltr N | 1.625"      | 2.8125"       | 0.302"  | 7.56        |
| 7006624             | 5/16" | 1.625"      | 2.8125"       | 0.3125" | 6.53        |
| 7006625             | Ltr O | 1.6875"     | 2.9375"       | 0.316"  | 8.17        |
| 7006626             | Ltr P | 1.6875"     | 2.9375"       | 0.323"  | 8.33        |
| 7006628             | Ltr Q | 1.6875"     | 3"            | 0.332"  | 8.82        |
| 7006629             | Ltr R | 1.6875"     | 3"            | 0.339"  | 8.98        |
| 7006631             | Ltr S | 1.75"       | 3.0625"       | 0.348"  | 10.98       |
| 7006632             | Ltr T | 1.75"       | 3.0625"       | 0.358"  | 11.14       |
| 7006634             | Ltr U | 1.8125"     | 3.125"        | 0.368"  | 11.20       |
| 7006636             | Ltr V | 1.875"      | 3-1/4"        | 0.377"  | 12.13       |
| 7006637             | Ltr W | 1.875"      | 3-1/4"        | 0.386"  | 12.31       |
| 7006639             | Ltr X | 1.9375"     | 3.3125"       | 0.397"  | 12.51       |
| 7006640             | Ltr Y | 1.9375"     | 3.3125"       | 0.404"  | 12.65       |
| 7006642             | Ltr Z | 2"          | 3-3/8"        | 0.413"  | 13.43       |

| Part No.               | Size | Flute Lgth. | Overall Lgth. | Decimal | Price /Each |
|------------------------|------|-------------|---------------|---------|-------------|
| <b>Wire Gage Sizes</b> |      |             |               |         |             |
| 7006535                | #60  | 0.5"        | 1.375"        | 0.04"   | \$1.94      |
| 7006536                | #59  | 0.5"        | 1.375"        | 0.041"  | 1.94        |
| 7006537                | #58  | 0.5"        | 1.375"        | 0.042"  | 1.94        |
| 7006538                | #57  | 0.5"        | 1.375"        | 0.043"  | 1.89        |
| 7006539                | #56  | 0.5"        | 1.375"        | 0.0465" | 1.82        |
| 7006540                | #55  | 0.625"      | 1.625"        | 0.052"  | 1.82        |
| 7006541                | #54  | 0.625"      | 1-5/8"        | 0.055"  | 1.82        |
| 7006542                | #53  | 0.625"      | 1-5/8"        | 0.0595" | 1.82        |
| 7006544                | #52  | 0.6875"     | 1-11/16"      | 0.0635" | 1.66        |
| 7006545                | #51  | 0.6875"     | 1-11/16"      | 0.067"  | 1.66        |
| 7006546                | #50  | 0.6875"     | 1-11/16"      | 0.07"   | 1.66        |
| 7006547                | #49  | 0.6875"     | 1-11/16"      | 0.073"  | 1.66        |
| 7006548                | #48  | 0.6875"     | 1-11/16"      | 0.076"  | 1.66        |
| 7006550                | #47  | 0.75"       | 1-3/4"        | 0.0785" | 1.66        |
| 7006551                | #46  | 0.75"       | 1-3/4"        | 0.081"  | 1.66        |
| 7006552                | #45  | 0.75"       | 1-3/4"        | 0.082"  | 1.66        |
| 7006553                | #44  | 0.75"       | 1-3/4"        | 0.086"  | 1.66        |
| 7006554                | #43  | 0.75"       | 1-3/4"        | 0.089"  | 1.66        |
| 7006555                | #42  | 0.75"       | 1-3/4"        | 0.0935" | 1.66        |
| 7006557                | #41  | 0.8125"     | 1-13/16"      | 0.096"  | 1.73        |
| 7006558                | #40  | 0.8125"     | 1-13/16"      | 0.098"  | 1.74        |
| 7006559                | #39  | 0.8125"     | 1-13/16"      | 0.0995" | 1.74        |
| 7006560                | #38  | 0.8125"     | 1-13/16"      | 0.1015" | 1.74        |
| 7006561                | #37  | 0.8125"     | 1-13/16"      | 0.104"  | 1.90        |
| 7006562                | #36  | 0.8125"     | 1-13/16"      | 0.1065" | 1.90        |
| 7006564                | #35  | 0.875"      | 1-7/8"        | 0.11"   | 1.90        |
| 7006565                | #34  | 0.875"      | 1-7/8"        | 0.111"  | 1.90        |
| 7006566                | #33  | 0.875"      | 1-7/8"        | 0.113"  | 1.90        |
| 7006567                | #32  | 0.875"      | 1-7/8"        | 0.116"  | 2.04        |
| 7006568                | #31  | 0.875"      | 1-7/8"        | 0.12"   | 2.04        |
| 7006570                | #30  | 0.9375"     | 1-15/16"      | 0.1285" | 2.04        |
| 7006571                | #29  | 0.9375"     | 1-15/16"      | 0.136"  | 2.19        |
| 7006572                | #28  | 0.9375"     | 1-15/16"      | 0.1405" | 2.19        |
| 7006574                | #27  | 1"          | 2-1/16"       | 0.144"  | 2.34        |
| 7006575                | #26  | 1"          | 2-1/16"       | 0.147"  | 2.34        |
| 7006576                | #25  | 1"          | 2-1/16"       | 0.1495" | 2.34        |
| 7006577                | #24  | 1"          | 2-1/16"       | 0.152"  | 2.52        |
| 7006578                | #23  | 1"          | 2-1/16"       | 0.154"  | 2.52        |
| 7006580                | #22  | 1-1/16"     | 2-1/8"        | 0.157"  | 2.52        |
| 7006581                | #21  | 1-1/16"     | 2-1/8"        | 0.159"  | 2.52        |
| 7006582                | #20  | 1-1/16"     | 2-1/8"        | 0.161"  | 2.52        |
| 7006583                | #19  | 1-1/16"     | 2-1/8"        | 0.166"  | 2.52        |
| 7006584                | #18  | 1-1/16"     | 2-1/8"        | 0.1695" | 2.68        |
| 7006586                | #17  | 1-1/8"      | 2-3/16"       | 0.173"  | 2.97        |
| 7006587                | #16  | 1-1/8"      | 2-3/16"       | 0.177"  | 3.10        |
| 7006588                | #15  | 1-1/8"      | 2-3/16"       | 0.18"   | 3.10        |
| 7006589                | #14  | 1-1/8"      | 2-3/16"       | 0.182"  | 3.10        |
| 7006590                | #13  | 1-1/8"      | 2-3/16"       | 0.185"  | 3.10        |
| 7006592                | #12  | 1-3/16"     | 2-1/4"        | 0.189"  | 3.20        |
| 7006593                | #11  | 1-3/16"     | 2-1/4"        | 0.191"  | 3.20        |
| 7006594                | #10  | 1-3/16"     | 2-1/4"        | 0.1935" | 3.26        |
| 7006595                | #9   | 1-3/16"     | 2-1/4"        | 0.196"  | 3.26        |
| 7006596                | #8   | 1-3/16"     | 2-1/4"        | 0.199"  | 3.26        |
| 7006597                | #7   | 1-3/16"     | 2-1/4"        | 0.201"  | 3.27        |
| 7006599                | #6   | 1-1/4"      | 2-3/8"        | 0.204"  | 4.19        |
| 7006600                | #5   | 1-1/4"      | 2-3/8"        | 0.2055" | 4.19        |
| 7006601                | #4   | 1-1/4"      | 2-3/8"        | 0.209"  | 4.19        |
| 7006602                | #3   | 1-1/4"      | 2-3/8"        | 0.213"  | 4.58        |
| 7006604                | #2   | 1-5/16"     | 2-7/16"       | 0.221"  | 4.58        |
| 7006605                | #1   | 1-5/16"     | 2-7/16"       | 0.228"  | 4.58        |

## TOOL REPAIR

- Repair centers located throughout North America
- Repair parts and accessories available
- We repair more than 5000 tools per month making us one of the largest non-factory repair companies in North America
- We can tailor a custom repair program to meet your needs
- Repair centers are warranty authorized center for most common brands
- Pre-Approved pricing structure to expedite repairs
- 90 day warranty on all repairs!
- Preventative maintenance programs available

# HSS AND COBALT DRILL BITS

## Cobalt Drill Bits Cont. 135° Mechanics Length



| Size   | Decimal   | Overall Lgth. | Cle-Line Series 1875 Black and Gold |             | Norseman Series 175 AG Black and Gold |             | Cle-Line Series 1880 Cobalt Straw Left Hand |             |
|--------|-----------|---------------|-------------------------------------|-------------|---------------------------------------|-------------|---|-------------|
|        |           |               | Part No.                            | Price /Each | Part No.                              | Price /Each | Part No.                                    | Price /Each |
| 1/16"  | 0.0625"   | 1.875"        | 7012070                             | \$0.97      | 0346432                               | \$1.27      |   |             |
| 5/64"  | 0.078125" | 2"            | 7012071                             | 1.02        | 0346433                               | 1.32        | 0355223                                     | \$2.07      |
| 3/32"  | 0.09375"  | 2.25"         | 7012072                             | 1.04        | 0346434                               | 1.34        |   |             |
| 7/64"  | 0.109375" | 2.625"        | 7012073                             | 1.06        | 0346435                               | 1.44        | 0355224                                     | 2.22        |
| 1/8"   | 0.125"    | 2.75"         | 7012074                             | 1.10        | 0346436                               | 1.71        | 0355225                                     | 2.43        |
| 9/64"  | 0.140625" | 2.875"        | 7012075                             | 1.14        | 0346437                               | 1.73        |   |             |
| 5/32"  | 0.15625"  | 3.125"        | 7012076                             | 1.24        | 0346438                               | 1.84        | 0355226                                     | 2.63        |
| 11/64" | 0.171875" | 3.25"         | 7012077                             | 1.32        | 0346439                               | 1.92        |   |             |
| 3/16"  | 0.1875"   | 3.5"          | 7012078                             | 1.58        | 0346440                               | 2.54        | 0355227                                     | 3.11        |
| 13/64" | 0.203125" | 3.625"        | 7012079                             | 1.66        | 0346441                               | 2.79        |   |             |
| 7/32"  | 0.21875"  | 3.75"         | 7012080                             | 1.81        | 0346442                               | 2.85        | 0355228                                     | 3.63        |
| 15/64" | 0.234375" | 3.875"        | 7012081                             | 1.91        | 0346443                               | 3.07        |   |             |
| 1/4"-E | 0.25"     | 4"            | 7012082                             | 2.03        | 0346444                               | 3.45        | 0355229                                     | 3.97        |
| 17/64" | 0.265625" | 4.125"        | 7012083                             | 2.49        | 0346445                               | 4.02        |   |             |
| 9/32"  | 0.28125"  | 4.25"         | 7012084                             | 2.79        | 0346446                               | 4.28        |   |             |
| 19/64" | 0.296875" | 4.375"        | 7012085                             | 3.11        | 0346447                               | 4.77        | 0355230                                     | 5.83        |
| 5/16"  | 0.3125"   | 4.5"          | 7012086                             | 3.22        | 0346448                               | 5.02        |   |             |
| 21/64" | 0.328125" | 4.625"        | 7012087                             | 3.49        | 0346449                               | 5.38        |   |             |
| 11/32" | 0.34375"  | 4.75"         | 7012088                             | 3.90        | 0346450                               | 6.86        |   |             |
| 23/64" | 0.359375" | 4.875"        | 7012089                             | 4.42        | 0346451                               | 7.61        |   |             |
| 3/8"   | 0.375"    | 5"            | 7012090                             | 4.57        | 0346452                               | 7.84        | 0355231                                     | 8.96        |
| 25/64" | 0.390625" | 5.125"        | 7012091                             | 5.18        | 0346453                               | 8.96        |   |             |
| 13/32" | 0.40625"  | 5.25"         | 7012092                             | 5.31        | 0346454                               | 9.26        | 0355232                                     | 10.04       |
| 27/64" | 0.421875" | 5.375"        | 7012093                             | 5.78        | 0346455                               | 10.25       |   |             |
| 7/16"  | 0.4375"   | 5.5"          | 7012094                             | 6.33        | 0346456                               | 10.62       | 0355233                                     | 11.72       |
| 29/64" | 0.453125" | 5.625"        | 7012095                             | 7.13        | 0346457                               | 11.92       |   |             |
| 15/32" | 0.46875"  | 5.75"         | 7012096                             | 7.29        | 0346458                               | 12.67       |   |             |
| 31/64" | 0.484375" | 5.875"        | 7012097                             | 7.74        | 0346459                               | 13.46       |   |             |
| 1/2"   | 0.5"      | 6"            | 7012098                             | 7.89        | 0346460                               | 13.66       | 0355234                                     | 14.49       |



### Sets

| Contents                  | Cle-Line 1875 |             | Cle-Line 1876 3/8 Shank |             | Norseman 130-AG |             |
|---------------------------|---------------|-------------|-------------------------|-------------|-----------------|-------------|
|                           | Part No.      | Price /Each | Part No.                | Price /Each | Part No.        | Price /Each |
| 1/16-1/4 x 64ths (13 pc.) | 7012748       | \$21.62     |                         |             | 0311144         | \$29.56     |
| 1/16-1/2 x 32nds (15 pc.) | 7012749       | 55.35       |                         |             | 0311145         | 83.82       |
| 1/16-3/8 x 64ths (21 pc.) | 7012750       | 53.34       |                         |             | 0311146         | 74.13       |
| 1/16-1/2 x 64ths (29 pc.) | 7012751       | 101.81      | 7012752                 | \$107.71    | 0311147         | 152.37      |

## HSS Drill Bits 118° Taper Length Drills



### Fractional Sizes

| Size   | Decimal   | Flute Lgth. | Overall Lgth. | CL Series 120 Black 118° |             | Norseman Series 220 Black 118° |             |
|--------|-----------|-------------|---------------|--------------------------|-------------|--------------------------------|-------------|
|        |           |             |               | Part No.                 | Price /Each | Part No.                       | Price /Each |
| 1/64"  | 0.015625" | 5/16"       | 1-1/2"        | 0356383                  | \$4.06      |                                |             |
| 1/32"  | 0.03125"  | 3/4"        | 2"            | 0356384                  | 2.89        |                                |             |
| 3/64"  | 0.046875" | 1-1/8"      | 2-1/4"        | 0356385                  | 2.12        |                                |             |
| 1/16"  | 0.0625"   | 1-3/4"      | 3"            | 0356386                  | 2.16        |                                |             |
| 5/64"  | 0.078125" | 2"          | 3-3/4"        | 0356387                  | 2.44        |                                |             |
| 3/32"  | 0.09375"  | 2-1/4"      | 4-1/4"        | 0356388                  | 2.84        |                                |             |
| 7/64"  | 0.109375" | 2.5"        | 4-5/8"        | 0356389                  | 3.59        |                                |             |
| 1/8"   | 0.125"    | 2-3/4"      | 5-1/8"        | 0356390                  | 3.64        | 0312570                        | \$6.52      |
| 9/64"  | 0.140625" | 3           | 5-3/8"        | 0356391                  | 4.18        | 0312571                        | 7.68        |
| 5/32"  | 0.15625"  | 3           | 5-3/8"        | 0356392                  | 4.38        | 0312572                        | 6.99        |
| 11/64" | 0.1719"   | 3-3/8"      | 5-3/4"        | 0356393                  | 4.44        | 0312573                        | 8.19        |
| 3/16"  | 0.1875"   | 3-3/8"      | 5-3/4"        | 0356394                  | 4.32        | 0312574                        | 6.99        |
| 13/64" | 0.2031"   | 3-5/8"      | 6"            | 0356395                  | 5.01        | 0312575                        | 9.35        |
| 7/32"  | 0.2188"   | 3-5/8"      | 6"            | 0356396                  | 4.96        | 0312576                        | 9.96        |
| 15/64" | 0.2344"   | 3-3/4"      | 6-1/8"        | 0356397                  | 5.15        | 0312577                        | 9.96        |
| 1/4"   | 0.2500"   | 3-3/4"      | 6-1/8"        | 0356398                  | 5.17        | 0312578                        | 8.88        |
| 17/64" | 0.2656"   | 3-7/8"      | 6-1/4"        | 0356421                  | 5.85        | 0312579                        | 10.65       |
| 9/32"  | 0.2812"   | 3-7/8"      | 6-1/4"        | 0356422                  | 6.01        | 0312580                        | 10.65       |
| 19/64" | 0.2969"   | 4           | 6-3/8"        | 0356423                  | 6.27        | 0312581                        | 11.42       |
| 5/16"  | 0.3125"   | 4           | 6-3/8"        | 0356424                  | 6.33        | 0312582                        | 11.28       |
| 21/64" | 0.3281"   | 4-1/8"      | 6-1/2"        | 0356425                  | 7.23        | 0312583                        | 11.85       |
| 11/32" | 0.3438"   | 4-1/8"      | 6-1/2"        | 0356426                  | 7.28        | 0312584                        | 12.43       |
| 23/64" | 0.3594"   | 4-1/4"      | 6-3/4"        | 0356427                  | 8.44        | 0312585                        | 14.20       |
| 3/8"   | 0.3750"   | 4-1/4"      | 6-3/4"        | 0356428                  | 8.52        | 0312586                        | 14.20       |
| 25/64" | 0.3906"   | 4-3/8"      | 7"            | 0356429                  | 9.30        | 0312587                        | 15.41       |
| 13/32" | 0.4062"   | 4-3/8"      | 7"            | 0356430                  | 9.44        | 0312588                        | 15.41       |
| 27/64" | 0.4219"   | 4-5/8"      | 7-1/4"        | 0356431                  | 10.08       | 0312589                        | 16.60       |
| 7/16"  | 0.4375"   | 4-5/8"      | 7-1/4"        | 0356432                  | 10.08       | 0312590                        | 16.60       |
| 29/64" | 0.4531"   | 4-3/4"      | 7-1/2"        | 0356433                  | 11.62       | 0312591                        | 18.96       |
| 15/32" | 0.4688"   | 4-3/4"      | 7-1/2"        | 0356434                  | 11.76       | 0312592                        | 19.54       |
| 31/64" | 0.4844"   | 4-3/4"      | 7-3/4"        | 0356435                  | 12.40       | 0312593                        | 21.35       |
| 1/2"   | 0.5000"   | 4-3/4"      | 7-3/4"        | 0356436                  | 12.40       | 0312594                        | 22.51       |
| 33/64" | 0.5156"   | 4-3/4"      | 8"            | 0356437                  | 16.88       | 0312595                        | 30.89       |
| 17/32" | 0.5312"   | 4-3/4"      | 8"            | 0356438                  | 17.02       | 0312596                        | 30.16       |
| 35/64" | 0.5469"   | 4-7/8"      | 8-1/4"        | 0356439                  | 18.34       | 0312597                        | 34.58       |
| 9/16"  | 0.5625"   | 4-7/8"      | 8-1/4"        | 0356440                  | 18.46       | 0312598                        | 31.83       |
| 37/64" | 0.5781"   | 4-7/8"      | 8-3/4"        | 0356441                  | 21.24       | 0312599                        | 38.93       |
| 19/32" | 0.5938"   | 4-7/8"      | 8-3/4"        | 0356442                  | 21.64       | 0312600                        | 38.93       |
| 39/64" | 0.6094"   | 4-7/8"      | 8-3/4"        | 0356443                  | 21.95       | 0312601                        | 41.03       |
| 5/8"   | 0.6250"   | 4-7/8"      | 8-3/4"        | 0356444                  | 22.00       | 0312602                        | 38.93       |
| 41/64" | 0.6406"   | 5-1/8"      | 9"            | 0356445                  | 24.54       | 0312603                        | 46.28       |
| 21/32" | 0.6562"   | 5-1/8"      | 9"            | 0356446                  | 24.68       | 0312604                        | 44.62       |
| 43/64" | 0.6719"   | 5-3/8"      | 9-1/4"        | 0356447                  | 28.50       | 0312605                        | 49.88       |
| 11/16" | 0.6875"   | 5-3/8"      | 9-1/4"        | 0356448                  | 28.70       | 0312606                        | 47.92       |
| 45/64" | 0.703125" | 5-5/8"      | 9-1/2"        | 0356449                  | 29.76       |                                |             |
| 23/32" | 0.71875"  | 5-5/8"      | 9-1/2"        | 0356450                  | 29.97       |                                |             |
| 47/64" | 0.734375" | 5-7/8"      | 9-3/4"        | 0356451                  | 31.60       |                                |             |
| 3/4"   | 0.75"     | 5-7/8"      | 9-3/4"        | 0356452                  | 31.79       |                                |             |
| 49/64" | 0.765625" | 6"          | 9-7/8"        | 0356453                  | 34.61       |                                |             |
| 25/32" | 0.78125"  | 6"          | 9-7/8"        | 0356454                  | 35.25       |                                |             |
| 51/64" | 0.796875" | 6-1/8"      | 10"           | 0356455                  | 38.79       |                                |             |
| 13/16" | 0.8125"   | 6-1/8"      | 10"           | 0356456                  | 38.58       |                                |             |
| 53/64" | 0.828125" | 6-1/8"      | 10"           | 0356457                  | 39.89       |                                |             |
| 27/32" | 0.84375"  | 6-1/8"      | 10"           | 0356458                  | 40.63       |                                |             |
| 55/64" | 0.859375" | 6-1/8"      | 10"           | 0356459                  | 41.95       |                                |             |
| 7/8"   | 0.875"    | 6-1/8"      | 10"           | 0356460                  | 42.37       |                                |             |
| 57/64" | 0.890625" | 6-1/8"      | 10"           | 0356461                  | 44.84       |                                |             |
| 29/32" | 0.90625"  | 6-1/8"      | 10"           | 0356462                  | 44.84       |                                |             |
| 59/64" | 0.921875" | 6-1/8"      | 10-3/4"       | 0356463                  | 48.14       |                                |             |
| 15/16" | 0.9375"   | 6-1/8"      | 10-3/4"       | 0356464                  | 48.27       |                                |             |
| 61/64" | 0.953125" | 6-3/8"      | 11"           | 0356465                  | 52.77       |                                |             |
| 31/32" | 0.96875"  | 6-3/8"      | 11"           | 0356466                  | 53.30       |                                |             |
| 63/64" | 0.984375" | 6-3/8"      | 11"           | 0356467                  | 55.40       |                                |             |
| 1"     | 1"        | 6-3/8"      | 11"           | 0356468                  | 55.66       |                                |             |

Cutting Tools

The : symbol after a price denotes that it is a Direct Ship Product (DSP) and shipping, availability & lead times may vary.

# HSS AND COBALT DRILL BITS

## HSS Drill Bits Cont.

### 118° Taper Length Drills Cont.



Chicago-Latrobe®

#### Wire Sizes

| Size | Decimal | Flute Lgth. | Overall Lgth. | (CL) Series 120 Black 118° |             |
|------|---------|-------------|---------------|----------------------------|-------------|
|      |         |             |               | Part No.                   | Price /Each |
| #60  | 0.04"   | 1.125"      | 2.25"         | 0356528                    | \$2.69      |
| #59  | 0.041"  | 1.125"      | 2.25"         | 0356527                    | 2.69        |
| #58  | 0.042"  | 1.125"      | 2.25"         | 0356526                    | 2.69        |
| #57  | 0.043"  | 1.125"      | 2.25"         | 0356525                    | 2.69        |
| #56  | 0.0465" | 1.125"      | 2.25"         | 0356524                    | 2.69        |
| #55  | 0.052"  | 1.75"       | 3"            | 0356523                    | 2.69        |
| #54  | 0.055"  | 1.75"       | 3"            | 0356522                    | 2.69        |
| #53  | 0.0595" | 1.75"       | 3"            | 0356521                    | 2.69        |
| #52  | 0.0635" | 2"          | 3.75"         | 0356520                    | 2.69        |
| #51  | 0.067"  | 2"          | 3.75"         | 0356519                    | 2.69        |
| #50  | 0.07"   | 2"          | 3.75"         | 0356518                    | 2.69        |
| #49  | 0.073"  | 2"          | 3.75"         | 0356517                    | 2.69        |
| #48  | 0.076"  | 2"          | 3.75"         | 0356516                    | 2.69        |
| #47  | 0.0785" | 2.25"       | 4.25"         | 0356515                    | 3.41        |
| #46  | 0.081"  | 2.25"       | 4.25"         | 0356514                    | 3.41        |
| #45  | 0.082"  | 2.25"       | 4.25"         | 0356513                    | 3.41        |
| #44  | 0.086"  | 2.25"       | 4.25"         | 0356512                    | 3.41        |
| #43  | 0.089"  | 2.25"       | 4.25"         | 0356511                    | 3.41        |
| #42  | 0.0935" | 2.25"       | 4.25"         | 0356510                    | 3.41        |
| #41  | 0.096"  | 2.5"        | 4.625"        | 0356509                    | 4.11        |
| #40  | 0.098"  | 2.5"        | 4.625"        | 0356508                    | 4.11        |
| #39  | 0.0995" | 2.5"        | 4.625"        | 0356507                    | 4.11        |
| #38  | 0.1015" | 2.5"        | 4.625"        | 0356506                    | 4.68        |
| #37  | 0.104"  | 2.5"        | 4.625"        | 0356505                    | 4.68        |
| #36  | 0.1065" | 2.5"        | 4.625"        | 0356504                    | 4.68        |
| #35  | 0.11"   | 2.75"       | 5.125"        | 0356503                    | 5.89        |
| #34  | 0.111"  | 2.75"       | 5.125"        | 0356502                    | 5.89        |
| #33  | 0.113"  | 2.75"       | 5.125"        | 0356501                    | 5.89        |
| #32  | 0.116"  | 2.75"       | 5.125"        | 0356500                    | 5.89        |
| #31  | 0.12"   | 2.75"       | 5.125"        | 0356499                    | 5.89        |
| #30  | 0.1285" | 3"          | 5.375"        | 0356498                    | 5.97        |
| #29  | 0.136"  | 3"          | 5.375"        | 0356497                    | 5.97        |
| #28  | 0.1405" | 3"          | 5.375"        | 0356496                    | 5.97        |
| #27  | 0.144"  | 3"          | 5.375"        | 0356495                    | 5.97        |
| #26  | 0.147"  | 3"          | 5.375"        | 0356494                    | 5.97        |
| #25  | 0.1495" | 3"          | 5.375"        | 0356493                    | 5.97        |
| #24  | 0.152"  | 3"          | 5.375"        | 0356492                    | 6.13        |
| #23  | 0.154"  | 3"          | 5.375"        | 0356491                    | 6.13        |
| #22  | 0.157"  | 3.375"      | 5.75"         | 0356490                    | 6.13        |
| #21  | 0.159"  | 3.375"      | 5.75"         | 0356489                    | 6.13        |
| #20  | 0.161"  | 3.375"      | 5.75"         | 0356488                    | 6.13        |
| #19  | 0.166"  | 3.375"      | 5.75"         | 0356487                    | 6.14        |
| #18  | 0.1695" | 3.375"      | 5.75"         | 0356486                    | 6.14        |
| #17  | 0.173"  | 3.375"      | 5.75"         | 0356485                    | 6.14        |
| #16  | 0.177"  | 3.375"      | 5.75"         | 0356484                    | 6.14        |
| #15  | 0.18"   | 3.375"      | 5.75"         | 0356483                    | 6.14        |
| #14  | 0.182"  | 3.375"      | 5.75"         | 0356482                    | 6.14        |
| #13  | 0.185"  | 3.375"      | 5.75"         | 0356481                    | 6.14        |
| #12  | 0.189"  | 3.625"      | 6"            | 0356480                    | 6.59        |
| #11  | 0.191"  | 3.625"      | 6"            | 0356479                    | 6.59        |
| #10  | 0.1935" | 3.625"      | 6"            | 0356478                    | 6.59        |
| #9   | 0.196"  | 3.625"      | 6"            | 0356477                    | 6.70        |
| #8   | 0.199"  | 3.625"      | 6"            | 0356476                    | 6.72        |
| #7   | 0.201"  | 3.625"      | 6"            | 0356475                    | 6.72        |
| #6   | 0.204"  | 3.625"      | 6"            | 0356474                    | 6.72        |
| #5   | 0.2055" | 3.625"      | 6"            | 0356473                    | 6.72        |
| #4   | 0.209"  | 3.625"      | 6"            | 0356472                    | 6.72        |
| #3   | 0.213"  | 3.625"      | 6"            | 0356471                    | 6.72        |
| #2   | 0.221"  | 3.75"       | 6.125"        | 0356470                    | 6.80        |
| #1   | 0.228"  | 3.75"       | 6.125"        | 0356469                    | 6.80        |

#### Letter Sizes

| Size  | Decimal | Flute Lgth. | Overall Lgth. | (CL) Series 120 Black 118° |             |
|-------|---------|-------------|---------------|----------------------------|-------------|
|       |         |             |               | Part No.                   | Price /Each |
| Ltr A | 0.234"  | 3.75"       | 6.125"        | 0356529                    | \$7.81      |
| Ltr B | 0.238"  | 3.75"       | 6.125"        | 0356530                    | 7.86        |
| Ltr C | 0.242"  | 3.75"       | 6.125"        | 0356531                    | 7.86        |
| Ltr D | 0.246"  | 3.75"       | 6.125"        | 0356532                    | 7.86        |
| Ltr F | 0.257"  | 3.875"      | 6.25"         | 0356533                    | 8.01        |
| Ltr G | 0.261"  | 3.875"      | 6.25"         | 0356534                    | 8.44        |
| Ltr H | 0.266"  | 3.875"      | 6.25"         | 0356535                    | 8.50        |
| Ltr I | 0.272"  | 3.875"      | 6.25"         | 0356536                    | 8.55        |
| Ltr J | 0.277"  | 3.875"      | 6.25"         | 0356537                    | 8.61        |
| Ltr K | 0.2812" | 3.875"      | 6.25"         | 0356538                    | 8.66        |
| Ltr L | 0.29"   | 4"          | 6.375"        | 0356539                    | 8.71        |
| Ltr M | 0.295"  | 4"          | 6.375"        | 0356540                    | 8.98        |
| Ltr N | 0.302"  | 4"          | 6.375"        | 0356541                    | 9.03        |
| Ltr O | 0.316"  | 4.125"      | 6.5"          | 0356542                    | 9.07        |
| Ltr P | 0.323"  | 4.125"      | 6.5"          | 0356543                    | 9.19        |
| Ltr Q | 0.332"  | 4.125"      | 6.5"          | 0356544                    | 9.23        |
| Ltr R | 0.339"  | 4.125"      | 6.5"          | 0356545                    | 9.65        |
| Ltr S | 0.348"  | 4.25"       | 6.75"         | 0356546                    | 9.81        |
| Ltr T | 0.358"  | 4.25"       | 6.75"         | 0356547                    | 9.89        |
| Ltr U | 0.368"  | 4.25"       | 6.75"         | 0356548                    | 10.13       |
| Ltr V | 0.377"  | 4.375"      | 7"            | 0356549                    | 10.29       |
| Ltr W | 0.386"  | 4.375"      | 7"            | 0356550                    | 10.34       |
| Ltr X | 0.397"  | 4.375"      | 7"            | 0356551                    | 10.69       |
| Ltr Y | 0.404"  | 4.375"      | 7"            | 0356552                    | 10.77       |
| Ltr Z | 0.413"  | 4.625"      | 7.25"         | 0356553                    | 11.22       |



Chicago-Latrobe®

### 118°, HSS Taper Shank Drill - CL 110 Series

- General Purpose drilling for a wide range of operating conditions and various materials
- Black Oxide surface finish increases wear resistance and the added lubricity improves the chip flow
- Premium High Speed Steel
- These are for use in corresponding taper holders.



| Size   | Decimal   | Flute Lgth. | Overall Lgth. | Part No. | Price /Each |
|--------|-----------|-------------|---------------|----------|-------------|
| 3/8"   | 0.375"    | 3.5"        | 6.75"         | 7005598  | \$21.74     |
| 25/64" | 0.390625" | 3.625"      | 7"            | 7005599  | 22.57       |
| 13/32" | 0.40625"  | 3.625"      | 7"            | 7005600  | 22.26       |
| 27/64" | 0.421875" | 3.875"      | 7.25"         | 7005601  | 24.26       |
| 7/16"  | 0.4375"   | 3.875"      | 7.25"         | 7005602  | 24.19       |
| 29/64" | 0.453125" | 4.125"      | 7.5"          | 7005603  | 27.61       |
| 15/32" | 0.46875"  | 4.125"      | 7.5"          | 7005604  | 27.83       |
| 31/64" | 0.484375" | 4.375"      | 8.25"         | 7005605  | 28.19       |
| 1/2"   | 0.5"      | 4.375"      | 8.25"         | 7005606  | 28.41       |
| 33/64" | 0.515625" | 4.625"      | 8.5"          | 7005607  | 28.94       |
| 17/32" | 0.53125"  | 4.625"      | 8.5"          | 7005608  | 29.97       |
| 35/64" | 0.546875" | 4.875"      | 8.75"         | 7005609  | 32.21       |
| 9/16"  | 0.5625"   | 4.875"      | 8.75"         | 7005610  | 32.95       |
| 37/64" | 0.578125" | 4.875"      | 8.75"         | 7005611  | 34.81       |
| 19/32" | 0.59375"  | 4.875"      | 8.75"         | 7005612  | 35.17       |
| 39/64" | 0.609375" | 4.875"      | 8.75"         | 7005613  | 35.84       |
| 5/8"   | 0.625"    | 4.875"      | 8.75"         | 7005614  | 35.92       |
| 41/64" | 0.640625" | 5.125"      | 9"            | 7005615  | 39.40       |
| 21/32" | 0.65625"  | 5.125"      | 9"            | 7005616  | 40.24       |
| 43/64" | 0.671875" | 5.375"      | 9.25"         | 7005617  | 41.55       |
| 11/16" | 0.6875"   | 5.375"      | 9.25"         | 7005618  | 42.01       |
| 45/64" | 0.703125" | 5.625"      | 9.5"          | 7005619  | 44.76       |
| 23/32" | 0.71875"  | 5.625"      | 9.5"          | 7005620  | 44.99       |
| 47/64" | 0.734375" | 5.875"      | 9.75"         | 7005621  | 49.34       |
| 3/4"   | 0.75"     | 5.875"      | 9.75"         | 7005622  | 50.25       |
| 49/64" | 0.765625" | 6"          | 9.875"        | 7005623  | 54.32       |
| 25/32" | 0.78125"  | 6"          | 9.875"        | 7005624  | 56.02       |
| 51/64" | 0.796875" | 6.125"      | 10.75"        | 7005625  | 57.65       |



# HSS AND COBALT DRILL BITS

## HSS Drill Bits Cont.

| Size     | Decimal   | Flute Lgth. | Overall Lgth. | Part No. | Price /Each |
|----------|-----------|-------------|---------------|----------|-------------|
| 13/16"   | 0.8125"   | 6.125"      | 10.75"        | 7005626  | \$58.54     |
| 53/64"   | 0.828125" | 6.125"      | 10.75"        | 7005627  | 61.88       |
| 27/32"   | 0.84375"  | 6.125"      | 10.75"        | 7005628  | 62.62       |
| 55/64"   | 0.859375" | 6.125"      | 10.75"        | 7005629  | 64.33       |
| 7/8"     | 0.875"    | 6.125"      | 10.75"        | 7005630  | 65.14       |
| 57/64"   | 0.890625" | 6.125"      | 10.75"        | 7005631  | 67.89       |
| 29/32"   | 0.90625"  | 6.125"      | 10.75"        | 7005632  | 68.79       |
| 59/64"   | 0.921875" | 6.125"      | 10.75"        | 7005633  | 69.52       |
| 15/16"   | 0.9375"   | 6.125"      | 10.75"        | 7005634  | 70.43       |
| 61/64"   | 0.953125" | 6.375"      | 11"           | 7005635  | 71.24       |
| 31/32"   | 0.96875"  | 6.375"      | 11"           | 7005636  | 72.14       |
| 63/64"   | 0.984375" | 6.375"      | 11"           | 7005637  | 72.86       |
| 1"       | 1"        | 6.375"      | 11"           | 7005638  | 73.82       |
| 1-1/32"  | 1.03125"  | 6.5"        | 11.125"       | 7005639  | 79.54       |
| 1-1/16"  | 1.0625"   | 6.625"      | 11.25"        | 7005640  | 83.09       |
| 1-3/32"  | 1.09375"  | 6.875"      | 12.5"         | 7005641  | 97.59       |
| 1-1/8"   | 1.125"    | 7.125"      | 12.75"        | 7005642  | 101.66      |
| 1-5/32"  | 1.15625"  | 7.25"       | 12.875"       | 7005643  | 106.46      |
| 1-3/16"  | 1.1875"   | 7.375"      | 13"           | 7005644  | 111.22      |
| 1-7/32"  | 1.21875"  | 7.5"        | 13.125"       | 7005645  | 117.83      |
| 1-1/4"   | 1.25"     | 7.875"      | 13.5"         | 7005646  | 122.58      |
| 1-9/32"  | 1.28125"  | 8.5"        | 14.125"       | 7005647  | 155.60      |
| 1-5/16"  | 1.3125"   | 8.625"      | 14.25"        | 7005648  | 159.53      |
| 1-11/32" | 1.34375"  | 8.75"       | 14.375"       | 7005649  | 165.84      |
| 1-3/8"   | 1.375"    | 8.875"      | 14.5"         | 7005650  | 168.80      |
| 1-13/32" | 1.40625"  | 9"          | 14.625"       | 7005651  | 177.71      |
| 1-7/16"  | 1.4375"   | 9.125"      | 14.75"        | 7005652  | 179.28      |
| 1-15/32" | 1.46875"  | 9.25"       | 14.875"       | 7005653  | 188.40      |
| 1-1/2"   | 1.5"      | 9.375"      | 15"           | 7005654  | 197.66      |
| 1-17/32" | 1.53125"  | 9.375"      | 16.375"       | 7005655  | 240.42      |
| 1-9/16"  | 1.5625"   | 9.625"      | 16.625"       | 7005656  | 248.37      |
| 1-19/32" | 1.59375"  | 9.875"      | 16.875"       | 7005657  | 268.77      |

| Size     | Decimal  | Flute Lgth. | Overall Lgth. | Part No. | Price /Each |
|----------|----------|-------------|---------------|----------|-------------|
| 1-5/8"   | 1.625"   | 10"         | 17"           | 7005658  | \$268.77    |
| 1-21/32" | 1.65625" | 10.125"     | 17.125"       | 7005659  | 293.08      |
| 1-11/16" | 1.6875"  | 10.125"     | 17.125"       | 7005660  | 293.09      |
| 1-23/32" | 1.71875" | 10.125"     | 17.125"       | 7005661  | 301.26      |
| 1-3/4"   | 1.75"    | 10.125"     | 17.125"       | 7005662  | 301.26      |
| 1-25/32" | 1.78125" | 10.125"     | 17.125"       | 7005663  | 333.99      |
| 1-13/16" | 1.8125"  | 10.125"     | 17.125"       | 7005664  | 339.55      |
| 1-27/32" | 1.84375" | 10.125"     | 17.125"       | 7005665  | 355.35      |
| 1-7/8"   | 1.875"   | 10.375"     | 17.375"       | 7005666  | 361.44      |
| 1-29/32" | 1.90625" | 10.375"     | 17.375"       | 7005667  | 376.79      |
| 1-15/16" | 1.9375"  | 10.375"     | 17.375"       | 7005668  | 380.50      |
| 1-31/32" | 1.96875" | 10.375"     | 17.375"       | 7005669  | 388.22      |
| 2"       | 2"       | 10.375"     | 17.375"       | 7005670  | 399.65      |
| 2-1/32"  | 2.03125" | 10.375"     | 17.375"       | 7005671  | 458.64      |
| 2-1/16"  | 2.0625"  | 10.25"      | 17.375"       | 7005672  | 463.01      |
| 2-3/32"  | 2.09375" | 10.25"      | 17.375"       | 7005673  | 485.27      |
| 2-1/8"   | 2.125"   | 10.25"      | 17.375"       | 7005674  | 490.68      |
| 2-5/32"  | 2.15625" | 10.25"      | 17.375"       | 7005675  | 527.12      |
| 2-3/16"  | 2.1875"  | 10.25"      | 17.375"       | 7005676  | 531.50      |
| 2-7/32"  | 2.21875" | 10.125"     | 17.375"       | 7005677  | 543.15      |
| 2-1/4"   | 2.25"    | 10.125"     | 17.375"       | 7005678  | 549.23      |
| 2-5/16"  | 2.3125"  | 10.125"     | 17.375"       | 7005679  | 598.21      |
| 2-3/8"   | 2.375"   | 10.125"     | 17.375"       | 7005680  | 603.47      |
| 2-7/16"  | 2.4375"  | 11.25"      | 18.75"        | 7005681  | 726.11      |
| 2-1/2"   | 2.5"     | 11.25"      | 18.75"        | 7005682  | 750.11      |
| 2-9/16"  | 2.5625"  | 11.875"     | 19.5"         | 7005683  | 826.59      |
| 2-5/8"   | 2.625"   | 11.875"     | 19.5"         | 7005684  | 853.31      |
| 2-11/16" | 2.6875"  | 12.75"      | 20.375"       | 7005685  | 865.04      |
| 2-3/4"   | 2.75"    | 12.75"      | 20.375"       | 7005686  | 908.96      |
| 2-13/16" | 2.8125"  | 13.375"     | 21.125"       | 7005687  | 926.91      |
| 2-7/8"   | 2.875"   | 13.375"     | 21.125"       | 7005688  | 1089.62     |
| 2-15/16" | 2.9375"  | 14"         | 21.75"        | 7005689  | 1183.86     |
| 3"       | 3.0"     | 14"         | 21.75"        | 7005690  | 1207.82     |



## 135°, Cobalt Q-AMD Heavy Duty Jobber Length Drill Bits - CTD 3780 Series

- Black Oxide surface finish increases wear resistance and the added lubricity improves the chip flow
- Titanium Carbonitride (TiCN) coating increases cutting surface hardness making the tool highly resistant to abrasive wear
- High Helix for more efficient chip removal and increases the shear at cutting edge
- Extra heavy web for superior rigidity
- Jobber Overall length, screw machine flute length provides extra strength, idea for aircraft portable applications
- Modified 135° splint point with high positive notch angle for self-centering, ease of penetration and minimizes work hardening
- Preferred point for stainless steel



| Size   | Decimal   | Flute Lgth. | Overall Lgth. | Part No. | Price /Each |
|--------|-----------|-------------|---------------|----------|-------------|
| 3/64"  | 0.046875" | 0.5"        | 1.75"         | 7002895  | \$2.74      |
| 1/16"  | 0.0625"   | 0.625"      | 1.875"        | 7002899  | 2.35        |
| 5/64"  | 0.078125" | 0.6875"     | 2"            | 7002905  | 2.39        |
| 3/32"  | 0.09375"  | 0.75"       | 2.25"         | 7002912  | 2.39        |
| 7/64"  | 0.109375" | 0.8125"     | 2.625"        | 7002919  | 2.48        |
| 1/8"   | 0.125"    | 0.875"      | 2.75"         | 7002925  | 2.74        |
| 9/64"  | 0.140625" | 0.9375"     | 2.875"        | 7002929  | 2.88        |
| 5/32"  | 0.15625"  | 1"          | 3.125"        | 7002935  | 3.23        |
| 11/64" | 0.171875" | 1.0625"     | 3.25"         | 7002941  | 3.41        |
| 3/16"  | 0.1875"   | 1.125"      | 3.5"          | 7002947  | 3.95        |
| 13/64" | 0.203125" | 1.1875"     | 3.625"        | 7002954  | 4.42        |
| 7/32"  | 0.21875"  | 1.25"       | 3.75"         | 7002959  | 5.03        |
| 15/64" | 0.234375" | 1.3125"     | 3.875"        | 7002963  | 5.28        |
| 1/4"-E | 0.25"     | 1.375"      | 4"            | 7002967  | 5.71        |
| 17/64" | 0.265625" | 1.4375"     | 4.125"        | 7002970  | 6.49        |
| 9/32"  | 0.28125"  | 1.5"        | 4.25"         | 7002975  | 6.84        |
| 19/64" | 0.296875" | 1.5625"     | 4.375"        | 7002978  | 8.96        |
| 5/16"  | 0.3125"   | 1.625"      | 4.5"          | 7002980  | 9.43        |
| 21/64" | 0.328125" | 1.6875"     | 4.625"        | 7002983  | 10.32       |
| 11/32" | 0.34375"  | 1.6875"     | 4.75"         | 7002986  | 11.25       |
| 23/64" | 0.359375" | 1.75"       | 4.875"        | 7002989  | 13.27       |
| 3/8"   | 0.375"    | 1.8125"     | 5"            | 7002991  | 12.87       |
| 25/64" | 0.390625" | 1.875"      | 5.125"        | 7002994  | 14.39       |
| 13/32" | 0.40625"  | 1.9375"     | 5.25"         | 7002997  | 15.99       |
| 27/64" | 0.421875" | 2"          | 5.375"        | 7002999  | 16.92       |
| 7/16"  | 0.4375"   | 2.0625"     | 5.5"          | 7003000  | 18.34       |
| 29/64" | 0.453125" | 2.125"      | 5.625"        | 7003001  | 20.26       |
| 15/32" | 0.46875"  | 2.125"      | 5.75"         | 7003002  | 20.77       |
| 31/64" | 0.484375" | 2.1875"     | 5.875"        | 7003003  | 21.26       |
| 1/2"   | 0.5"      | 2.25"       | 6"            | 7003004  | 21.47       |

## Wire

| Size | Decimal | Flute Lgth. | Overall Lgth. | Part No. | Price /Each |
|------|---------|-------------|---------------|----------|-------------|
| #1   | 0.228"  | 1.3125"     | 3.875"        | 7002961  | \$5.67      |
| #2   | 0.221"  | 1.3125"     | 3.875"        | 7002960  | 5.67        |
| #3   | 0.213"  | 1.25"       | 3.75"         | 7002958  | 5.26        |
| #4   | 0.209"  | 1.25"       | 3.75"         | 7002957  | 5.26        |
| #5   | 0.2055" | 1.25"       | 3.75"         | 7002956  | 5.26        |
| #6   | 0.204"  | 1.25"       | 3.75"         | 7002955  | 5.26        |
| #7   | 0.201"  | 1.1875"     | 3.625"        | 7002953  | 4.42        |
| #8   | 0.199"  | 1.1875"     | 3.625"        | 7002952  | 4.42        |
| #9   | 0.196"  | 1.1875"     | 3.625"        | 7002951  | 4.42        |
| #10  | 0.1935" | 1.1875"     | 3.625"        | 7002950  | 4.42        |
| #11  | 0.191"  | 1.1875"     | 3.5"          | 7002949  | 4.41        |
| #12  | 0.189"  | 1.1875"     | 3.5"          | 7002948  | 4.41        |
| #13  | 0.185"  | 1.125"      | 3.5"          | 7002946  | 4.06        |
| #14  | 0.182"  | 1.125"      | 3.375"        | 7002945  | 4.06        |
| #15  | 0.181"  | 1.125"      | 3.375"        | 7002944  | 4.06        |
| #16  | 0.177"  | 1.125"      | 3.375"        | 7002943  | 3.86        |
| #17  | 0.173"  | 1.125"      | 3.375"        | 7002942  | 3.86        |
| #18  | 0.1695" | 1.0625"     | 3.25"         | 7002940  | 3.41        |
| #19  | 0.166"  | 1.0625"     | 3.25"         | 7002939  | 3.40        |
| #20  | 0.161"  | 1.0625"     | 3.25"         | 7002938  | 3.24        |
| #21  | 0.159"  | 1.0625"     | 3.25"         | 7002937  | 3.24        |
| #22  | 0.157"  | 1.0625"     | 3.125"        | 7002936  | 3.24        |
| #23  | 0.154"  | 1"          | 3.125"        | 7002934  | 3.09        |
| #24  | 0.152"  | 1"          | 3.125"        | 7002933  | 3.07        |
| #25  | 0.1495" | 1"          | 3"            | 7002932  | 3.08        |
| #26  | 0.147"  | 1"          | 3"            | 7002931  | 3.09        |
| #27  | 0.144"  | 1"          | 3"            | 7002930  | 3.08        |
| #28  | 0.1405" | 0.9375"     | 2.875"        | 7002928  | 2.88        |
| #29  | 0.136"  | 0.9375"     | 2.875"        | 7002927  | 2.88        |
| #30  | 0.1285" | 0.9375"     | 2.75"         | 7002926  | 2.74        |
| #31  | 0.12"   | 0.875"      | 2.75"         | 7002924  | 2.74        |
| #32  | 0.116"  | 0.875"      | 2.75"         | 7002923  | 2.74        |
| #33  | 0.113"  | 0.875"      | 2.625"        | 7002922  | 2.58        |
| #34  | 0.111"  | 0.875"      | 2.625"        | 7002921  | 2.58        |
| #35  | 0.11"   | 0.875"      | 2.625"        | 7002920  | 2.58        |

The : symbol after a price denotes that it is a Direct Ship Product (DSP) and shipping, availability & lead times may vary.

# COBALT DRILL BITS

## Cobalt Drill Bits Cont.

Cutting Tools



### CTD 3780 - Cont.

#### Wire Cont.

| Size | Decimal | Flute Lgth. | Overall Lgth. | Part No. | Price /Each |
|------|---------|-------------|---------------|----------|-------------|
| #36  | 0.1065" | 0.8125"     | 2.5"          | 7002918  | \$2.58      |
| #37  | 0.104"  | 0.8125"     | 2.5"          | 7002917  | 2.58        |
| #38  | 0.1015" | 0.8125"     | 2.5"          | 7002916  | 2.39        |
| #39  | 0.0995" | 0.8125"     | 2.375"        | 7002915  | 2.39        |
| #40  | 0.098"  | 0.8125"     | 2.375"        | 7002914  | 2.35        |
| #41  | 0.096"  | 0.8125"     | 2.375"        | 7002913  | 2.39        |
| #42  | 0.0935" | 0.75"       | 2.25"         | 7002911  | 2.39        |
| #43  | 0.089"  | 0.75"       | 2.25"         | 7002910  | 2.39        |
| #44  | 0.086"  | 0.75"       | 2.125"        | 7002909  | 2.39        |
| #45  | 0.082"  | 0.75"       | 2.125"        | 7002908  | 2.39        |
| #46  | 0.081"  | 0.75"       | 2.125"        | 7002907  | 2.39        |
| #47  | 0.0785" | 0.6875"     | 2"            | 7002906  | 2.39        |
| #48  | 0.076"  | 0.6875"     | 2"            | 7002904  | 2.39        |
| #49  | 0.073"  | 0.6875"     | 2"            | 7002903  | 2.39        |
| #50  | 0.07"   | 0.6875"     | 2"            | 7002902  | 2.39        |
| #51  | 0.067"  | 0.6875"     | 2"            | 7002901  | 2.39        |
| #52  | 0.0635" | 0.6875"     | 1.875"        | 7002900  | 2.39        |
| #53  | 0.0595" | 0.625"      | 1.875"        | 7002898  | 2.74        |
| #54  | 0.055"  | 0.625"      | 1.875"        | 7002897  | 2.74        |
| #55  | 0.052"  | 0.625"      | 1.875"        | 7002896  | 2.74        |
| #56  | 0.0465" | 0.5"        | 1.75"         | 7002894  | 2.74        |
| #57  | 0.043"  | 0.5"        | 1.75"         | 7002893  | 3.29        |
| #58  | 0.042"  | 0.5"        | 1.625"        | 7002892  | 3.45        |
| #59  | 0.041"  | 0.5"        | 1.625"        | 7002891  | 3.45        |
| #60  | 0.04"   | 0.5"        | 1.625"        | 7002890  | 3.45        |

| Size Range       | CTD Black Oxide EDP | Part No. | Price /Each |
|------------------|---------------------|----------|-------------|
| #1-40 Wire 40 pc |                     | 7003438  | \$153.71    |

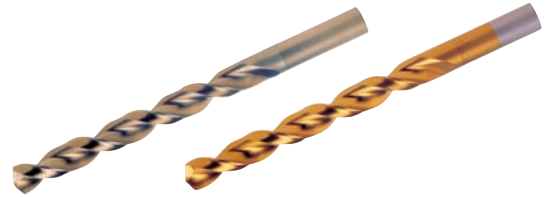
#### Letter

| Size  | Decimal | Flute Lgth. | Overall Lgth. | Part No. | Price /Each |
|-------|---------|-------------|---------------|----------|-------------|
| Ltr A | 0.234"  | 1.3125"     | 3.875"        | 7002962  | \$5.67      |
| Ltr B | 0.238"  | 1.375"      | 4"            | 7002964  | 6.08        |
| Ltr C | 0.242"  | 1.375"      | 4"            | 7002965  | 6.08        |
| Ltr D | 0.246"  | 1.375"      | 4"            | 7002966  | 6.08        |
| Ltr F | 0.257"  | 1.4375"     | 4.125"        | 7002968  | 6.32        |
| Ltr G | 0.261"  | 1.4375"     | 4.125"        | 7002969  | 6.49        |
| Ltr H | 0.266"  | 1.5"        | 4.125"        | 7002971  | 6.89        |
| Ltr I | 0.272"  | 1.5"        | 4.125"        | 7002972  | 7.09        |
| Ltr J | 0.277"  | 1.5"        | 4.125"        | 7002973  | 7.21        |
| Ltr K | 0.2812" | 1.5"        | 4.25"         | 7002974  | 7.49        |
| Ltr L | 0.29"   | 1.5625"     | 4.25"         | 7002976  | 9.31        |
| Ltr M | 0.295"  | 1.5625"     | 4.375"        | 7002977  | 9.31        |
| Ltr N | 0.302"  | 1.625"      | 4.375"        | 7002979  | 9.83        |
| Ltr O | 0.316"  | 1.6875"     | 4.5"          | 7002981  | 10.32       |
| Ltr P | 0.323"  | 1.6875"     | 4.625"        | 7002982  | 10.65       |
| Ltr Q | 0.332"  | 1.6875"     | 4.75"         | 7002984  | 11.45       |
| Ltr R | 0.339"  | 1.6875"     | 4.75"         | 7002985  | 11.45       |
| Ltr S | 0.348"  | 1.75"       | 4.875"        | 7002987  | 13.88       |
| Ltr T | 0.358"  | 1.75"       | 4.875"        | 7002988  | 13.88       |
| Ltr U | 0.368"  | 1.8125"     | 5"            | 7002990  | 13.88       |
| Ltr V | 0.377"  | 1.875"      | 5"            | 7002992  | 16.11       |
| Ltr W | 0.386"  | 1.875"      | 5.125"        | 7002993  | 16.11       |
| Ltr X | 0.397"  | 1.9375"     | 5.125"        | 7002995  | 16.11       |
| Ltr Y | 0.404"  | 1.9375"     | 5.25"         | 7002996  | 16.81       |
| Ltr Z | 0.413"  | 2"          | 5.25"         | 7002998  | 17.73       |



### 135°, Q-Cobalt Jobber Length Split Point Wide Land Parabolic Drills

- Straw surface finish
- Titanium Nitride ( TiN ) coating adds lubricity and hardness which enhances chip flow, finish hole quality and drill life
- 135° split point is self-centering, for reduced thrust and easier penetration
- Premium 8% Cobalt High Speed Steel ( M42 )
- Parabolic flute form and point combinations produces tighter hole tolerances, heightened chip breaking action and improved coolant flow for deep-hole drilling
- Wider flute spacing disperses chips away from the cutting edge more rapidly than conventional parabolic drills, resulting in tighter, more manageable chips and less chip packing
- Recommended for stainless steels, work hardening materials



#### Fractional

| Size   | Decimal   | Flute Lgth. | Overall Lgth. | CTD STRAW 2075 Series |             | CTD TiN 2075TiN Series |             |
|--------|-----------|-------------|---------------|-----------------------|-------------|------------------------|-------------|
|        |           |             |               | Part No.              | Price /Each | Part No.               | Price /Each |
| 1/16"  | 0.0625"   | 0.875"      | 1.875"        | 7003057               | \$4.46      | 7003138                | \$5.47      |
| 5/64"  | 0.078125" | 1"          | 2"            | 7003058               | 4.66        | 7003139                | 5.99        |
| 3/32"  | 0.09375"  | 1.25"       | 2.25"         | 7003059               | 5.17        | 7003140                | 6.94        |
| 7/64"  | 0.109375" | 1.5"        | 2.625"        | 7003060               | 5.43        | 7003141                | 7.41        |
| 1/8"   | 0.125"    | 1.625"      | 2.75"         | 7003061               | 5.58        | 7003142                | 7.40        |
| 9/64"  | 0.140625" | 1.75"       | 2.875"        | 7003062               | 6.49        | 7003143                | 8.62        |
| 5/32"  | 0.15625"  | 2"          | 3.125"        | 7003063               | 7.01        | 7003144                | 8.82        |
| 11/64" | 0.171875" | 2.125"      | 3.25"         | 7003064               | 7.80        | 7003145                | 10.24       |
| 3/16"  | 0.1875"   | 2.3125"     | 3.5"          | 7003065               | 8.10        | 7003146                | 10.37       |
| 13/64" | 0.203125" | 2.4375"     | 3.625"        | 7003066               | 10.52       | 7003147                | 12.92       |
| 7/32"  | 0.21875"  | 2.5"        | 3.75"         | 7003067               | 10.73       | 7003148                | 13.07       |
| 15/64" | 0.234375" | 2.625"      | 3.875"        | 7003068               | 11.34       | 7003149                | 13.88       |
| 1/4"-E | 0.25"     | 2.75"       | 4"            | 7003069               | 11.87       | 7003150                | 15.10       |
| 17/64" | 0.265625" | 2.875"      | 4.125"        | 7003070               | 13.48       | 7003151                | 17.33       |
| 9/32"  | 0.28125"  | 2.9375"     | 4.25"         | 7003071               | 14.70       | 7003152                | 18.13       |
| 19/64" | 0.296875" | 3.0625"     | 4.375"        | 7003072               | 16.93       | 7003153                | 21.38       |
| 5/16"  | 0.3125"   | 3.1875"     | 4.5"          | 7003073               | 18.02       | 7003154                | 22.59       |
| 21/64" | 0.328125" | 3.3125"     | 4.625"        | 7003074               | 18.54       | 7003155                | 23.08       |
| 11/32" | 0.34375"  | 3.4375"     | 4.75"         | 7003075               | 20.45       | 7003156                | 25.73       |
| 23/64" | 0.359375" | 3.5"        | 4.875"        | 7003076               | 23.08       | 7003157                | 28.96       |
| 3/8"   | 0.375"    | 3.625"      | 5"            | 7003077               | 25.12       | 7003158                | 31.10       |
| 25/64" | 0.390625" | 3.75"       | 5.125"        | 7003078               | 25.42       | 7003159                | 32.19       |
| 13/32" | 0.40625"  | 3.875"      | 5.25"         | 7003079               | 26.74       | 7003160                | 33.22       |
| 27/64" | 0.421875" | 3.9375"     | 5.375"        | 7003080               | 30.18       | 7003161                | 38.59       |
| 7/16"  | 0.4375"   | 4.0625"     | 5.5"          | 7003081               | 32.41       | 7003162                | 40.50       |
| 29/64" | 0.453125" | 4.1875"     | 5.625"        | 7003082               | 36.35       | 7003163                | 45.88       |
| 15/32" | 0.46875"  | 4.3125"     | 5.75"         | 7003083               | 38.58       | 7003164                | 48.00       |
| 31/64" | 0.484375" | 4.375"      | 5.875"        | 7003084               | 44.15       | 7003165                | 55.80       |
| 1/2"   | 0.5"      | 4.5"        | 6"            | 7003085               | 45.87       | 7003166                | 58.44       |



# HSS AND COBALT DRILL BITS

## Cobalt Drill Bits Cont.



### 135°, Q-Cobalt Jobber Length Split Point Wide Land Parabolic Drills - Cont.

| Wire |         |             |               | CTD STRAW<br>2075 Series |             | CTD TiN<br>2075TiN Series |             |
|------|---------|-------------|---------------|--------------------------|-------------|---------------------------|-------------|
| Size | Decimal | Flute Lgth. | Overall Lgth. | Part No.                 | Price /Each | Part No.                  | Price /Each |
| #1   | 0.228"  | 2.625"      | 3.875"        | 7003005                  | \$12.06     | 7003086                   | \$15.60     |
| #2   | 0.221"  | 2.625"      | 3.875"        | 7003006                  | 12.06       | 7003087                   | 15.60       |
| #3   | 0.213"  | 2.5"        | 3.75"         | 7003007                  | 11.25       | 7003088                   | 14.89       |
| #4   | 0.209"  | 2.5"        | 3.75"         | 7003008                  | 11.25       | 7003089                   | 14.89       |
| #5   | 0.2055" | 2.5"        | 3.75"         | 7003009                  | 11.25       | 7003090                   | 14.89       |
| #6   | 0.204"  | 2.5"        | 3.75"         | 7003010                  | 11.25       | 7003091                   | 14.89       |
| #7   | 0.201"  | 2.4375"     | 3.625"        | 7003011                  | 10.03       | 7003092                   | 14.89       |
| #8   | 0.199"  | 2.4375"     | 3.625"        | 7003012                  | 9.72        | 7003093                   | 14.89       |
| #9   | 0.196"  | 2.4375"     | 3.625"        | 7003013                  | 8.96        | 7003094                   | 12.00       |
| #10  | 0.1935" | 2.4375"     | 3.625"        | 7003014                  | 8.82        | 7003095                   | 12.00       |
| #11  | 0.191"  | 2.3125"     | 3.5"          | 7003015                  | 8.51        | 7003096                   | 11.55       |
| #12  | 0.189"  | 2.3125"     | 3.5"          | 7003016                  | 8.82        | 7003097                   | 11.95       |
| #13  | 0.185"  | 2.3125"     | 3.5"          | 7003017                  | 8.31        | 7003098                   | 10.94       |
| #14  | 0.182"  | 2.1875"     | 3.375"        | 7003018                  | 8.31        | 7003099                   | 10.94       |
| #15  | 0.18"   | 2.1875"     | 3.375"        | 7003019                  | 8.31        | 7003100                   | 10.94       |
| #16  | 0.177"  | 2.1875"     | 3.375"        | 7003020                  | 8.31        | 7003101                   | 10.94       |
| #17  | 0.173"  | 2.1875"     | 3.375"        | 7003021                  | 8.31        | 7003102                   | 10.94       |
| #18  | 0.1695" | 2.125"      | 3.25"         | 7003022                  | 7.70        | 7003103                   | 9.92        |
| #19  | 0.166"  | 2.125"      | 3.25"         | 7003023                  | 7.70        | 7003104                   | 9.92        |
| #20  | 0.161"  | 2.125"      | 3.25"         | 7003024                  | 7.70        | 7003105                   | 9.43        |
| #21  | 0.159"  | 2.125"      | 3.25"         | 7003025                  | 7.70        | 7003106                   | 9.43        |
| #22  | 0.157"  | 2"          | 3.125"        | 7003026                  | 7.70        | 7003107                   | 9.82        |
| #23  | 0.154"  | 2"          | 3.125"        | 7003027                  | 7.70        | 7003108                   | 9.82        |
| #24  | 0.152"  | 2"          | 3.125"        | 7003028                  | 7.70        | 7003109                   | 9.82        |
| #25  | 0.1495" | 1.875"      | 3"            | 7003029                  | 7.70        | 7003110                   | 9.82        |
| #26  | 0.147"  | 1.875"      | 3"            | 7003030                  | 7.69        | 7003111                   | 9.84        |
| #27  | 0.144"  | 1.875"      | 3"            | 7003031                  | 7.69        | 7003112                   | 9.84        |
| #28  | 0.1405" | 1.75"       | 2.875"        | 7003032                  | 6.89        | 7003113                   | 9.22        |
| #29  | 0.136"  | 1.75"       | 2.875"        | 7003033                  | 6.80        | 7003114                   | 9.22        |
| #30  | 0.1285" | 1.625"      | 2.75"         | 7003034                  | 6.80        | 7003115                   | 9.11        |
| #31  | 0.12"   | 1.625"      | 2.75"         | 7003035                  | 6.80        | 7003116                   | 9.11        |
| #32  | 0.116"  | 1.625"      | 2.75"         | 7003036                  | 5.52        | 7003117                   | 7.50        |
| #33  | 0.113"  | 1.5"        | 2.625"        | 7003037                  | 5.52        | 7003118                   | 7.50        |
| #34  | 0.111"  | 1.5"        | 2.625"        | 7003038                  | 5.52        | 7003119                   | 7.50        |
| #35  | 0.11"   | 1.5"        | 2.625"        | 7003039                  | 5.52        | 7003120                   | 7.50        |
| #36  | 0.1065" | 1.4375"     | 2.5"          | 7003040                  | 5.52        | 7003121                   | 7.50        |
| #37  | 0.104"  | 1.4375"     | 2.5"          | 7003041                  | 5.52        | 7003122                   | 7.50        |
| #38  | 0.1015" | 1.4375"     | 2.5"          | 7003042                  | 5.52        | 7003123                   | 7.50        |
| #39  | 0.0995" | 1.375"      | 2.375"        | 7003043                  | 5.52        | 7003124                   | 7.50        |
| #40  | 0.098"  | 1.375"      | 2.375"        | 7003044                  | 5.43        | 7003125                   | 7.20        |
| #41  | 0.096"  | 1.375"      | 2.375"        | 7003045                  | 5.43        | 7003126                   | 7.20        |
| #42  | 0.0935" | 1.25"       | 2.25"         | 7003046                  | 5.43        | 7003127                   | 7.20        |
| #43  | 0.089"  | 1.25"       | 2.25"         | 7003047                  | 5.43        | 7003128                   | 7.20        |
| #44  | 0.086"  | 1.125"      | 2.125"        | 7003048                  | 5.43        | 7003129                   | 7.20        |
| #45  | 0.082"  | 1.125"      | 2.125"        | 7003049                  | 5.43        | 7003130                   | 7.20        |
| #46  | 0.081"  | 1.125"      | 2.125"        | 7003050                  | 5.43        | 7003131                   | 7.20        |
| #47  | 0.0785" | 1"          | 2"            | 7003051                  | 5.22        | 7003132                   | 6.89        |
| #48  | 0.076"  | 1"          | 2"            | 7003052                  | 5.22        | 7003133                   | 6.89        |
| #49  | 0.073"  | 1"          | 2"            | 7003053                  | 5.22        | 7003134                   | 6.89        |
| #50  | 0.07"   | 1"          | 2"            | 7003054                  | 5.22        | 7003135                   | 6.89        |
| #51  | 0.067"  | 1"          | 2"            | 7003055                  | 5.22        | 7003136                   | 6.89        |
| #52  | 0.0635" | 0.875"      | 1.875"        | 7003056                  | 5.22        | 7003137                   | 6.89        |

## HSS Drill Bits



### 135° Notch, HSS Wide Land Parabolic Taper Length

- Bright finish provides good chip ejection
- Titanium Carbonitride ( TiCN ) coating increases cutting surface hardness making the tool highly resistant to abrasive wear
- 135° self centering with modified notch point provides greater stability, prevents walking and lessens work hardening, dramatically improving drill life
- Premium High Speed Steel
- Parabolic flute form and point combinations produces tighter hole tolerances, heightened chip breaking action and improved coolant flow for deep-hole drilling
- Wider flute spacing disperses chips away from the cutting edge more rapidly than conventional parabolic drills, resulting in tighter, more manageable chips and less chip packing
- Taper Length provides longer OAL and flutes for deeper drilling
- Recommended for a wide range of material



| Fractional |           |             |               | Chicago-Latrobe<br>Bright Series<br>120WLP |             | Chicago-Latrobe<br>TiCN Series<br>120WLPN |             |
|------------|-----------|-------------|---------------|--|-------------|---|-------------|
| Size       | Decimal   | Flute Lgth. | Overall Lgth. | Part No.                                   | Price /Each | Part No.                                  | Price /Each |
| 1/16"      | 0.0625"   | 1.75"       | 3"            | 7006829                                    | \$7.59      |   |             |
| 5/64"      | 0.078125" | 2"          | 3.75"         | 7006835                                    | 7.65        | 7006936                                   | \$11.81     |
| 3/32"      | 0.09375"  | 2.25"       | 4.25"         | 7006842                                    | 9.08        | 7006943                                   | 13.23       |
| 7/64"      | 0.109375" | 2.5"        | 4.625"        | 7006849                                    | 10.38       | 7006950                                   | 14.25       |
| 1/8"       | 0.125"    | 2.75"       | 5.125"        | 7006855                                    | 10.53       | 7006956                                   | 14.36       |
| 9/64"      | 0.140625" | 3"          | 5.375"        | 7006859                                    | 12.45       | 7006960                                   | 16.51       |
| 5/32"      | 0.15625"  | 3"          | 5.375"        | 7006865                                    | 12.75       | 7006966                                   | 16.99       |
| 11/64"     | 0.171875" | 3.375"      | 5.75"         | 7006871                                    | 13.48       | 7006972                                   | 18.43       |
| 3/16"      | 0.1875"   | 3.375"      | 5.75"         | 7006877                                    | 13.71       | 7006978                                   | 19.53       |
| 13/64"     | 0.203125" | 3.625"      | 6"            | 7006884                                    | 15.08       | 7006985                                   | 22.41       |
| 7/32"      | 0.21875"  | 3.625"      | 6"            | 7006889                                    | 15.23       | 7006990                                   | 23.13       |
| 15/64"     | 0.234375" | 3.75"       | 6.125"        | 7006892                                    | 16.51       | 7006993                                   | 25.83       |
| 1/4"-E     | 0.25"     | 3.75"       | 6.125"        | 7006896                                    | 16.59       | 7006997                                   | 26.39       |
| 17/64"     | 0.265625" | 3.875"      | 6.25"         | 7006899                                    | 19.06       | 7007000                                   | 29.51       |
| 9/32"      | 0.28125"  | 3.875"      | 6.25"         | 7006902                                    | 19.47       | 7007003                                   | 30.22       |
| 19/64"     | 0.296875" | 4"          | 6.375"        | 7006904                                    | 22.73       | 7007005                                   | 35.08       |
| 5/16"      | 0.3125"   | 4"          | 6.375"        | 7006906                                    | 24.01       | 7007007                                   | 37.08       |
| 21/64"     | 0.328125" | 4.125"      | 6.5"          | 7006909                                    | 25.11       | 7007010                                   | 38.52       |
| 11/32"     | 0.34375"  | 4.125"      | 6.5"          | 7006912                                    | 25.92       | 7007013                                   | 40.12       |
| 23/64"     | 0.359375" | 4.25"       | 6.75"         | 7006913                                    | 26.39       | 7007014                                   | 41.85       |
| 3/8"       | 0.375"    | 4.25"       | 6.75"         | 7006915                                    | 27.11       | 7007016                                   | 42.98       |
| 25/64"     | 0.390625" | 4.375"      | 7"            | 7006918                                    | 28.15       | 7007019                                   | 44.98       |
| 13/32"     | 0.40625"  | 4.375"      | 7"            | 7006919                                    | 29.97       | 7007020                                   | 47.12       |
| 27/64"     | 0.421875" | 4.625"      | 7.25"         | 7006920                                    | 32.38       | 7007021                                   | 50.15       |
| 7/16"      | 0.4375"   | 4.625"      | 7.25"         | 7006921                                    | 33.98       | 7007022                                   | 53.51       |
| 29/64"     | 0.453125" | 4.75"       | 7.5"          | 7006922                                    | 35.33       | 7007023                                   | 55.82       |
| 15/32"     | 0.46875"  | 4.75"       | 7.5"          | 7006923                                    | 36.21       | 7007024                                   | 57.18       |
| 31/64"     | 0.484375" | 4.75"       | 7.75"         | 7006924                                    | 42.26       | 7007025                                   | 65.30       |
| 1/2"       | 0.5"      | 4.75"       | 7.75"         | 7006925                                    | 44.49       | 7007026                                   | 69.69       |
| 33/64"     | 0.515625" | 4.75"       | 8"            | 7006926                                    | 62.60       | 7007027                                   | 91.22       |
| 17/32"     | 0.53125"  | 4.75"       | 8"            | 7006927                                    | 63.39       | 7007028                                   | 92.65       |
| 9/16"      | 0.5625"   | 4.875"      | 8.25"         | 7006928                                    | 70.97       | 7007029                                   | 103.26      |
| 5/8"       | 0.625"    | 4.875"      | 8.75"         | 7006929                                    | 80.62       | 7007030                                   | 116.98      |

Cutting Tools

# HSS DRILL BITS

## HSS Drill Bits Cont.



Cutting Tools

### 135° Notch, HSS Wide Land Parabolic Taper Length - Cont.



| Wire |         |             |               | Chicago-Latrobe Bright Series 120WLP |             | Chicago-Latrobe TICN Series 120WLPN |             |
|------|---------|-------------|---------------|--------------------------------------|-------------|-------------------------------------|-------------|
| Size | Decimal | Flute Lgth. | Overall Lgth. | Part No.                             | Price /Each | Part No.                            | Price /Each |
| #1   | 0.228"  | 3.75"       | 6.125"        | 7006891                              | \$16.02     | 7006992                             | \$24.39     |
| #2   | 0.221"  | 3.75"       | 6.125"        | 7006890                              | 15.87       | 7006991                             | 24.08       |
| #3   | 0.213"  | 3.625"      | 6"            | 7006888                              | 14.83       | 7006989                             | 22.41       |
| #4   | 0.209"  | 3.625"      | 6"            | 7006887                              | 14.83       | 7006988                             | 22.14       |
| #5   | 0.2055" | 3.625"      | 6"            | 7006886                              | 14.82       | 7006987                             | 22.15       |
| #6   | 0.204"  | 3.625"      | 6"            | 7006885                              | 14.67       | 7006986                             | 21.70       |
| #7   | 0.201"  | 3.625"      | 6"            | 7006883                              | 14.51       | 7006984                             | 21.21       |
| #8   | 0.199"  | 3.625"      | 6"            | 7006882                              | 14.51       | 7006983                             | 21.13       |
| #9   | 0.196"  | 3.625"      | 6"            | 7006881                              | 14.45       | 7006982                             | 21.06       |
| #10  | 0.1935" | 3.625"      | 6"            | 7006880                              | 14.45       | 7006981                             | 21.06       |
| #11  | 0.191"  | 3.625"      | 6"            | 7006879                              | 14.32       | 7006980                             | 20.88       |
| #12  | 0.189"  | 3.625"      | 6"            | 7006878                              | 14.04       | 7006979                             | 20.73       |
| #13  | 0.185"  | 3.375"      | 5.75"         | 7006876                              | 13.88       | 7006977                             | 19.78       |
| #14  | 0.182"  | 3.375"      | 5.75"         | 7006875                              | 13.79       | 7006976                             | 19.62       |
| #15  | 0.18"   | 3.375"      | 5.75"         | 7006874                              | 13.70       | 7006975                             | 19.37       |
| #16  | 0.177"  | 3.375"      | 5.75"         | 7006873                              | 13.43       | 7006974                             | 19.07       |
| #17  | 0.173"  | 3.375"      | 5.75"         | 7006872                              | 13.43       | 7006973                             | 18.97       |
| #18  | 0.1695" | 3.375"      | 5.75"         | 7006870                              | 13.38       | 7006971                             | 18.81       |
| #19  | 0.166"  | 3.375"      | 5.75"         | 7006869                              | 13.38       | 7006970                             | 18.74       |
| #20  | 0.161"  | 3.375"      | 5.75"         | 7006868                              | 13.37       | 7006969                             | 18.66       |
| #21  | 0.159"  | 3.375"      | 5.75"         | 7006867                              | 13.37       | 7006968                             | 18.59       |
| #22  | 0.157"  | 3.375"      | 5.75"         | 7006866                              | 12.60       | 7006967                             | 17.47       |
| #23  | 0.154"  | 3"          | 5.375"        | 7006864                              | 12.52       | 7006965                             | 17.30       |
| #24  | 0.152"  | 3"          | 5.375"        | 7006863                              | 12.44       | 7006964                             | 17.30       |
| #25  | 0.1495" | 3"          | 5.375"        | 7006862                              | 12.44       | 7006963                             | 17.22       |
| #26  | 0.147"  | 3"          | 5.375"        | 7006861                              | 12.29       | 7006962                             | 17.08       |
| #27  | 0.144"  | 3"          | 5.375"        | 7006860                              | 12.04       | 7006961                             | 16.83       |
| #28  | 0.1405" | 3"          | 5.375"        | 7006858                              | 11.82       | 7006959                             | 16.51       |
| #29  | 0.136"  | 3"          | 5.375"        | 7006857                              | 10.96       | 7006958                             | 14.67       |
| #30  | 0.1285" | 3"          | 5.375"        | 7006856                              | 10.76       | 7006957                             | 14.66       |
| #31  | 0.12"   | 2.75"       | 5.125"        | 7006854                              | 10.45       | 7006955                             | 14.20       |
| #32  | 0.116"  | 2.75"       | 5.125"        | 7006853                              | 10.13       | 7006954                             | 13.89       |
| #33  | 0.113"  | 2.75"       | 5.125"        | 7006852                              | 9.96        | 7006953                             | 13.88       |
| #34  | 0.111"  | 2.75"       | 5.125"        | 7006851                              | 9.90        | 7006952                             | 13.88       |
| #35  | 0.11"   | 2.75"       | 5.125"        | 7006850                              | 9.90        | 7006951                             | 13.88       |
| #36  | 0.1065" | 2.5"        | 4.625"        | 7006848                              | 9.80        | 7006949                             | 13.48       |
| #37  | 0.104"  | 2.5"        | 4.625"        | 7006847                              | 9.80        | 7006948                             | 13.48       |
| #38  | 0.1015" | 2.5"        | 4.625"        | 7006846                              | 9.55        | 7006947                             | 13.16       |
| #39  | 0.0995" | 2.5"        | 4.625"        | 7006845                              | 9.34        | 7006946                             | 13.17       |
| #40  | 0.098"  | 2.5"        | 4.625"        | 7006844                              | 9.00        | 7006945                             | 12.59       |
| #41  | 0.096"  | 2.5"        | 4.625"        | 7006843                              | 9.00        | 7006944                             | 12.59       |
| #42  | 0.0935" | 2.25"       | 4.25"         | 7006841                              | 9.00        | 7006942                             | 12.59       |
| #43  | 0.089"  | 2.25"       | 4.25"         | 7006840                              | 9.00        | 7006941                             | 12.59       |
| #44  | 0.086"  | 2.25"       | 4.25"         | 7006839                              | 9.00        | 7006940                             | 12.59       |
| #45  | 0.082"  | 2.25"       | 4.25"         | 7006838                              | 9.00        | 7006939                             | 12.59       |
| #46  | 0.081"  | 2.25"       | 4.25"         | 7006837                              | 9.00        | 7006938                             | 12.59       |
| #47  | 0.0785" | 2.25"       | 4.25"         | 7006836                              | 8.21        | 7006937                             | 12.54       |
| #48  | 0.076"  | 2"          | 3.75"         | 7006834                              | 8.21        | 7006935                             | 12.13       |
| #49  | 0.073"  | 2"          | 3.75"         | 7006833                              | 8.21        | 7006934                             | 12.13       |
| #50  | 0.07"   | 2"          | 3.75"         | 7006832                              | 8.21        | 7006933                             | 11.52       |
| #51  | 0.067"  | 2"          | 3.75"         | 7006831                              | 8.21        | 7006932                             | 11.52       |
| #52  | 0.0635" | 2"          | 3.75"         | 7006830                              | 8.21        | 7006931                             | 11.52       |

| Letter |         |             |               | Chicago-Latrobe Bright Series 120WLP |             | Chicago-Latrobe TICN Series 120WLPN |             |
|--------|---------|-------------|---------------|--------------------------------------|-------------|-------------------------------------|-------------|
| Size   | Decimal | Flute Lgth. | Overall Lgth. | Part No.                             | Price /Each | Part No.                            | Price /Each |
| Ltr B  | 0.238"  | 3.75"       | 6.125"        | 7006893                              | \$17.15     | 7006994                             | \$26.40     |
| Ltr C  | 0.242"  | 3.75"       | 6.125"        | 7006894                              | 17.14       | 7006995                             | 26.51       |
| Ltr D  | 0.246"  | 3.75"       | 6.125"        | 7006895                              | 17.39       | 7006996                             | 26.64       |
| Ltr F  | 0.257"  | 3.875"      | 6.25"         | 7006897                              | 18.34       | 7006998                             | 28.15       |
| Ltr G  | 0.261"  | 3.875"      | 6.25"         | 7006898                              | 18.81       | 7006999                             | 28.79       |
| Ltr I  | 0.272"  | 3.875"      | 6.25"         | 7006900                              | 19.06       | 7007001                             | 29.18       |
| Ltr J  | 0.277"  | 3.875"      | 6.25"         | 7006901                              | 19.47       | 7007002                             | 29.50       |
| Ltr L  | 0.29"   | 4"          | 6.375"        | 7006903                              | 21.85       | 7007004                             | 31.50       |
| Ltr N  | 0.302"  | 4"          | 6.375"        | 7006905                              | 23.13       | 7007006                             | 33.57       |
| Ltr O  | 0.316"  | 4.125"      | 6.5"          | 7006907                              | 24.33       | 7007008                             | 35.24       |
| Ltr P  | 0.323"  | 4.125"      | 6.5"          | 7006908                              | 24.73       | 7007009                             | 37.15       |
| Ltr Q  | 0.332"  | 4.125"      | 6.5"          | 7006910                              | 25.67       | 7007011                             | 38.19       |
| Ltr R  | 0.339"  | 4.125"      | 6.5"          | 7006911                              | 26.08       | 7007012                             | 39.31       |
| Ltr U  | 0.368"  | 4.25"       | 6.75"         | 7006914                              | 27.75       | 7007015                             | 42.60       |
| Ltr V  | 0.377"  | 4.375"      | 7"            | 7006916                              | 28.56       | 7007017                             | 42.66       |
| Ltr W  | 0.386"  | 4.375"      | 7"            | 7006917                              | 29.09       | 7007018                             | 45.45       |

## BANDSAW BLADE WELDING

- Over \$1 million in welding equipment and coil stock inventory
- We can custom-weld any length to suit your application
- Widths from 1/8" to 2-1/4" (Large widths available upon request)
- Large selection of pre-welded blades in stock for common cutting applications
- Our technicians are factory trained and can assist you with questions
- We can stock your blades at your local servicing store



## HSS Drill Bits Cont.



### 135° Notch, HSS Wide Land Parabolic Jobber Length

- Bright finish provides good chip ejection
- Titanium Carbonitride (TiCN) coating increases cutting surface hardness making the tool highly resistant to abrasive wear
- Premium High Speed Steel
- 135° self centering with modified notch point provides greater stability, prevents walking and lessens work hardening, dramatically improving drill life
- Parabolic flute form and point combinations produce tighter hole tolerances, heightened chip breaking action and improved coolant flow for deep-hole drilling
- Wider flute spacing disperses chips away from the cutting edge more rapidly than conventional parabolic drills, resulting in tighter, more manageable chips and less chip packing
- Recommended for a wide range of material



| Size                    | Decimal   | Flute Lgth. | Overall Lgth. | Chicago-Latrobe Bright Series 150WLP |             | Chicago-Latrobe TiCN Series 150WLPN |             |
|-------------------------|-----------|-------------|---------------|--------------------------------------|-------------|-------------------------------------|-------------|
|                         |           |             |               | Part No.                             | Price /Each | Part No.                            | Price /Each |
| <b>Fractional Sizes</b> |           |             |               |                                      |             |                                     |             |
| 1/16"                   | 0.0625"   | 0.875"      | 1.875"        | 7007031                              | \$2.84      | 7007141                             | \$4.55      |
| 5/64"                   | 0.078125" | 1"          | 2"            | 7007037                              | 2.94        | 7007147                             | 5.01        |
| 3/32"                   | 0.09375"  | 1.25"       | 2.25"         | 7007044                              | 3.00        | 7007154                             | 5.12        |
| 7/64"                   | 0.109375" | 1.5"        | 2.625"        | 7007051                              | 3.19        | 7007161                             | 5.58        |
| 1/8"                    | 0.125"    | 1.625"      | 2.75"         | 7007057                              | 3.27        | 7007167                             | 5.68        |
| 9/64"                   | 0.140625" | 1.75"       | 2.875"        | 7007061                              | 3.56        | 7007171                             | 5.98        |
| 5/32"                   | 0.15625"  | 2"          | 3.125"        | 7007067                              | 3.79        | 7007177                             | 6.39        |
| 11/64"                  | 0.171875" | 2.125"      | 3.25"         | 7007073                              | 4.04        | 7007183                             | 7.02        |
| 3/16"                   | 0.1875"   | 2.3125"     | 3.5"          | 7007079                              | 4.32        | 7007189                             | 7.50        |
| 13/64"                  | 0.203125" | 2.4375"     | 3.625"        | 7007086                              | 4.64        | 7007196                             | 8.63        |
| 7/32"                   | 0.21875"  | 2.5"        | 3.75"         | 7007091                              | 5.18        | 7007201                             | 9.17        |
| 15/64"                  | 0.234375" | 2.625"      | 3.875"        | 7007095                              | 5.87        | 7007205                             | 10.37       |
| 1/4"-E                  | 0.25"     | 2.75"       | 4"            | 7007099                              | 6.01        | 7007209                             | 10.60       |
| 17/64"                  | 0.265625" | 2.875"      | 4.125"        | 7007102                              | 7.18        | 7007212                             | 13.00       |
| 9/32"                   | 0.28125"  | 2.9375"     | 4.25"         | 7007107                              | 7.26        | 7007217                             | 13.16       |
| 19/64"                  | 0.296875" | 3.0625"     | 4.375"        | 7007110                              | 8.94        | 7007220                             | 15.86       |
| 5/16"                   | 0.3125"   | 3.1875"     | 4.5"          | 7007112                              | 9.14        | 7007222                             | 16.18       |
| 21/64"                  | 0.328125" | 3.3125"     | 4.625"        | 7007115                              | 11.42       | 7007225                             | 18.65       |
| 11/32"                  | 0.34375"  | 3.4375"     | 4.75"         | 7007118                              | 12.04       | 7007228                             | 20.65       |
| 23/64"                  | 0.359375" | 3.5"        | 4.875"        | 7007121                              | 13.01       | 7007231                             | 23.60       |
| 3/8"                    | 0.375"    | 3.625"      | 5"            | 7007123                              | 12.86       | 7007233                             | 23.92       |
| 25/64"                  | 0.390625" | 3.75"       | 5.125"        | 7007126                              | 14.67       | 7007236                             | 25.92       |
| 13/32"                  | 0.40625"  | 3.875"      | 5.25"         | 7007129                              | 14.82       | 7007239                             | 26.33       |
| 7/16"                   | 0.4375"   | 4.0625"     | 5.5"          | 7007132                              | 16.98       | 7007242                             | 29.27       |
| 29/64"                  | 0.453125" | 4.1875"     | 5.625"        | 7007133                              | 18.75       | 7007243                             | 30.69       |
| 15/32"                  | 0.46875"  | 4.3125"     | 5.75"         | 7007134                              | 19.15       | 7007244                             | 31.10       |
| 31/64"                  | 0.484375" | 4.375"      | 5.875"        | 7007135                              | 21.54       | 7007245                             | 34.70       |
| 1/2"                    | 0.5"      | 4.5"        | 6"            | 7007136                              | 21.69       | 7007246                             | 35.08       |
| 33/64"                  | 0.515625" | 4.8125"     | 6.625"        | 7007137                              | 34.29       | 7007247                             | 50.64       |
| 17/32"                  | 0.53125"  | 4.8125"     | 6.625"        | 7007138                              | 34.91       | 7007248                             | 51.03       |
| 9/16"                   | 0.5625"   | 4.8125"     | 6.625"        | 7007139                              | 38.68       | 7007249                             | 58.62       |
| 5/8"                    | 0.625"    | 5.1875"     | 7.125"        | 7007140                              | 41.22       | 7007250                             | 59.65       |
| <b>Wire Gage Sizes</b>  |           |             |               |                                      |             |                                     |             |
| #1                      | 0.228"    | 2.625"      | 3.875"        | 7007093                              | \$6.05      | 7007203                             | \$10.45     |
| #2                      | 0.221"    | 2.625"      | 3.875"        | 7007092                              | 5.99        | 7007202                             | 10.38       |
| #3                      | 0.213"    | 2.5"        | 3.75"         | 7007090                              | 5.84        | 7007200                             | 9.97        |
| #4                      | 0.209"    | 2.5"        | 3.75"         | 7007089                              | 5.73        | 7007199                             | 9.90        |
| #5                      | 0.2055"   | 2.5"        | 3.75"         | 7007088                              | 5.75        | 7007198                             | 9.81        |
| #6                      | 0.204"    | 2.5"        | 3.75"         | 7007087                              | 5.66        | 7007197                             | 9.72        |
| #7                      | 0.201"    | 2.4375"     | 3.625"        | 7007085                              | 5.31        | 7007195                             | 9.09        |
| #8                      | 0.199"    | 2.4375"     | 3.625"        | 7007084                              | 5.31        | 7007194                             | 9.08        |
| #9                      | 0.196"    | 2.4375"     | 3.625"        | 7007083                              | 5.12        | 7007193                             | 8.93        |
| #10                     | 0.1935"   | 2.4375"     | 3.625"        | 7007082                              | 5.11        | 7007192                             | 8.85        |

| Size                         | Decimal | Flute Lgth. | Overall Lgth. | Chicago-Latrobe Bright Series 150WLP |             | Chicago-Latrobe TiCN Series 150WLPN |             |
|------------------------------|---------|-------------|---------------|--------------------------------------|-------------|-------------------------------------|-------------|
|                              |         |             |               | Part No.                             | Price /Each | Part No.                            | Price /Each |
| <b>Wire Gage Sizes cont.</b> |         |             |               |                                      |             |                                     |             |
| #11                          | 0.191"  | 2.3125"     | 3.5"          | 7007081                              | \$4.87      | 7007191                             | \$8.38      |
| #12                          | 0.189"  | 2.3125"     | 3.5"          | 7007080                              | 4.79        | 7007190                             | 8.31        |
| #13                          | 0.185"  | 2.3125"     | 3.5"          | 7007078                              | 4.71        | 7007188                             | 8.22        |
| #14                          | 0.182"  | 2.1875"     | 3.375"        | 7007077                              | 4.71        | 7007187                             | 8.13        |
| #15                          | 0.18"   | 2.1875"     | 3.375"        | 7007076                              | 4.71        | 7007186                             | 8.12        |
| #16                          | 0.177"  | 2.1875"     | 3.375"        | 7007075                              | 4.64        | 7007185                             | 7.97        |
| #17                          | 0.173"  | 2.1875"     | 3.375"        | 7007074                              | 4.64        | 7007184                             | 7.98        |
| #18                          | 0.1695" | 2.125"      | 3.25"         | 7007072                              | 4.54        | 7007182                             | 7.66        |
| #19                          | 0.166"  | 2.125"      | 3.25"         | 7007071                              | 4.45        | 7007181                             | 7.50        |
| #20                          | 0.161"  | 2.125"      | 3.25"         | 7007070                              | 4.39        | 7007180                             | 7.27        |
| #21                          | 0.159"  | 2.125"      | 3.25"         | 7007069                              | 4.19        | 7007179                             | 7.34        |
| #22                          | 0.157"  | 2"          | 3.125"        | 7007068                              | 4.19        | 7007178                             | 7.27        |
| #23                          | 0.154"  | 2"          | 3.125"        | 7007066                              | 4.13        | 7007176                             | 7.28        |
| #24                          | 0.152"  | 2"          | 3.125"        | 7007065                              | 4.13        | 7007175                             | 7.03        |
| #25                          | 0.1495" | 1.875"      | 3"            | 7007064                              | 4.02        | 7007174                             | 6.94        |
| #26                          | 0.147"  | 1.875"      | 3"            | 7007063                              | 3.92        | 7007173                             | 6.93        |
| #27                          | 0.144"  | 1.875"      | 3"            | 7007062                              | 3.92        | 7007172                             | 6.86        |
| #28                          | 0.1405" | 1.75"       | 2.875"        | 7007060                              | 3.83        | 7007170                             | 6.77        |
| #29                          | 0.136"  | 1.75"       | 2.875"        | 7007059                              | 3.83        | 7007169                             | 6.54        |
| #30                          | 0.1285" | 1.625"      | 2.75"         | 7007058                              | 3.75        | 7007168                             | 6.45        |
| #31                          | 0.12"   | 1.625"      | 2.75"         | 7007056                              | 3.76        | 7007166                             | 6.46        |
| #32                          | 0.116"  | 1.625"      | 2.75"         | 7007055                              | 3.51        | 7007165                             | 5.90        |
| #33                          | 0.113"  | 1.5"        | 2.625"        | 7007054                              | 3.51        | 7007164                             | 5.83        |
| #34                          | 0.111"  | 1.5"        | 2.625"        | 7007053                              | 3.51        | 7007163                             | 5.83        |
| #35                          | 0.11"   | 1.5"        | 2.625"        | 7007052                              | 3.35        | 7007162                             | 5.67        |
| #36                          | 0.1065" | 1.4375"     | 2.5"          | 7007050                              | 3.26        | 7007160                             | 5.67        |
| #37                          | 0.104"  | 1.4375"     | 2.5"          | 7007049                              | 3.26        | 7007159                             | 5.67        |
| #38                          | 0.1015" | 1.4375"     | 2.5"          | 7007048                              | 3.26        | 7007158                             | 5.67        |
| #39                          | 0.0995" | 1.375"      | 2.375"        | 7007047                              | 3.26        | 7007157                             | 5.67        |
| #40                          | 0.098"  | 1.375"      | 2.375"        | 7007046                              | 3.26        | 7007156                             | 5.49        |
| #41                          | 0.096"  | 1.375"      | 2.375"        | 7007045                              | 3.26        | 7007155                             | 5.49        |
| #42                          | 0.0935" | 1.25"       | 2.25"         | 7007043                              | 3.27        | 7007153                             | 5.49        |
| #43                          | 0.089"  | 1.25"       | 2.25"         | 7007042                              | 3.20        | 7007152                             | 5.36        |
| #44                          | 0.086"  | 1.125"      | 2.125"        | 7007041                              | 3.20        | 7007151                             | 5.36        |
| #45                          | 0.082"  | 1.125"      | 2.125"        | 7007040                              | 3.20        | 7007150                             | 5.36        |
| #46                          | 0.081"  | 1.125"      | 2.125"        | 7007039                              | 3.20        | 7007149                             | 5.36        |
| #47                          | 0.0785" | 1"          | 2"            | 7007038                              | 3.10        | 7007148                             | 5.17        |
| #48                          | 0.076"  | 1"          | 2"            | 7007036                              | 3.10        | 7007146                             | 5.17        |
| #49                          | 0.073"  | 1"          | 2"            | 7007035                              | 3.10        | 7007145                             | 5.17        |
| #50                          | 0.07"   | 1"          | 2"            | 7007034                              | 3.10        | 7007144                             | 5.10        |
| #51                          | 0.067"  | 1"          | 2"            | 7007033                              | 3.10        | 7007143                             | 5.10        |
| #52                          | 0.0635" | 0.875"      | 1.875"        | 7007032                              | 3.10        | 7007142                             | 5.10        |
| <b>Letter Sizes</b>          |         |             |               |                                      |             |                                     |             |
| Ltr A                        | 0.234"  | 2.625"      | 3.875"        | 7007094                              | \$6.15:     | 7007204                             | \$10.54:    |
| Ltr B                        | 0.238"  | 2.75"       | 4"            | 7007096                              | 6.38:       | 7007206                             | 11.01:      |
| Ltr C                        | 0.242"  | 2.75"       | 4"            | 7007097                              | 6.40:       | 7007207                             | 11.08:      |
| Ltr D                        | 0.246"  | 2.75"       | 4"            | 7007098                              | 6.46:       | 7007208                             | 11.26:      |
| Ltr F                        | 0.257"  | 2.875"      | 4.125"        | 7007100                              | 6.93:       | 7007210                             | 11.88       |
| Ltr G                        | 0.261"  | 2.875"      | 4.125"        | 7007101                              | 7.34:       | 7007211                             | 12.53:      |
| Ltr H                        | 0.266"  | 2.875"      | 4.125"        | 7007103                              | 7.58:       | 7007213                             | 12.92:      |
| Ltr I                        | 0.272"  | 2.875"      | 4.125"        | 7007104                              | 7.74:       | 7007214                             | 13.32:      |
| Ltr J                        | 0.277"  | 2.875"      | 4.125"        | 7007105                              | 7.81:       | 7007215                             | 13.39:      |
| Ltr K                        | 0.2812" | 2.9375"     | 4.25"         | 7007106                              | 7.81:       | 7007216                             | 13.48:      |
| Ltr L                        | 0.29"   | 2.9375"     | 4.25"         | 7007108                              | 9.35:       | 7007218                             | 15.55:      |
| Ltr M                        | 0.295"  | 3.0625"     | 4.375"        | 7007109                              | 9.41:       | 7007219                             | 15.71:      |
| Ltr N                        | 0.302"  | 3.0625"     | 4.375"        | 7007111                              | 9.56:       | 7007221                             | 16.34:      |
| Ltr O                        | 0.316"  | 3.1875"     | 4.5"          | 7007113                              | 11.17:      | 7007223                             | 18.65:      |
| Ltr P                        | 0.323"  | 3.3125"     | 4.625"        | 7007114                              | 11.31:      | 7007224                             | 18.90:      |
| Ltr Q                        | 0.332"  | 3.4375"     | 4.75"         | 7007116                              | 12.44:      | 7007226                             | 20.56:      |
| Ltr R                        | 0.339"  | 3.4375"     | 4.75"         | 7007117                              | 12.61:      | 7007227                             | 20.82:      |
| Ltr S                        | 0.348"  | 3.5"        | 4.875"        | 7007119                              | 13.89:      | 7007229                             | 20.72:      |
| Ltr T                        | 0.358"  | 3.5"        | 4.875"        | 7007120                              | 13.88:      | 7007230                             | 21.13:      |
| Ltr U                        | 0.368"  | 3.625"      | 5"            | 7007122                              | 14.58:      | 7007232                             | 24.33:      |
| Ltr V                        | 0.377"  | 3.625"      | 5"            | 7007124                              | 15.55:      | 7007234                             | 25.92:      |
| Ltr W                        | 0.386"  | 3.75"       | 5.125"        | 7007125                              | 15.76:      | 7007235                             | 26.51:      |
| Ltr X                        | 0.397"  | 3.75"       | 5.125"        | 7007127                              | 15.87:      | 7007237                             | 26.64:      |
| Ltr Y                        | 0.404"  | 3.875"      | 5.25"         | 7007128                              | 16.14:      | 7007238                             | 26.33:      |

# COBALT DRILL BITS

## Cobalt Drill Bits



Cutting Tools

### 135°, Q-Cobalt Wide Land Notch Point Taper Length Parabolic Drills

- Straw surface finish
- Titanium Nitride ( TiN ) coating adds lubricity and hardness which enhances chip flow, finish hole quality and drill life
- 135° splint point with high positive notch angle for self-centering, ease of penetration and minimizes work hardening
- Premium 8% Cobalt High Speed Steel ( M42 )
- Parabolic flute form and point combinations produce tighter hole tolerances, heightened chip breaking action and improved coolant flow for deep-hole drilling
- Wider flute spacing disperses chips away from the cutting edge more rapidly than conventional parabolic drills, resulting in tighter, more manageable chips and less chip packing
- Taper Length provides longer OAL and flutes for deeper drilling
- Recommended for stainless steels, work hardening materials



### Fractional

| Size   | Decimal   | Flute Lgth. | Overall Lgth. | CTD STRAW Series 2575 |             | CTD TN Series 2575TN |             |
|--------|-----------|-------------|---------------|-----------------------|-------------|----------------------|-------------|
|        |           |             |               | Part No.              | Price /Each | Part No.             | Price /Each |
| 1/16"  | 0.0625"   | 1.75"       | 3"            | 7003219               | \$11.13     | 7003248              | \$15.31     |
| 5/64"  | 0.078125" | 2"          | 3.75"         | 7003220               | 12.87       | 7003249              | 17.13       |
| 3/32"  | 0.09375"  | 2.25"       | 4.25"         | 7003221               | 13.98       | 7003250              | 18.34       |
| 7/64"  | 0.109375" | 2.5"        | 4.625"        | 7003222               | 14.50       | 7003251              | 19.54       |
| 1/8"   | 0.125"    | 2.75"       | 5.125"        | 7003223               | 15.71       | 7003252              | 21.18       |
| 9/64"  | 0.140625" | 3"          | 5.375"        | 7003224               | 19.76       | 7003253              | 26.53       |
| 5/32"  | 0.15625"  | 3"          | 5.375"        | 7003225               | 20.37       | 7003254              | 27.26       |
| 11/64" | 0.171875" | 3.375"      | 5.75"         | 7003226               | 20.86       | 7003255              | 28.54       |
| 3/16"  | 0.1875"   | 3.375"      | 5.75"         | 7003227               | 21.17       | 7003256              | 29.08       |
| 13/64" | 0.203125" | 3.625"      | 6"            | 7003228               | 23.50       | 7003257              | 32.92       |
| 7/32"  | 0.21875"  | 3.625"      | 6"            | 7003229               | 24.21       | 7003258              | 33.41       |
| 15/64" | 0.234375" | 3.75"       | 6.125"        | 7003230               | 24.90       | 7003259              | 34.63       |
| 1/4"-E | 0.25"     | 3.75"       | 6.125"        | 7003231               | 25.30       | 7003260              | 34.83       |
| 17/64" | 0.265625" | 3.875"      | 6.25"         | 7003232               | 28.05       | 7003261              | 38.89       |
| 9/32"  | 0.28125"  | 3.875"      | 6.25"         | 7003233               | 30.08       | 7003262              | 42.13       |
| 19/64" | 0.296875" | 4"          | 6.375"        | 7003234               | 30.58       | 7003263              | 42.73       |
| 5/16"  | 0.3125"   | 4"          | 6.375"        | 7003235               | 31.19       | 7003264              | 43.24       |
| 21/64" | 0.328125" | 4.125"      | 6.5"          | 7003236               | 36.76       | 7003265              | 50.63       |
| 11/32" | 0.34375"  | 4.125"      | 6.5"          | 7003237               | 37.37       | 7003266              | 52.84       |
| 23/64" | 0.359375" | 4.25"       | 6.75"         | 7003238               | 43.05       | 7003267              | 60.34       |
| 3/8"   | 0.375"    | 4.25"       | 6.75"         | 7003239               | 44.26       | 7003268              | 61.48       |
| 25/64" | 0.390625" | 4.375"      | 7"            | 7003240               | 46.48       | 7003269              | 65.81       |
| 13/32" | 0.40625"  | 4.375"      | 7"            | 7003241               | 48.72       | 7003270              | 70.17       |
| 27/64" | 0.421875" | 4.625"      | 7.25"         | 7003242               | 51.15       | 7003271              | 73.21       |
| 7/16"  | 0.4375"   | 4.625"      | 7.25"         | 7003243               | 53.98       | 7003272              | 76.45       |
| 29/64" | 0.453125" | 4.75"       | 7.5"          | 7003244               | 56.90       | 7003273              | 79.78       |
| 15/32" | 0.46875"  | 4.75"       | 7.5"          | 7003245               | 59.74       | 7003274              | 85.96       |
| 31/64" | 0.484375" | 4.75"       | 7.75"         | 7003246               | 67.84       | 7003275              | 96.92       |
| 1/2"   | 0.5"      | 4.75"       | 7.75"         | 7003247               | 70.68       | 7003276              | 99.63       |



### 135°, Split Point, Q-Cobalt, Taper Length, Wide Land Parabolic Drills CTD 2575 & 2575TN Series



### Wires

| Part No. | Size | Flutes | Overall Lgth. | Flute Lgth. | Surface | Price /Each |
|----------|------|--------|---------------|-------------|---------|-------------|
| 7003167  | #1   | 2      | 6.125"        | 3.75"       | STRAW   | \$28.36     |
| 7003168  | #2   | 2      | 6.125"        | 3.75"       | STRAW   | 28.36       |
| 7003169  | #3   | 2      | 6"            | 3.625"      | STRAW   | 27.85       |
| 7003170  | #4   | 2      | 6"            | 3.625"      | STRAW   | 27.86       |
| 7003171  | #5   | 2      | 6"            | 3.625"      | STRAW   | 27.85       |
| 7003172  | #6   | 2      | 6"            | 3.625"      | STRAW   | 27.04       |
| 7003173  | #7   | 2      | 6"            | 3.625"      | STRAW   | 26.74       |
| 7003174  | #8   | 2      | 6"            | 3.625"      | STRAW   | 26.74       |
| 7003175  | #9   | 2      | 6"            | 3.625"      | STRAW   | 26.33       |
| 7003176  | #10  | 2      | 6"            | 3.625"      | STRAW   | 26.03       |
| 7003177  | #11  | 2      | 6"            | 3.625"      | STRAW   | 26.04       |
| 7003178  | #12  | 2      | 6"            | 3.625"      | STRAW   | 25.52       |
| 7003179  | #13  | 2      | 5.75"         | 3.375"      | STRAW   | 25.01       |
| 7003180  | #14  | 2      | 5.75"         | 3.375"      | STRAW   | 25.02       |
| 7003181  | #15  | 2      | 5.75"         | 3.375"      | STRAW   | 25.02       |
| 7003182  | #16  | 2      | 5.75"         | 3.375"      | STRAW   | 24.71       |
| 7003183  | #17  | 2      | 5.75"         | 3.375"      | STRAW   | 24.70       |
| 7003184  | #18  | 2      | 5.75"         | 3.375"      | STRAW   | 24.42       |
| 7003185  | #19  | 2      | 5.75"         | 3.375"      | STRAW   | 24.21       |
| 7003186  | #20  | 2      | 5.75"         | 3.375"      | STRAW   | 23.81       |
| 7003187  | #21  | 2      | 5.75"         | 3.375"      | STRAW   | 23.81       |
| 7003188  | #22  | 2      | 5.75"         | 3.375"      | STRAW   | 23.81       |
| 7003189  | #23  | 2      | 5.375"        | 3"          | STRAW   | 23.49       |
| 7003190  | #24  | 2      | 5.375"        | 3"          | STRAW   | 23.00       |
| 7003191  | #25  | 2      | 5.375"        | 3"          | STRAW   | 23.00       |
| 7003192  | #26  | 2      | 5.375"        | 3"          | STRAW   | 22.60       |
| 7003193  | #27  | 2      | 5.375"        | 3"          | STRAW   | 22.47       |
| 7003194  | #28  | 2      | 5.375"        | 3"          | STRAW   | 22.19       |
| 7003195  | #29  | 2      | 5.375"        | 3"          | STRAW   | 21.78       |
| 7003196  | #30  | 2      | 5.375"        | 3"          | STRAW   | 21.17       |
| 7003197  | #31  | 2      | 5.125"        | 2.75"       | STRAW   | 21.18       |
| 7003198  | #32  | 2      | 5.125"        | 2.75"       | STRAW   | 21.18       |
| 7003199  | #33  | 2      | 5.125"        | 2.75"       | STRAW   | 21.17       |
| 7003200  | #34  | 2      | 5.125"        | 2.75"       | STRAW   | 21.18       |
| 7003201  | #35  | 2      | 5.125"        | 2.75"       | STRAW   | 21.18       |
| 7003202  | #36  | 2      | 4.625"        | 2.5"        | STRAW   | 20.85       |
| 7003203  | #37  | 2      | 4.625"        | 2.5"        | STRAW   | 20.51       |
| 7003204  | #38  | 2      | 4.625"        | 2.5"        | STRAW   | 20.51       |
| 7003205  | #39  | 2      | 4.625"        | 2.5"        | STRAW   | 20.25       |
| 7003206  | #40  | 2      | 4.625"        | 2.5"        | STRAW   | 19.76       |
| 7003207  | #41  | 2      | 4.625"        | 2.5"        | STRAW   | 19.55       |
| 7003208  | #42  | 2      | 4.25"         | 2.25"       | STRAW   | 17.00       |
| 7003209  | #43  | 2      | 4.25"         | 2.25"       | STRAW   | 16.60       |
| 7003210  | #44  | 2      | 4.25"         | 2.25"       | STRAW   | 16.60       |
| 7003211  | #45  | 2      | 4.25"         | 2.25"       | STRAW   | 16.60       |
| 7003212  | #46  | 2      | 4.25"         | 2.25"       | STRAW   | 16.60       |
| 7003213  | #47  | 2      | 4.25"         | 2.25"       | STRAW   | 16.11       |
| 7003214  | #48  | 2      | 3.75"         | 2"          | STRAW   | 15.50       |
| 7003215  | #49  | 2      | 3.75"         | 2"          | STRAW   | 15.50       |
| 7003216  | #50  | 2      | 3.75"         | 2"          | STRAW   | 15.50       |
| 7003217  | #51  | 2      | 3.75"         | 2"          | STRAW   | 15.50       |
| 7003218  | #52  | 2      | 3.75"         | 2"          | STRAW   | 15.50       |



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Cutting Tools



# S & D DRILL BITS

## HSS and Cobalt Drill Bits Cont.

Cutting Tools



### Type 140 Twin End Drills Surface Treated Black - Heavy-Duty

This twin end drill has wide applications in drilling any thin sheet metal or wood. Automotive body shops will find twin end drills especially productive.

| Size | Part No. | Overall Lgth. | Flute Lgth. | Pkg. Qty. | Price /Each |
|------|----------|---------------|-------------|-----------|-------------|
| 3/32 | 0310791  | 1-3/4         | 9/16        | 12        | \$1.89      |
| 7/64 | 53622    | 1-15/16       | 5/8         | 12        | 1.89        |
| 1/8  | 53623    | 1-15/16       | 5/8         | 12        | 1.89        |
| 9/64 | 53624    | 2             | 5/8         | 12        | 1.99        |
| 5/32 | 53625    | 2-1/8         | 5/8         | 12        | 1.99        |
| 3/16 | 53626    | 2-5/16        | 5/8         | 12        | 2.64        |
| 7/32 | 53627    | 2-9/16        | 3/4         | 12        | 3.63        |
| 1/4  | 53628    | 2-5/8         | 13/16       | 12        | 4.13        |
| 10   | 0310792  | 2-5/16        | 5/8         | 12        | 2.64        |
| 11   | 0310793  | 2-5/16        | 5/8         | 12        | 2.64        |
| 20   | 53629    | 2-1/8         | 5/8         | 12        | 1.99        |
| 30   | 53630    | 2             | 5/8         | 12        | 1.89        |

## S & D Drill Bits

### S&D Round Shank



| Sets   |  | Fastenal EDP |             | C-L      |             |
|--------|--|--------------|-------------|----------|-------------|
| Series | Contents   | Part No.     | Price /Each | Part No. | Price /Each |
|        | 9/16-1"x16th 8pc HSS Black S & D Drill Set, Round Shank      | 7007264      | \$281.81    | 69857    | \$3.86      |
|        | 1/2-1"x64th 33PC HSS Black S & D Drill Set, Round Shank      | 7007265      | 1073.91     | 69858    | 2.41        |
|        | 9/16-1"x16th 8pc Cobalt Straw S & D Drill Set, Flatted Shank | 7007304      | 370.56      | 69868    | 1.07        |

## S & D Drill Bits

### Silver & Deming Drill Bits with Round Shanks

- Chicago-Latrobe 190 production drill bits are made from premium HSS.
- The black oxide finish increases wear resistance and adds lubricity.
- Chicago-Latrobe 190C production drill bits are made from premium 8% cobalt HSS.
- For use in highly abrasive applications.
- Chicago-Latrobe 190CTN production drill bits are made from premium 8% cobalt HSS.
- For use in highly abrasive applications.
- For use in highly abrasive applications.
- The Titanium Nitride (TiN) coating adds lubricity and hardness, enhancing chip flow and drill life.



| 190    |           |             |               | Norseman Series 130 Black and Gold Round 118° |             | CL Series 190 Black Round 118° |             | CL Series 190C Straw Round 118° |             | CL Series 190C-TIN Round 118° |             | Cle-Line HSS 118° Split Point Black Oxide |             |
|--------|-----------|-------------|---------------|---|-------------|--------------------------------|-------------|---------------------------------|-------------|-------------------------------|-------------|---|-------------|
| Size   | Decimal   | Flute Lgth. | Overall Lgth. | Part No.                                      | Price /Each | Part No.                       | Price /Each | Part No.                        | Price /Each | Part No.                      | Price /Each | Part No.                                  | Price /Each |
| 1/2"   | 0.5"      | 3.125"      | 6"            |   |             | 7006328                        | \$20.32     | 7006369                         | \$32.06     |                               |             | 7011955                                   | \$12.95:    |
| 33/64" | 0.515625" | 3.125"      | 6"            | 53501   | \$26.42     | 7006329                        | 20.31       | 7006370                         | 32.06       |                               |             | 7011956                                   | 13.37:      |
| 17/32" | 0.53125"  | 3.125"      | 6"            | 53502   | 25.15       | 7006330                        | 20.31       | 7006371                         | 32.06       | 0356592                       | \$33.09     | 7011957                                   | 13.44:      |
| 35/64" | 0.546875" | 3.125"      | 6"            | 53503   | 27.54       | 7006331                        | 21.59       | 7006372                         | 32.06       |                               |             | 7011958                                   | 14.18:      |
| 9/16"  | 0.5625"   | 3.125"      | 6"            | 53504   | 26.21       | 7006332                        | 21.60       | 7006373                         | 32.06       | 0356593                       | 33.09       | 7011959                                   | 14.18:      |
| 37/64" | 0.578125" | 3.125"      | 6"            | 53505   | 30.16       | 7006333                        | 23.37       | 7006374                         | 39.56       |                               |             | 7011960                                   | 15.00:      |
| 19/32" | 0.59375"  | 3.125"      | 6"            | 53506   | 28.75       | 7006334                        | 23.45       | 7006375                         | 39.56       | 0356594                       | 37.57       | 7011961                                   | 15.00:      |
| 39/64" | 0.609375" | 3.125"      | 6"            | 53507   | 30.41       | 7006335                        | 24.41       | 7006376                         | 36.95       |                               |             | 7011962                                   | 15.73:      |
| 5/8"   | 0.625"    | 3.125"      | 6"            | 53508   | 28.96       | 7006336                        | 24.48       | 7006377                         | 36.95       | 0356595                       | 37.57       | 7011963                                   | 15.73:      |
| 41/64" | 0.640625" | 3.125"      | 6"            | 53509   | 32.73       | 7006337                        | 26.12       | 7006378                         | 40.66       |                               |             | 7011964                                   | 16.85:      |
| 21/32" | 0.65625"  | 3.125"      | 6"            | 53510   | 31.17       | 7006338                        | 26.19       | 7006379                         | 40.66       | 0356596                       | 40.90       | 7011965                                   | 16.85:      |
| 43/64" | 0.671875" | 3.125"      | 6"            | 53511   | 34.00       | 7006339                        | 27.00       | 7006380                         | 41.18       |                               |             | 7011966                                   | 17.55:      |
| 11/16" | 0.6875"   | 3.125"      | 6"            | 53512   | 32.36       | 7006340                        | 27.15       | 7006381                         | 41.18       | 0356597                       | 40.90       | 7011967                                   | 17.55:      |
| 45/64" | 0.703125" | 3.125"      | 6"            | 53513   | 35.77       | 7006341                        | 27.38       | 7006382                         | 46.02       |                               |             | 7011968                                   | 18.54:      |
| 23/32" | 0.71875"  | 3.125"      | 6"            | 53514   | 34.07       | 7006342                        | 27.60       | 7006383                         | 46.02       | 0356598                       | 44.48       | 7011969                                   | 18.54:      |
| 47/64" | 0.734375" | 3.125"      | 6"            | 53515   | 37.04       | 7006343                        | 28.87       | 7006384                         | 46.02       |                               |             | 7011970                                   | 19.08:      |
| 3/4"   | 0.75"     | 3.125"      | 6"            | 53516   | 35.27       | 7006344                        | 29.30       | 7006385                         | 46.02       | 0356599                       | 40.90       | 7011971                                   | 19.08:      |
| 49/64" | 0.765625" | 3.125"      | 6"            | 53517   | 40.12       | 7006345                        | 30.65       | 7006386                         | 50.60       |                               |             | 7011972                                   | 20.16:      |
| 25/32" | 0.78125"  | 3.125"      | 6"            | 53518   | 38.24       | 7006346                        | 31.16       | 7006387                         | 50.60       | 0356937                       | 50.24       | 7011973                                   | 20.16:      |
| 51/64" | 0.796875" | 3.125"      | 6"            | 53519   | 40.89       | 7006347                        | 33.40       | 7006388                         | 51.18       |                               |             |   |             |
| 13/16" | 0.8125"   | 3.125"      | 6"            | 53520   | 38.93       | 7006348                        | 33.62       | 7006389                         | 51.18       | 0356938                       | 50.66       | 7011974                                   | 21.38:      |
| 53/64" | 0.828125" | 3.125"      | 6"            | 53521   | 43.24       | 7006349                        | 34.59       | 7006390                         | 56.39       |                               |             |   |             |
| 27/32" | 0.84375"  | 3.125"      | 6"            | 53522   | 41.18       | 7006350                        | 34.80       | 7006391                         | 56.39       | 0356939                       | 54.82       | 7011975                                   | 22.37:      |
| 55/64" | 0.859375" | 3.125"      | 6"            | 53523   | 44.18       | 7006351                        | 35.48       | 7006392                         | 56.61       |                               |             |   |             |
| 7/8"   | 0.875"    | 3.125"      | 6"            | 53524   | 42.09       | 7006352                        | 35.62       | 7006393                         | 53.57       | 0356940                       | 54.81       | 7011976                                   | 22.91:      |

## S & D Drill Bits Cont.



### 190 Cont.

|          |           |             |               | Norseman Series 130 Black and Gold Round 118° |             | CL Series 190 Black Round 118° |             | CL Series 190C Straw Round 118° |             | CL Series 190C-TN TIN Round 118° |             | Cle-Line HSS 118° Split Point Black Oxide |             |
|----------|-----------|-------------|---------------|---|-------------|--------------------------------|-------------|---------------------------------|-------------|----------------------------------|-------------|---|-------------|
| Size     | Decimal   | Flute Lgth. | Overall Lgth. | Part No.                                      | Price /Each | Part No.                       | Price /Each | Part No.                        | Price /Each | Part No.                         | Price /Each | Part No.                                  | Price /Each |
| 57/64"   | 0.890625" | 3.125"      | 6"            | 53525   | \$46.91     | 7006353                        | \$40.89     | 7006394                         | \$61.22     |                                  |             |   |             |
| 29/32"   | 0.90625"  | 3.125"      | 6"            | 53526   | 44.65       | 7006354                        | 38.52       | 7006395                         | 61.23       | 0356941                          | \$60.10     | 7011977                                   | \$24.67:    |
| 59/64"   | 0.921875" | 3.125"      | 6"            | 53527   | 49.36       | 7006355                        | 44.82       | 7006396                         | 61.85       |                                  |             |   |             |
| 15/16"   | 0.9375"   | 3.125"      | 6"            | 53528   | 47.01       | 7006356                        | 41.69       | 7006397                         | 61.86       | 0356942                          | 60.83       | 7011978                                   | 25.83:      |
| 61/64"   | 0.953125" | 3.125"      | 6"            | 53529   | 53.21       | 7006357                        | 47.41       | 7006398                         | 72.14       |                                  |             |   |             |
| 31/32"   | 0.96875"  | 3.125"      | 6"            | 53530   | 50.71       | 7006358                        | 42.44       | 7006399                         | 72.14       | 0356943                          | 70.45       | 7011979                                   | 28.05:      |
| 63/64"   | 0.984375" | 3.125"      | 6"            | 53531   | 57.49       | 7006359                        | 55.57       | 7006400                         | 72.13       |                                  |             |   |             |
| 1"       | 1"        | 3.125"      | 6"            | 53532   | 54.73       | 7006360                        | 55.96       | 7006401                         | 72.13       | 0356944                          | 70.75       | 7011980                                   | 29.00:      |
| 1-1/64"  | 1.015625" | 3.125"      | 6"            |   |             | 0356945                        | 41.31       |                                 |             |                                  |             |   |             |
| 1-1/32"  | 1.03125"  | 3.125"      | 6"            |   |             | 0356946                        | 41.84       |                                 |             |                                  |             |   |             |
| 1-3/64"  | 1.046875" | 3.125"      | 6"            |   |             | 0356947                        | 42.48       |                                 |             |                                  |             |   |             |
| 1-1/16"  | 1.0625"   | 3.125"      | 6"            | 53534   | 71.91       | 7006361                        | 60.55       | 7006402                         | 87.25       |                                  |             | 7011981                                   | 39.65:      |
| 1-5/64"  | 1.078125" | 3.125"      | 6"            |   |             | 0356949                        | 43.31       |                                 |             |                                  |             |   |             |
| 1-3/32"  | 1.09375"  | 3.125"      | 6"            |   |             | 0356950                        | 44.85       |                                 |             |                                  |             |   |             |
| 1-3/32"  | 1.09375"  | 3.125"      | 6"            |   |             | 0356951                        | 46.59       |                                 |             |                                  |             |   |             |
| 1-1/8"   | 1.125"    | 3.125"      | 6"            | 53536   | 78.69       | 7006362                        | 66.92       | 7006403                         | 94.90       |                                  |             | 7011982                                   | 42.84:      |
| 1-9/64"  | 1.140625" | 3.125"      | 6"            |   |             | 0356953                        | 47.92       |                                 |             |                                  |             |   |             |
| 1-5/32"  | 1.15625"  | 3.125"      | 6"            | 53537   | 81.99       | 0356954                        | 49.08       |                                 |             |                                  |             |   |             |
| 1-11/64" | 1.171875" | 3.125"      | 6"            |   |             | 0356955                        | 51.44       |                                 |             |                                  |             |   |             |
| 1-3/16"  | 1.1875"   | 3.125"      | 6"            | 53538   | 83.80       | 7006363                        | 73.24       | 7006404                         | 112.06      |                                  |             | 7011983                                   | 46.17:      |
| 1-13/64" | 1.203125" | 3.125"      | 6"            |   |             | 0356957                        | 55.02       |                                 |             |                                  |             |   |             |
| 1-7/32"  | 1.21875"  | 3.125"      | 6"            |   |             | 0356958                        | 55.62       |                                 |             |                                  |             |   |             |
| 1-15/64" | 1.234375" | 3.125"      | 6"            |   |             | 0356959                        | 56.14       |                                 |             |                                  |             |   |             |
| 1-1/4"   | 1.25"     | 3.125"      | 6"            | 53540   | 92.36       | 7006364                        | 79.83       | 7006405                         | 116.87      |                                  |             | 7011984                                   | 50.58:      |
| 1-17/64" | 1.265625" | 3.125"      | 6"            |   |             | 0356961                        | 67.01       |                                 |             |                                  |             |   |             |
| 1-9/32"  | 1.28125"  | 3.125"      | 6"            |   |             | 0356962                        | 67.70       |                                 |             |                                  |             |   |             |
| 1-19/64" | 1.296875" | 3.125"      | 6"            |   |             | 0356963                        | 68.86       |                                 |             |                                  |             |   |             |
| 1-5/16"  | 1.3125"   | 3.125"      | 6"            |   |             | 7006365                        | 98.24       | 7006406                         | 131.70      |                                  |             | 7011985                                   | 66.53:      |
| 1-21/64" | 1.328125" | 3.125"      | 6"            |   |             | 0356965                        | 74.82       |                                 |             |                                  |             |   |             |
| 1-11/32" | 1.34375"  | 3.125"      | 6"            |   |             | 0356966                        | 74.12       |                                 |             |                                  |             |   |             |
| 1-23/64" | 1.359375" | 3.125"      | 6"            |   |             | 0356967                        | 73.87       |                                 |             |                                  |             |   |             |
| 1-3/8"   | 1.375"    | 3.125"      | 6"            |   |             | 7006366                        | 114.87      | 7006407                         | 151.52      |                                  |             | 7011986                                   | 73.02:      |
| 1-25/64" | 1.390625" | 3.125"      | 6"            |   |             | 0356969                        | 84.16       |                                 |             |                                  |             |   |             |
| 1-13/32" | 1.40625"  | 3.125"      | 6"            |   |             | 0356970                        | 89.55       |                                 |             |                                  |             |   |             |
| 1-27/64" | 1.421875" | 3.125"      | 6"            |   |             | 0356971                        | 89.55       |                                 |             |                                  |             |   |             |
| 1-7/16"  | 1.4375"   | 3.125"      | 6"            |   |             | 7006367                        | 125.04      | 7006408                         | 156.13      |                                  |             | 7011987                                   | 83.29:      |
| 1-29/64" | 1.453125" | 3.125"      | 6"            |   |             | 0356973                        | 92.81       |                                 |             |                                  |             |   |             |
| 1-15/32" | 1.46875"  | 3.125"      | 6"            |   |             | 0356974                        | 93.13       |                                 |             |                                  |             |   |             |
| 1-31/64" | 1.484375" | 3.125"      | 6"            |   |             | 0356975                        | 93.76       |                                 |             |                                  |             |   |             |
| 1-1/2"   | 1.5"      | 3.125"      | 6"            |   |             | 7006368                        | 132.66      | 7006409                         | 170.89      |                                  |             | 7011988                                   | 86.09:      |

# S & D DRILL BITS, HSS DRILL BITS

## S & D Drill Bits Cont.

### Silver & Deming Drill Bits with Flatted Shanks



Cutting Tools

- Fastenal Premium S&D Drill Bits have a 135° split point to prevent drill walking and provide an accurate start. Fastenal bits are designed to work in a variety of applications and feature three flats on the shank to prevent slippage.
- Norseman Type 130 AG magnum drill bits have 135° split points and are made with a special Hi-Molybdenum tool steel for fast penetration and accurate starting. The space age nitro-carburized steel withstands higher

- drilling temperatures while maintaining sharpness. Recommended for use in work hardening grades of stainless steel and other hard metal drilling applications. Drills have three flats on the shank for a positive grip in the chuck.
- Norseman Type 130 drill bits are a general purpose 118° point H.S.S. drills recommended for use in portable air and electric drilling equipment with 1/2" chucks.
- Cle-Line 1892 drill bits have 3 flats on the shank which eliminates slipping in the chuck.

- The black oxide finish increases life by improving lubricity.
- Chicago-Latrobe 190F production drill bits are from premium HSS.
- The black oxide finish increases life by improving lubricity.
- The 3 flats on the shank which eliminates slipping in the chuck.
- The 118° split point eliminates "walking" and drills on contact without having to push as hard.



| Size     | Decimal   | Flute Lgth. | Overall Lgth. | Fastenal - Private Label Black and Gold Flatted 135° |             | Cle-Line Series 1892 Black Flatted 118° |             | Norseman Series 130-AG Black and Gold Flatted 135° |             | CL Series 190F Black Flatted 118° |             |
|----------|-----------|-------------|---------------|--|-------------|---|-------------|--|-------------|-----------------------------------|-------------|
|          |           |             |               | Part No.   | Price /Each | Part No.                                | Price /Each | Part No.   | Price /Each | Part No.                          | Price /Each |
| 1/2"     | 0.5"      | 3.125"      | 6"            |  |             | 7012230                                 | \$13.48     |  |             | 7006410                           | \$21.81     |
| 33/64"   | 0.515625" | 3.125"      | 6"            | 0316235  | \$23.97     | 7012231                                 | 27.91:      | 53950  | \$31.85     | 7006411                           | 21.81       |
| 17/32"   | 0.53125"  | 3.125"      | 6"            | 0316236  | 23.73       | 7012232                                 | 27.63:      | 53951  | 31.53       | 7006412                           | 21.81       |
| 35/64"   | 0.546875" | 3.125"      | 6"            | 0316237  | 24.99       | 7012233                                 | 29.10:      | 53952  | 33.21       | 7006413                           | 23.23       |
| 9/16"    | 0.5625"   | 3.125"      | 6"            | 0316238  | 24.20       | 7012234                                 | 28.18:      | 53953  | 32.16       | 7006414                           | 23.23       |
| 37/64"   | 0.578125" | 3.125"      | 6"            | 0316239  | 27.37       | 7012235                                 | 31.87:      | 53954  | 36.37       | 7006415                           | 25.22       |
| 19/32"   | 0.59375"  | 3.125"      | 6"            | 0316240  | 26.06       | 7012236                                 | 30.35:      | 53955  | 34.63       | 7006416                           | 25.22       |
| 39/64"   | 0.609375" | 3.125"      | 6"            | 0316241  | 27.59       | 7012237                                 | 32.13:      | 53956  | 36.67       | 7006417                           | 26.04       |
| 5/8"     | 0.625"    | 3.125"      | 6"            | 0316242  | 26.06       | 7012238                                 | 30.52:      | 53957  | 34.97       | 7006418                           | 26.03       |
| 41/64"   | 0.640625" | 3.125"      | 6"            | 0316243  | 29.68       | 7012239                                 | 34.56:      | 53958  | 39.44       | 7006419                           | 27.83       |
| 21/32"   | 0.65625"  | 3.125"      | 6"            | 0316244  | 28.29       | 7012240                                 | 32.95:      | 53959  | 37.60       | 7006420                           | 27.83       |
| 43/64"   | 0.671875" | 3.125"      | 6"            | 0316245  | 30.86       | 7012241                                 | 35.94:      | 53960  | 41.01       | 7006421                           | 28.86       |
| 11/16"   | 0.6875"   | 3.125"      | 6"            | 0316246  | 30.10       | 7012242                                 | 35.05:      | 53961  | 40.00       | 7006422                           | 28.86       |
| 45/64"   | 0.703125" | 3.125"      | 6"            | 0316247  | 32.45       | 7012243                                 | 37.79:      | 53962  | 43.12       | 7006423                           | 29.30       |
| 23/32"   | 0.71875"  | 3.125"      | 6"            | 0316248  | 30.89       | 7012244                                 | 35.98:      | 53963  | 41.06       | 7006424                           | 29.30       |
| 47/64"   | 0.734375" | 3.125"      | 6"            | 0316249  | 33.61       | 7012245                                 | 39.14:      | 53964  | 44.66       | 7006425                           | 31.74       |
| 3/4"     | 0.75"     | 3.125"      | 6"            | 0316250  | 31.88       | 7012246                                 | 37.25:      | 53965  | 42.62       | 7006426                           | 31.75       |
| 49/64"   | 0.765625" | 3.125"      | 6"            | 0316251  | 36.42       | 7012247                                 | 42.41:      | 53966  | 48.40       | 7006427                           | 33.91       |
| 25/32"   | 0.78125"  | 3.125"      | 6"            | 0316252  | 34.65       | 7012248                                 | 40.35:      | 53967  | 46.05       | 7006428                           | 33.91       |
| 51/64"   | 0.796875" | 3.125"      | 6"            | 0316253  | 37.08       | 7012260                                 | 22.32       | 53968  | 49.28       | 7006429                           | 37.11       |
| 13/16"   | 0.8125"   | 3.125"      | 6"            | 0316254  | 35.12       | 7012249                                 | 41.09:      | 53969  | 47.05       | 7006430                           | 35.98       |
| 53/64"   | 0.828125" | 3.125"      | 6"            | 0316255  | 39.22       | 7012261                                 | 45.67:      | 53970  | 52.12       | 7006431                           | 38.59       |
| 27/32"   | 0.84375"  | 3.125"      | 6"            | 0316256  | 37.35       | 7012250                                 | 43.50:      | 53971  | 49.64       | 7006432                           | 37.46       |
| 55/64"   | 0.859375" | 3.125"      | 6"            | 0316257  | 40.10       | 7012262                                 | 46.69:      | 53972  | 53.28       | 7006433                           | 40.08       |
| 7/8"     | 0.875"    | 3.125"      | 6"            | 0316258  | 38.99       | 7012251                                 | 45.40:      | 53973  | 51.81       | 7006434                           | 38.95       |
| 57/64"   | 0.890625" | 3.125"      | 6"            | 0316259  | 42.55       | 7012263                                 | 49.55:      | 53974  | 56.54       | 7006435                           | 41.56       |
| 29/32"   | 0.90625"  | 3.125"      | 6"            | 0316260  | 40.52       | 7012252                                 | 47.19:      | 53975  | 53.85       | 7006436                           | 39.70       |
| 59/64"   | 0.921875" | 3.125"      | 6"            | 0316261  | 44.78       | 7012264                                 | 52.15:      | 53976  | 59.51       | 7006437                           | 44.89       |
| 15/16"   | 0.9375"   | 3.125"      | 6"            | 0316262  | 43.54       | 7012253                                 | 50.70:      | 53977  | 57.86       | 7006438                           | 43.04       |
| 61/64"   | 0.953125" | 3.125"      | 6"            | 0316263  | 48.29       | 7012265                                 | 56.23:      | 53978  | 64.17       | 7006439                           | 47.50       |
| 31/32"   | 0.96875"  | 3.125"      | 6"            | 0316264  | 45.99       | 7012254                                 | 53.55:      | 53979  | 61.11       | 7006440                           | 45.63       |
| 63/64"   | 0.984375" | 3.125"      | 6"            | 0316265  | 52.15       | 7012266                                 | 60.73:      | 53980  | 69.30       | 7006441                           | 53.06       |
| 1"       | 1"        | 3.125"      | 6"            | 0316266  | 50.40       | 7012255                                 | 58.69:      | 53981  | 66.97       | 7006442                           | 50.45       |
| 1-1/64"  | 1.015625" | 3.125"      | 6"            |  |             | 7012267                                 | 41.76       |  |             | 0356554                           | 43.38       |
| 1-1/32"  | 1.03125"  | 3.125"      | 6"            | 0316272  | 71.28       | 7012268                                 | 41.92       | 53982  | 94.72       | 0356555                           | 43.37       |
| 1-3/64"  | 1.046875" | 3.125"      | 6"            |  |             | 7012269                                 | 83.00:      |  |             | 0356556                           | 41.52       |
| 1-1/16"  | 1.0625"   | 3.125"      | 6"            | 0316267  | 65.27       | 7012256                                 | 40.82       | 53983  | 86.73       | 7006443                           | 58.39       |
| 1-5/64"  | 1.078125" | 3.125"      | 6"            |  |             | 7012270                                 | 76.00:      |  |             | 0356558                           | 46.02       |
| 1-3/32"  | 1.09375"  | 3.125"      | 6"            | 0316273  | 78.75       | 7012271                                 | 46.78       | 53984  | 104.64      | 0356559                           | 46.02       |
| 1-3/32"  | 1.09375"  | 3.125"      | 6"            |  |             | 7012272                                 | 91.70:      |  |             | 0356560                           | 47.23       |
| 1-1/8"   | 1.125"    | 3.125"      | 6"            | 0316268  | 68.86       | 7012257                                 | 43.99       | 53985  | 95.14       | 7006444                           | 66.42       |
| 1-9/64"  | 1.140625" | 3.125"      | 6"            |  |             | 7012273                                 | 82.00:      |  |             | 0356562                           | 51.29       |
| 1-5/32"  | 1.15625"  | 3.125"      | 6"            | 0316269  | 74.37       | 7012274                                 | 49.37       | 53986  | 98.83       | 0356563                           | 51.30       |
| 1-11/64" | 1.171875" | 3.125"      | 6"            |  |             | 7012275                                 | 86.60:      |  |             | 0356564                           | 52.21       |
| 1-3/16"  | 1.1875"   | 3.125"      | 6"            | 0316270  | 76.01       | 7012258                                 | 47.09       | 53987  | 101.02      | 7006445                           | 73.42       |
| 1-13/64" | 1.203125" | 3.125"      | 6"            |  |             | 7012276                                 | 88.52:      |  |             | 0356566                           | 57.83       |
| 1-7/32"  | 1.21875"  | 3.125"      | 6"            | 0316274  | 96.44       | 7012277                                 | 53.62       | 53988  | 128.16      | 0356567                           | 57.82       |
| 1-15/64" | 1.234375" | 3.125"      | 6"            |  |             | 7012278                                 | 112.30:     |  |             | 0356568                           | 58.30       |
| 1-1/4"   | 1.25"     | 3.125"      | 6"            | 0316271  | 88.49       | 7012259                                 | 51.53       | 53989  | 117.59      | 7006446                           | 81.99       |
| 1-17/64" | 1.265625" | 3.125"      | 6"            |  |             | 7012279                                 | 103.04:     |  |             | 0356570                           | 74.97       |
| 1-9/32"  | 1.28125"  | 3.125"      | 6"            |  |             | 7012280                                 | 70.10       |  |             | 0356571                           | 75.78       |

## S & D Drill Bits Cont.



| Size     | Decimal   | Flute Lgth. | Overall Lgth. | Fastenal - Private Label Black and Gold Flatted 135° |             | (Cle-Line) Series 1892 Black Flatted 118° |             | (Norseman) Series 130-AG Black and Gold Flatted 135° |             | (CL) Series 190F Black Flatted 118° |             |
|----------|-----------|-------------|---------------|--|-------------|---|-------------|--|-------------|-------------------------------------|-------------|
|          |           |             |               | Part No.   | Price /Each | Part No.                                  | Price /Each | Part No.   | Price /Each | Part No.                            | Price /Each |
| 1-19/64" | 1.296875" | 3.125"      | 6"            |  |             | 7012281                                   | \$72.73     |  |             | 0356572                             | \$76.77     |
| 1-5/16"  | 1.3125"   | 3.125"      | 6"            | 0316275  | \$116.60    | 7012282                                   | 135.78:     | 53990  | \$154.95    | 7006447                             | 107.38      |
| 1-21/64" | 1.328125" | 3.125"      | 6"            |  |             | 7012283                                   | 82.94       |  |             | 0356574                             | 81.15       |
| 1-11/32" | 1.34375"  | 3.125"      | 6"            |  |             | 7012284                                   | 83.66       |  |             | 0356575                             | 82.68       |
| 1-23/64" | 1.359375" | 3.125"      | 6"            |  |             | 7012285                                   | 84.27       |  |             | 0356576                             | 82.68       |
| 1-3/8"   | 1.375"    | 3.125"      | 6"            | 0316276  | 118.12      | 7012286                                   | 138.05:     | 53991  | 157.97      | 7006448                             | 119.62      |
| 1-25/64" | 1.390625" | 3.125"      | 6"            |  |             | 7012287                                   | 89.05       |  |             | 0356578                             | 94.24       |
| 1-13/32" | 1.40625"  | 3.125"      | 6"            |  |             | 7012288                                   | 89.46       |  |             | 0356579                             | 96.45       |
| 1-27/64" | 1.421875" | 3.125"      | 6"            |  |             | 7012289                                   | 90.10       |  |             | 0356580                             | 96.45       |
| 1-7/16"  | 1.4375"   | 3.125"      | 6"            | 0316277  | 132.44      | 7012290                                   | 114.75:     | 53992  | 176.00      | 7006449                             | 136.15      |
| 1-29/64" | 1.453125" | 3.125"      | 6"            |  |             | 7012291                                   | 95.37       |  |             | 0356582                             | 98.03       |
| 1-15/32" | 1.46875"  | 3.125"      | 6"            |  |             | 7012292                                   | 96.24       |  |             | 0356583                             | 101.04      |
| 1-31/64" | 1.484375" | 3.125"      | 6"            |  |             | 7012293                                   | 96.44       |  |             | 0356584                             | 101.04      |
| 1-1/2"   | 1.5"      | 3.125"      | 6"            | 316278   | 134.95      | 7012294                                   | 157.91:     | 53993  | 180.87      | 7006450                             | 142.08      |

## HSS Drill Bits

### HSS 6" Extension Drill

- Cle-Line 1803 general purpose drill bits have a 6" extended shank for long reach applications.
- The 135° split point is self centering for faster drill penetration.
- The black oxide finish increases wear resistance and adds lubricity.
- Chicago-Latrobe 906 production drill bits are made from premium HSS.

- Has a 6" extended shank for long reach applications.
- The 135° P3 split point is self centering for reduced thrust and easier penetration.
- The black oxide finish increases wear resistance and adds lubricity.
- These drill bits are manufactured to NAS 907 Type B aerospace specifications.



### Fractionals

| Size   | Decimal   | Flute Lgth. | Overall Lgth. | 6" Extension Heavy Duty 135° Split Point |             | Cle-Line 1803 Series Black Oxide 135° Split Point |             | Norseman Type 166 Black Heavy Duty Surface Treated |             | CL 906 Series Production Drills |             |
|--------|-----------|-------------|---------------|--|-------------|---|-------------|--|-------------|---------------------------------|-------------|
|        |           |             |               | Part No.                                 | Price /Each | Part No.  | Price /Each | Part No.   | Price /Each | Part No.                        | Price /Each |
| 3/64"  | 0.046875" | 0.75"       | 6"            |  |             |   |             |  |             | 7006654                         | \$6.57      |
| 1/16"  | 0.0625"   | 0.875"      | 6"            |  |             | 7011746   | \$2.49      |  |             | 7006658                         | 3.41        |
| 5/64"  | 0.078125" | 1"          | 6"            |  |             | 7011747   | 2.49        |  |             | 7006664                         | 3.41        |
| 3/32"  | 0.09375"  | 1.25"       | 6"            | 0346087                                  | \$4.72      | 7011748   | 5.06:       | 53157  | \$5.39      | 7006671                         | 2.85        |
| 7/64"  | 0.109375" | 1.5"        | 6"            | 0346088                                  | 4.72        | 7011749   | 5.06:       | 53158  | 5.39        | 7006678                         | 2.95        |
| 1/8"   | 0.125"    | 1.625"      | 6"            | 0346089                                  | 3.17        | 7011750   | 3.40:       | 53159  | 3.62        | 7006684                         | 2.95        |
| 9/64"  | 0.140625" | 1.75"       | 6"            | 0346090                                  | 3.47        | 7011751   | 3.72:       | 53160  | 3.96        | 7006688                         | 3.51        |
| 5/32"  | 0.15625"  | 2"          | 6"            | 0346091                                  | 3.79        | 7011752   | 4.07:       | 53161  | 4.34        | 7006694                         | 3.56        |
| 11/64" | 0.171875" | 2.125"      | 6"            | 0346092                                  | 4.09        | 7011753   | 4.38:       | 53162  | 4.67        | 7006700                         | 3.57        |
| 3/16"  | 0.1875"   | 2.3125"     | 6"            | 0346093                                  | 4.44        | 7011754   | 4.76:       | 53163  | 5.08        | 7006706                         | 3.57        |
| 13/64" | 0.203125" | 2.4375"     | 6"            | 0346094                                  | 4.67        | 7011755   | 5.01:       | 53164  | 5.34        | 7006713                         | 4.38        |
| 7/32"  | 0.21875"  | 2.5"        | 6"            | 0346095                                  | 4.95        | 7011756   | 5.31:       | 53165  | 5.66        | 7006718                         | 4.38        |
| 15/64" | 0.234375" | 2.625"      | 6"            | 0346096                                  | 5.15        | 7011757   | 5.52:       | 53166  | 5.88        | 7006721                         | 4.80        |
| 1/4"-E | 0.25"     | 2.75"       | 6"            | 0346097                                  | 5.37        | 011758  | 5.75:       | 53167  | 6.13        | 7006722                         | 4.80        |
| 17/64" | 0.265625" | 2.875"      | 6"            |  |             | 7011759   | 6.85        |  |             | 7006723                         | 11.16       |
| 9/32"  | 0.28125"  | 2.9375"     | 6"            |  |             | 7011760   | 7.40        |  |             | 7006724                         | 11.73       |
| 19/64" | 0.296875" | 3.0625"     | 6"            |  |             | 7011761   | 8.71        |  |             | 7006725                         | 13.88       |
| 5/16"  | 0.3125"   | 3.1875"     | 6"            |  |             | 7011762   | 9.23        |  |             | 7006726                         | 14.83       |
| 21/64" | 0.328125" | 3.3125"     | 6"            |  |             | 7011763   | 10.69       |  |             | 7006727                         | 15.87       |
| 11/32" | 0.34375"  | 3.4375"     | 6"            |  |             | 7011764   | 10.87       |  |             | 7006728                         | 15.86       |
| 23/64" | 0.359375" | 3.5"        | 6"            |  |             | 7011765   | 11.48       |  |             | 7006729                         | 17.93       |
| 3/8"   | 0.375"    | 3.625"      | 6"            |  |             | 7011766   | 11.48       |  |             | 7006730                         | 18.02       |
| 25/64" | 0.390625" | 3.75"       | 6"            |  |             | 7011767   | 13.37       |  |             | 7006731                         | 19.94       |
| 13/32" | 0.40625"  | 3.875"      | 6"            |  |             | 7011768   | 14.42       |  |             | 7006732                         | 20.24       |
| 27/64" | 0.421875" | 3.9375"     | 6"            |  |             | 7011769   | 15.02       |  |             | 7006733                         | 21.80       |
| 7/16"  | 0.4375"   | 4.0625"     | 6"            |  |             | 7011770   | 15.35       |  |             | 7006734                         | 21.93       |
| 29/64" | 0.453125" | 4.1875"     | 6"            |  |             | 7011771   | 15.50       |  |             | 7006735                         | 24.08       |
| 15/32" | 0.46875"  | 4.3125"     | 6"            |  |             | 7011772   | 16.25       |  |             | 7006736                         | 25.20       |
| 31/64" | 0.484375" | 4.375"      | 6"            |  |             | 7011773   | 16.41       |  |             | 7006737                         | 26.08       |
| 1/2"   | 0.5"      | 4.5"        | 6"            |  |             | 7011774   | 16.73       |  |             | 7006738                         | 26.08       |

The : symbol after a price denotes that it is a Direct Ship Product (DSP) and shipping, availability & lead times may vary.

# HSS DRILL BITS

## HSS Drill Bits Cont.

### HSS 6" Extension Drill Cont.

Cutting Tools



#### Wire Sizes

| Size | Decimal | Flute Lgth. | Overall Lgth. | Fastenal-Private Label Black 135° |             | Cle-Line Series 1803 Black 135° |             | Norseman Series 166 Black 135° |             | CL Series 906 NAS Standard Black 135° |             |
|------|---------|-------------|---------------|-----------------------------------|-------------|---------------------------------|-------------|--------------------------------|-------------|---------------------------------------|-------------|
|      |         |             |               | Part No.                          | Price /Each | Part No.                        | Price /Each | Part No.                       | Price /Each | Part No.                              | Price /Each |
| #1   | 0.228"  | 2-5/8"      | 6"            | 0346098                           | \$5.11      | 7011775                         | \$5.48:     | 0310994                        | \$5.84      | 7006720                               | \$5.26      |
| #2   | 0.221"  | 2-5/8"      | 6"            |                                   |             | 7011776                         | 3.83        |                                |             | 7006719                               | 5.26        |
| #3   | 0.213"  | 2-1/2"      | 6"            |                                   |             | 7011777                         | 3.63        |                                |             | 7006717                               | 5.15        |
| #4   | 0.209"  | 2-1/2"      | 6"            |                                   |             | 7011778                         | 3.63        |                                |             | 7006716                               | 5.16        |
| #5   | 0.2055" | 2-1/2"      | 6"            |                                   |             | 7011779                         | 3.63        |                                |             | 7006715                               | 5.07        |
| #6   | 0.204"  | 2-1/2"      | 6"            |                                   |             | 7011780                         | 3.63        |                                |             | 7006714                               | 4.74        |
| #7   | 0.201"  | 2-7/16"     | 6"            |                                   |             | 7011781                         | 3.40        |                                |             | 7006712                               | 4.74        |
| #8   | 0.199"  | 2-7/16"     | 6"            |                                   |             | 7011782                         | 3.40        |                                |             | 7006711                               | 4.76        |
| #9   | 0.196"  | 2-7/16"     | 6"            |                                   |             | 7011783                         | 3.29        |                                |             | 7006710                               | 4.75        |
| #10  | 0.1935" | 2-7/16"     | 6"            | 0346099                           | 4.27        | 7011784                         | 4.58:       | 0310995                        | 4.88        | 7006709                               | 4.44        |
| #11  | 0.191"  | 2-5/16"     | 6"            | 0346100                           | 4.17        | 7011785                         | 4.47:       | 0310996                        | 4.77        | 7006708                               | 4.19        |
| #12  | 0.189"  | 2-5/16"     | 6"            |                                   |             | 7011786                         | 3.05        |                                |             | 7006707                               | 4.19        |
| #13  | 0.185"  | 2-5/16"     | 6"            |                                   |             | 7011787                         | 3.05        |                                |             | 7006705                               | 4.19        |
| #14  | 0.182"  | 2-3/16"     | 6"            |                                   |             | 7011788                         | 3.05        |                                |             | 7006704                               | 4.28        |
| #15  | 0.18"   | 2-3/16"     | 6"            |                                   |             | 7011789                         | 3.05        |                                |             | 7006703                               | 4.28        |
| #16  | 0.177"  | 2-3/16"     | 6"            |                                   |             | 7011790                         | 3.03        |                                |             | 7006702                               | 4.19        |
| #17  | 0.173"  | 2-3/16"     | 6"            |                                   |             | 7011791                         | 3.03        |                                |             | 7006701                               | 4.35        |
| #18  | 0.1695" | 2-1/8"      | 6"            |                                   |             | 7011792                         | 3.03        |                                |             | 7006699                               | 4.28        |
| #19  | 0.166"  | 2-1/8"      | 6"            |                                   |             | 7011793                         | 3.03        |                                |             | 7006698                               | 3.82        |
| #20  | 0.161"  | 2-1/8"      | 6"            | 0346101                           | 3.72        | 7011794                         | 3.99:       | 0310997                        | 4.25        | 7006697                               | 3.67        |
| #21  | 0.159"  | 2-1/8"      | 6"            | 0346102                           | 3.72        | 7011795                         | 3.99:       | 0310998                        | 4.25        | 7006696                               | 3.51        |
| #22  | 0.157"  | 2"          | 6"            |                                   |             | 7011796                         | 2.75        |                                |             | 7006695                               | 3.92        |
| #23  | 0.154"  | 2"          | 6"            |                                   |             | 7011797                         | 2.75        |                                |             | 7006693                               | 3.92        |
| #24  | 0.152"  | 2"          | 6"            |                                   |             | 7011798                         | 2.75        |                                |             | 7006692                               | 3.91        |
| #25  | 0.1495" | 1-7/8"      | 6"            |                                   |             | 7011799                         | 2.75        |                                |             | 7006691                               | 3.91        |
| #26  | 0.147"  | 1-7/8"      | 6"            |                                   |             | 7011800                         | 2.75        |                                |             | 7006690                               | 3.91        |
| #27  | 0.144"  | 1-7/8"      | 6"            |                                   |             | 7011801                         | 2.70        |                                |             | 7006689                               | 3.51        |
| #28  | 0.1405" | 1-3/4"      | 6"            |                                   |             | 7011802                         | 2.75        |                                |             | 7006687                               | 3.92        |
| #29  | 0.136"  | 1-3/4"      | 6"            | 0346103                           | 3.47        | 7011803                         | 3.72:       | 0310999                        | 3.96        | 7006686                               | 3.83        |
| #30  | 0.1285" | 1-5/8"      | 6"            | 0346104                           | 3.47        | 7011804                         | 3.72:       | 0311000                        | 3.96        | 7006685                               | 2.79        |
| #31  | 0.12"   | 1-5/8"      | 6"            |                                   |             | 7011805                         | 2.36        |                                |             | 7006683                               | 3.19        |
| #32  | 0.116"  | 1-5/8"      | 6"            |                                   |             | 7011806                         | 2.36        |                                |             | 7006682                               | 3.19        |
| #33  | 0.113"  | 1-1/2"      | 6"            |                                   |             | 7011807                         | 2.31        |                                |             | 7006681                               | 3.19        |
| #34  | 0.111"  | 1-1/2"      | 6"            |                                   |             | 7011808                         | 2.31        |                                |             | 7006680                               | 3.19        |
| #35  | 0.11"   | 1-1/2"      | 6"            |                                   |             | 7011809                         | 2.31        |                                |             | 7006679                               | 3.19        |
| #36  | 0.1065" | 1-7/16"     | 6"            |                                   |             | 7011810                         | 2.31        |                                |             | 7006677                               | 3.20        |
| #37  | 0.104"  | 1-7/16"     | 6"            |                                   |             | 7011811                         | 2.31        |                                |             | 7006676                               | 3.19        |
| #38  | 0.1015" | 1-7/16"     | 6"            |                                   |             | 7011812                         | 2.31        |                                |             | 7006675                               | 3.19        |
| #39  | 0.0995" | 1-3/8"      | 6"            |                                   |             | 7011813                         | 2.31        |                                |             | 7006674                               | 3.19        |
| #40  | 0.098"  | 1-3/8"      | 6"            | 0346105                           | 4.72        | 7011814                         | 5.06:       | 0311001                        | 5.39        | 7006673                               | 2.71        |
| #41  | 0.096"  | 1-3/8"      | 6"            |                                   |             |                                 |             |                                |             | 7006672                               | 2.91        |
| #42  | 0.0935" | 1-1/4"      | 6"            |                                   |             |                                 |             |                                |             | 7006670                               | 2.91        |
| #43  | 0.089"  | 1-1/4"      | 6"            |                                   |             |                                 |             |                                |             | 7006669                               | 3.67        |
| #44  | 0.086"  | 1-1/8"      | 6"            |                                   |             |                                 |             |                                |             | 7006668                               | 3.76        |
| #45  | 0.082"  | 1-1/8"      | 6"            |                                   |             |                                 |             |                                |             | 7006667                               | 3.76        |
| #46  | 0.081"  | 1-1/8"      | 6"            |                                   |             |                                 |             |                                |             | 7006666                               | 3.76        |
| #47  | 0.0785" | 1"          | 6"            |                                   |             |                                 |             |                                |             | 7006665                               | 3.76        |
| #48  | 0.076"  | 1"          | 6"            |                                   |             |                                 |             |                                |             | 7006663                               | 3.76        |
| #49  | 0.073"  | 1"          | 6"            |                                   |             |                                 |             |                                |             | 7006662                               | 3.76        |
| #50  | 0.07"   | 1"          | 6"            |                                   |             |                                 |             |                                |             | 7006661                               | 3.58        |
| #51  | 0.067"  | 1"          | 6"            |                                   |             |                                 |             |                                |             | 7006660                               | 3.76        |
| #52  | 0.0635" | 7/8"        | 6"            |                                   |             |                                 |             |                                |             | 7006659                               | 3.76        |
| #53  | 0.0595" | 7/8"        | 6"            |                                   |             |                                 |             |                                |             | 7006657                               | 7.03        |
| #54  | 0.055"  | 7/8"        | 6"            |                                   |             |                                 |             |                                |             | 7006656                               | 7.03        |
| #55  | 0.052"  | 7/8"        | 6"            |                                   |             |                                 |             |                                |             | 7006655                               | 7.03        |
| #56  | 0.0465" | 3/4"        | 6"            |                                   |             |                                 |             |                                |             | 7006653                               | 7.03        |
| #57  | 0.043"  | 3/4"        | 6"            |                                   |             |                                 |             |                                |             | 7006652                               | 9.56        |
| #58  | 0.042"  | 11/16"      | 6"            |                                   |             |                                 |             |                                |             | 7006651                               | 9.56        |
| #59  | 0.041"  | 11/16"      | 6"            |                                   |             |                                 |             |                                |             | 7006650                               | 9.56        |
| #60  | 0.04"   | 11/16"      | 6"            |                                   |             |                                 |             |                                |             | 7006649                               | 8.62        |



## HSS Drill Bits Cont.

### 12" Aircraft Extension Drills Black 135°



- Cle-Line 1805 general purpose drill bits have a 12" extended shank for long reach applications.
- The 135° split point is self centering for faster drill penetrations.
- The black oxide finish increases wear resistance and adds lubricity.
- Chicago-Latrobe 912 production drill bits are made from premium HSS.
- Has a 12" extended shank for long reach applications.
- The 135° P3 split point is self centering for reduced thrust and easier penetration.
- The black oxide finish increases wear resistance and adds lubricity.
- These drill bits are manufactured to NAS 907 Type B aerospace specifications.



| Fractionals |           |             |               | Fastenal Private Label |             | Cle-Line Series 1805 |             | Norseman Series 168 Black 135° |             | Chicago Latrobe Series 912 NAS Standard |             |
|-------------|-----------|-------------|---------------|------------------------|-------------|----------------------|-------------|--------------------------------|-------------|---|-------------|
| Size        | Decimal   | Flute Lgth. | Overall Lgth. | Part No.               | Price /Each | Part No.             | Price /Each | Part No.                       | Price /Each | Part No.                                | Price /Each |
| 3/64"       | 0.046875" | 0.75"       | 12"           |                        |             |                      |             |                                |             | 7006744                                 | \$12.67     |
| 1/16"       | 0.0625"   | 0.875"      | 12"           |                        |             | 7011815              | \$5.35      |                                |             | 7006748                                 | 10.44       |
| 5/64"       | 0.078125" | 1"          | 12"           |                        |             | 7011816              | 5.59        |                                |             | 7006754                                 | 10.44       |
| 3/32"       | 0.09375"  | 1.25"       | 12"           |                        |             | 7011817              | 5.67        |                                |             | 7006761                                 | 10.44       |
| 7/64"       | 0.109375" | 1.5"        | 12"           |                        |             | 7011818              | 5.74        |                                |             | 7006768                                 | 10.44       |
| 1/8         | 0.1250    | 1-5/8       | 12"           | 0346106                | \$6.03      | 7011819              | 6.22:       | 0311002                        | \$6.89      | 7006774                                 | 8.21        |
| 9/64        | 0.1406    | 1-3/4       | 12"           | 0346107                | 6.42        | 7011820              | 6.62:       | 0311003                        | 7.33        | 7006778                                 | 8.49        |
| 5/32        | 0.1562    | 2           | 12"           | 0346108                | 6.83        | 7011821              | 7.04:       | 0311004                        | 7.80        | 7006784                                 | 8.49        |
| 11/64       | 0.1719    | 2-1/8       | 12"           | 0346109                | 7.26        | 7011822              | 7.48:       | 0311005                        | 8.30        | 7006790                                 | 9.39        |
| 3/16        | 0.1875    | 2-5/16      | 12"           | 0346110                | 7.67        | 7011823              | 7.91:       | 0311006                        | 8.77        | 7006796                                 | 9.39        |
| 13/64       | 0.2031    | 2-7/16      | 12"           | 0346111                | 7.87        | 7011824              | 8.11:       | 0311007                        | 8.99        | 7006803                                 | 10.55       |
| 7/32        | 0.2188    | 2-1/2       | 12"           | 0346112                | 8.15        | 7011825              | 8.40:       | 0311008                        | 9.32        | 7006808                                 | 10.55       |
| 15/64       | 0.2344    | 2-5/8       | 12"           | 0346113                | 8.51        | 7011826              | 8.77:       | 0311009                        | 9.72        | 7006811                                 | 11.37       |
| 1/4         | 0.2500    | 2-3/4       | 12"           | 0346114                | 8.72        | 7011827              | 8.99:       | 0311010                        | 9.96        | 7006812                                 | 11.37       |
| 17/64       | 0.2656    | 2-7/8       | 12"           | 0346115                | 11.31       | 7011828              | 11.65:      | 0311011                        | 12.92       | 7006813                                 | 13.95       |
| 9/32        | 0.2812    | 2-15/16     | 12"           | 0346116                | 10.20       | 7011829              | 10.51:      | 0311012                        | 11.66       | 7006814                                 | 14.27       |
| 19/64       | 0.2969    | 3-1/16      | 12"           | 0346117                | 13.11       | 7011830              | 13.51:      | 0311013                        | 14.98       | 7006815                                 | 16.43       |
| 5/16        | 0.3125    | 3-3/16      | 12"           | 0346118                | 11.77       | 7011831              | 12.13:      | 0311014                        | 13.45       | 7006816                                 | 17.87       |
| 21/64       | 0.3281    | 3-5/16      | 12"           | 0346119                | 14.81       | 7011832              | 15.26:      | 0311015                        | 16.92       | 7006817                                 | 19.37       |
| 11/32       | 0.3438    | 3-7/16      | 12"           | 0346120                | 12.95       | 7011833              | 13.34:      | 0311016                        | 14.80       | 7006818                                 | 19.37       |
| 23/64       | 0.3594    | 3-1/2       | 12"           | 0346121                | 16.50       | 7011834              | 17.00:      | 0311017                        | 18.86       | 7006819                                 | 21.76       |
| 3/8         | 0.3750    | 3-5/8       | 12"           | 0346122                | 14.58       | 7011835              | 15.02:      | 0311018                        | 16.66       | 7006820                                 | 22.01       |
| 25/64       | 0.3906    | 3-3/4       | 12"           | 0346123                | 18.51       | 7011836              | 19.07:      | 0311019                        | 21.16       | 7006821                                 | 23.76       |
| 13/32       | 0.4062    | 3-7/8       | 12"           | 0346124                | 16.28       | 7011837              | 16.77:      | 0311020                        | 18.61       | 7006822                                 | 23.77       |
| 27/64       | 0.4219    | 3-15/16     | 12"           | 0346125                | 20.54       | 7011838              | 21.16:      | 0311021                        | 23.48       | 7006823                                 | 26.24       |
| 7/16        | 0.4375    | 4-1/16      | 12"           | 0346126                | 18.09       | 7011839              | 18.64:      | 0311022                        | 20.68       | 7006824                                 | 26.33       |
| 29/64       | 0.4531    | 4-3/16      | 12"           | 0346127                | 22.73       | 7011840              | 23.42:      | 0311023                        | 25.98       | 7006825                                 | 29.65       |
| 15/32       | 0.4688    | 4-5/16      | 12"           | 0346128                | 19.85       | 7011841              | 20.45:      | 0311024                        | 22.68       | 7006826                                 | 30.63       |
| 31/64       | 0.4844    | 4-3/8       | 12"           | 0346129                | 24.82       | 7011842              | 25.57:      | 0311025                        | 28.37       | 7006827                                 | 31.34       |
| 1/2         | 0.500     | 4-1/2       | 12"           | 0346130                | 21.61       | 7011843              | 22.26:      | 0311026                        | 24.70       | 7006828                                 | 31.41       |
| 17/32       | 0.5312    | 6           | 12"           | 0346131                | 58.08       |                      |             |                                |             |   |             |
| 9/16        | 0.5625    | 6           | 12"           | 0346132                | 62.82       |                      |             |                                |             |   |             |
| 19/32       | 0.5938    | 6           | 12"           | 0346133                | 66.69       |                      |             |                                |             |   |             |
| 5/8         | 0.625     | 6           | 12"           | 0346134                | 70.57       |                      |             |                                |             |   |             |
| 11/16       | 0.6875    | 6           | 12"           | 0346135                | 78.56       |                      |             |                                |             |   |             |
| 3/4         | 0.750     | 6           | 12"           | 0346136                | 86.39       |                      |             |                                |             |   |             |
| Wire Sizes  |           |             |               |                        |             |                      |             |                                |             |   |             |
| #1          |           | 2-5/8       | 12"           | 0346137                | \$8.51      | 7011844              | \$4.26:     | 0311027                        | \$9.72      | 7006810                                 | \$13.01     |
| #2          | 0.221"    | 2-5/8"      | 12"           |                        |             | 7011845              | 9.00        |                                |             | 7006809                                 | 13.02       |
| #3          | 0.213"    | 2-1/2"      | 12"           |                        |             | 7011846              | 8.93        |                                |             | 7006807                                 | 12.36       |
| #4          | 0.209"    | 2-1/2"      | 12"           |                        |             | 7011847              | 8.93        |                                |             | 7006806                                 | 12.36       |
| #5          | 0.2055"   | 2-1/2"      | 12"           |                        |             | 7011848              | 8.76        |                                |             | 7006805                                 | 12.36       |
| #6          | 0.204"    | 2-1/2"      | 12"           |                        |             | 7011849              | 8.72        |                                |             | 7006804                                 | 12.36       |
| #7          | 0.201"    | 2-7/16"     | 12"           |                        |             | 7011850              | 8.22        |                                |             | 7006802                                 | 11.26       |
| #8          | 0.199"    | 2-7/16"     | 12"           |                        |             | 7011851              | 8.40        |                                |             | 7006801                                 | 11.26       |
| #9          | 0.196"    | 2-7/16"     | 12"           |                        |             | 7011852              | 8.22        |                                |             | 7006800                                 | 10.69       |
| #10         | 0.1935"   | 2-7/16"     | 6             | 0346138                | 8.38        | 7011853              | 4.19:       | 0311028                        | 9.58        | 7006799                                 | 10.60       |
| #11         | 0.191"    | 2-5/16"     | 6             | 0346139                | 8.38        | 7011854              | 4.19:       | 0311029                        | 9.58        | 7006798                                 | 10.61       |
| #12         | 0.189"    | 2-5/16"     | 12"           |                        |             | 7011855              | 7.82        |                                |             | 7006797                                 | 11.26       |
| #13         | 0.185"    | 2-5/16"     | 12"           |                        |             | 7011856              | 7.78        |                                |             | 7006795                                 | 10.61       |
| #14         | 0.182"    | 2-3/16"     | 12"           |                        |             | 7011857              | 7.82        |                                |             | 7006794                                 | 11.17       |
| #15         | 0.18"     | 2-3/16"     | 12"           |                        |             | 7011858              | 7.82        |                                |             | 7006793                                 | 11.16       |
| #16         | 0.177"    | 2-3/16"     | 12"           |                        |             | 7011859              | 7.78        |                                |             | 7006792                                 | 10.59       |
| #17         | 0.173"    | 2-3/16"     | 12"           |                        |             | 7011860              | 7.82        |                                |             | 7006791                                 | 11.15       |
| #18         | 0.1695"   | 2-1/8"      | 12"           |                        |             | 7011861              | 7.82        |                                |             | 7006789                                 | 10.75       |
| #19         | 0.166"    | 2-1/8"      | 12"           |                        |             | 7011862              | 7.82        |                                |             | 7006788                                 | 11.15       |

# HSS DRILL BITS

## HSS Drill Bits Cont.

Cutting Tools



| Wire Sizes Cont. |         |             |               | Fastenal Private Label |             | Cle-Line Series 1805 |             | Norseman Series 168 Black 135° |             | Chicago Latrobe Series 912 NAS Standard |             |
|------------------|---------|-------------|---------------|------------------------|-------------|----------------------|-------------|--------------------------------|-------------|---|-------------|
| Size             | Decimal | Flute Lgth. | Overall Lgth. | Part No.               | Price /Each | Part No.             | Price /Each | Part No.                       | Price /Each | Part No.                                | Price /Each |
| #20              | 0.161"  | 2-1/8       | 6             | 0346140                | \$6.97      | 7011863              | \$3.49:     | 0311030                        | \$7.97      | 7006787                                 | \$9.41      |
| #21              | 0.159"  | 2-1/8       | 6             | 0346141                | 6.97        | 7011864              | 3.49:       | 0311031                        | 7.97        | 7006786                                 | 9.25        |
| #22              | 0.157"  | 2"          | 12"           |                        |             | 7011865              | 7.65        |                                |             | 7006785                                 | 10.54       |
| #23              | 0.154"  | 2"          | 12"           |                        |             | 7011866              | 7.65        |                                |             | 7006783                                 | 10.54       |
| #24              | 0.152"  | 2"          | 12"           |                        |             | 7011867              | 7.65        |                                |             | 7006782                                 | 10.56       |
| #25              | 0.1495" | 1-7/8"      | 12"           |                        |             | 7011868              | 7.60        |                                |             | 7006781                                 | 10.36       |
| #26              | 0.147"  | 1-7/8"      | 12"           |                        |             | 7011869              | 7.60        |                                |             | 7006780                                 | 10.54       |
| #27              | 0.144"  | 1-7/8"      | 12"           |                        |             | 7011870              | 7.40        |                                |             | 7006779                                 | 10.54       |
| #28              | 0.1405" | 1-3/4"      | 12"           |                        |             | 7011871              | 7.40        |                                |             | 7006777                                 | 10.37       |
| #29              | 0.1360" | 1-3/4       | 6             | 0346142                | 6.03        | 7011872              | 3.02:       | 0311032                        | 6.89        | 7006776                                 | 10.54       |
| #30              | 0.1285" | 1-5/8       | 6             | 0346143                | 6.03        | 7011873              | 3.02:       | 0311033                        | 6.89        | 7006775                                 | 9.24        |
| #31              | 0.12"   | 1-5/8"      | 12"           |                        |             | 7011874              | 7.12        |                                |             | 7006773                                 | 9.71        |
| #32              | 0.116"  | 1-5/8"      | 12"           |                        |             | 7011875              | 7.41        |                                |             | 7006772                                 | 10.54       |
| #33              | 0.113"  | 1-1/2"      | 12"           |                        |             | 7011876              | 7.41        |                                |             | 7006771                                 | 10.54       |
| #34              | 0.111"  | 1-1/2"      | 12"           |                        |             | 7011877              | 7.41        |                                |             | 7006770                                 | 10.54       |
| #35              | 0.11"   | 1-1/2"      | 12"           |                        |             | 7011878              | 7.41        |                                |             | 7006769                                 | 10.54       |
| #36              | 0.1065" | 1-7/16"     | 12"           |                        |             | 7011879              | 7.41        |                                |             | 7006767                                 | 10.56       |
| #37              | 0.104"  | 1-7/16"     | 12"           |                        |             | 7011880              | 7.41        |                                |             | 7006766                                 | 10.56       |
| #38              | 0.1015" | 1-7/16"     | 12"           |                        |             | 7011881              | 7.41        |                                |             | 7006765                                 | 10.56       |
| #39              | 0.0995" | 1-3/8"      | 12"           |                        |             | 7011882              | 7.41        |                                |             | 7006764                                 | 10.56       |
| #40              | 0.0980" | 1-3/8       | 6             | 0346144                | 6.03        | 7011883              | 3.02:       | 0311034                        | 6.89        | 7006763                                 | 9.25        |
| #41              | 0.096"  | 1-3/8"      | 12"           |                        |             |                      |             |                                |             | 7006762                                 | 10.55       |
| #42              | 0.0935" | 1-1/4"      | 12"           |                        |             |                      |             |                                |             | 7006760                                 | 10.56       |
| #43              | 0.089"  | 1-1/4"      | 12"           |                        |             |                      |             |                                |             | 7006759                                 | 10.56       |
| #44              | 0.086"  | 1-1/8"      | 12"           |                        |             |                      |             |                                |             | 7006758                                 | 10.56       |
| #45              | 0.082"  | 1-1/8"      | 12"           |                        |             |                      |             |                                |             | 7006757                                 | 10.56       |
| #46              | 0.081"  | 1-1/8"      | 12"           |                        |             |                      |             |                                |             | 7006756                                 | 10.56       |
| #47              | 0.0785" | 1"          | 12"           |                        |             |                      |             |                                |             | 7006755                                 | 10.56       |
| #48              | 0.076"  | 1"          | 12"           |                        |             |                      |             |                                |             | 7006753                                 | 10.56       |
| #49              | 0.073"  | 1"          | 12"           |                        |             |                      |             |                                |             | 7006752                                 | 10.56       |
| #50              | 0.07"   | 1"          | 12"           |                        |             |                      |             |                                |             | 7006751                                 | 10.45       |
| #51              | 0.067"  | 1"          | 12"           |                        |             |                      |             |                                |             | 7006750                                 | 10.77       |
| #52              | 0.0635" | 7/8"        | 12"           |                        |             |                      |             |                                |             | 7006749                                 | 10.77       |
| #53              | 0.0595" | 7/8"        | 12"           |                        |             |                      |             |                                |             | 7006747                                 | 12.56       |
| #54              | 0.055"  | 7/8"        | 12"           |                        |             |                      |             |                                |             | 7006746                                 | 12.56       |
| #55              | 0.052"  | 7/8"        | 12"           |                        |             |                      |             |                                |             | 7006745                                 | 12.56       |
| #56              | 0.0465" | 3/4"        | 12"           |                        |             |                      |             |                                |             | 7006743                                 | 12.56       |
| #57              | 0.043"  | 3/4"        | 12"           |                        |             |                      |             |                                |             | 7006742                                 | 12.56       |
| #58              | 0.042"  | 11/16"      | 12"           |                        |             |                      |             |                                |             | 7006741                                 | 13.96       |
| #59              | 0.041"  | 11/16"      | 12"           |                        |             |                      |             |                                |             | 7006740                                 | 13.96       |
| #60              | 0.04"   | 11/16"      | 12"           |                        |             |                      |             |                                |             | 7006739                                 | 13.96       |

### HSS Drill Bits



#### 3/8" Shank Drills High-Speed Steel - Type 128 118° Point - Bright Finish

For use in portable air or electric equipment with 3/8" chucks.



| Diameter | Part No. | Overall Lgth. | Flute Lgth. | Pkg. Qty. | Price /Each |
|----------|----------|---------------|-------------|-----------|-------------|
| 25/64    | 53561    | 5-1/8         | 3-3/4       | 6         | \$11.34     |
| 13/32    | 53562    | 5-1/4         | 3-7/8       | 6         | 10.43       |
| 27/64    | 53563    | 5-3/8         | 3-15/16     | 6         | 11.78       |
| 7/16     | 53564    | 5-1/2         | 4-1/16      | 6         | 10.65       |
| 29/64    | 53565    | 5-5/8         | 4-3/16      | 6         | 12.54       |
| 15/32    | 53566    | 5-3/4         | 4-5/16      | 6         | 12.00       |
| 31/64    | 53567    | 5-7/8         | 4-3/8       | 6         | 14.28       |
| 1/2      | 53568    | 6             | 4-1/2       | 6         | 13.52       |
| 17/32    | 0310488  | 6             | 4-1/4       | 1         | 27.70       |
| 9/16     | 0310489  | 6             | 4-1/4       | 1         | 28.78       |
| 19/32    | 0310490  | 6             | 4-1/4       | 1         | 31.31       |
| 5/8      | 0310491  | 6             | 4-1/4       | 1         | 31.50       |



## Type 160 Drills 12" Longboy - Bright Finish

This general purpose 118° point H.S.S. drill is recommended for a wide range of deep hole production drilling applications.



| Size  | Part No. | Overall Lgth. | Flute Lgth. | Pkg. Qty. | Price /Each |
|-------|----------|---------------|-------------|-----------|-------------|
| 1/8   | 53209    | 12            | 9           | 1         | \$20.05     |
| 9/64  | 53210    | 12            | 9           | 1         | 25.04       |
| 5/32  | 53211    | 12            | 9           | 1         | 22.94       |
| 11/64 | 53212    | 12            | 9           | 1         | 27.29       |
| 3/16  | 53213    | 12            | 9           | 1         | 22.87       |
| 13/64 | 53214    | 12            | 9           | 1         | 28.45       |
| 7/32  | 53215    | 12            | 9           | 1         | 26.06       |
| 15/64 | 53216    | 12            | 9           | 1         | 28.45       |
| 1/4   | 53217    | 12            | 9           | 1         | 24.04       |
| 17/64 | 53218    | 12            | 9           | 1         | 31.31       |
| 9/32  | 53219    | 12            | 9           | 1         | 26.13       |
| 19/64 | 53220    | 12            | 9           | 1         | 32.80       |
| 5/16  | 53221    | 12            | 9           | 1         | 27.33       |
| 21/64 | 53222    | 12            | 9           | 1         | 35.74       |
| 11/32 | 53223    | 12            | 9           | 1         | 29.80       |
| 23/64 | 53224    | 12            | 9           | 1         | 38.24       |
| 3/8   | 53225    | 12            | 9           | 1         | 31.86       |
| 25/64 | 53226    | 12            | 9           | 1         | 42.56       |
| 13/32 | 53227    | 12            | 9           | 1         | 35.44       |
| 27/64 | 53228    | 12            | 9           | 1         | 44.11       |
| 7/16  | 53229    | 12            | 9           | 1         | 36.79       |
| 29/64 | 53230    | 12            | 9           | 1         | 51.98       |
| 15/32 | 53231    | 12            | 9           | 1         | 43.31       |
| 31/64 | 53232    | 12            | 9           | 1         | 54.80       |
| 1/2   | 53233    | 12            | 9           | 1         | 45.67       |
| 17/32 | 0310988  | 12            | 9           | 1         | 66.38       |
| 9/16  | 53235    | 12            | 9           | 1         | 71.79       |
| 19/32 | 0310989  | 12            | 9           | 1         | 76.21       |
| 5/8   | 53237    | 12            | 9           | 1         | 80.65       |
| 11/16 | 0310990  | 12            | 9           | 1         | 89.78       |
| 3/4   | 0310991  | 12            | 9           | 1         | 98.74       |

## HSS Step Drills



- Cle-Line 1874 & 1874TN drill bits have a 118° split point for faster and easier penetration.
- The Titanium Nitride (TiN) coating adds lubricity and hardness, enhancing chip flow and the life of the tool.

| Size            |           |            |               | Cle-Line Series 1874 Step Drills 118° |             | Cle-Line Series 1874 TiN Step Drills 118° |             |
|-----------------|-----------|------------|---------------|---------------------------------------|-------------|---|-------------|
| Size Range      | Hole Size | Shank Dia. | Overall Lgth. | Part No.                              | Price /Each | Part No.                                  | Price /Each |
| 4-12mm x 1mm    | 4-12mm    | 6mm        | 65mm          | 7012068                               | \$19.87     | 7012069                                   | \$28.92     |
| 3/16-1/2 x 1/16 | 3/16-1/2  | 1/4"       | 3.125"        | 7012058                               | 20.47       | 7012064                                   | 28.87       |
| 1/8-1/2 x 1/32  | 1/8-1/2   | 1/4"       | 3.125"        | 7012059                               | 21.76       | 7012065                                   | 35.05       |
| 1/4-3/4 x 1/16  | 1/4-3/4   | 3/8"       | 2.75"         | 7012060                               | 27.28       | 7012066                                   | 46.67       |
| 3/16-7/8 x 1/16 | 3/16-7/8  | 3/8"       | 3.25"         | 7012061                               | 43.24       | 7012067                                   | 75.27       |
| 7/8-1 3/8       | 7/8-1 3/8 | 3/8"       | 3.25"         | 7012062                               | 61.60       |   |             |
| 7/8-1-1/8       | 7/8 1 1/8 | 3/8"       | 3.109375"     | 7012063                               | 46.71       |   |             |

| Sets           |                                       |             |   |             |
|----------------|---------------------------------------|-------------|---|-------------|
| Contents       | Cle-Line Series 1874 Step Drills 118° |             | Cle-Line Series 1874 TiN Step Drills 118° |             |
|                | Part No.                              | Price /Each | Part No.                                  | Price /Each |
| 3/16-3/4 (3pc) | 7012746                               | \$82.94     | 7012747                                   | \$122.54    |

## HSS Pilot Drills and Mandrels

- Black Oxide surface finish increases wear resistance and the added lubricity improves the chip flow
- Premium High Speed Steel

### Mandrels

| Mandrel                 | Part No. | Price /Each |
|-------------------------|----------|-------------|
| 1/4 Round Shank Mandrel | 7012221  | \$4.78      |
| 3/8 Hex Shank Mandrel   | 7012222  | 6.26        |

### Pilot Drills

| Drill Dia. | Shank Dia. | Flute Lgth. | Overall Lgth. | Point Style   | Flats | Part No. | Price /Each |
|------------|------------|-------------|---------------|---------------|-------|----------|-------------|
| 1/4"       | 0.25"      | 1.5"        | 4"            | 135 Deg Split |       | 7012225  | \$2.18      |
| 1/4"       | 0.25"      | 1.5"        | 3"            | 135 Deg Split |       | 7012226  | 2.01        |
| 1/4"       | 0.25"      | 0.875"      | 3.0625"       | 118 Deg Split |       | 7012227  | 1.61        |
| 1/4"       | 0.25"      | 1.375"      | 3.125"        | 118 Deg Split |       | 7012228  | 1.73        |
| 1/4"       | 0.25"      | 1.375"      | 3.21875"      | 118 Deg       |       | 7012223  | 1.75        |
| 1/4"       | 0.25"      | 1.125"      | 4"            | 118 Deg Split |       | 7012229  | 1.80        |
| 1/4"       | 0.25"      | 1.125"      | 4"            | 118 Deg       |       | 7012224  | 1.89        |

## Carbide Tipped Glass and Tile Drill

- Designed to drill into glass, mirror, china and ceramic tile
- Spear point produces clean, smooth finish



| Part No. | Size   | Decimal | Price /Each |
|----------|--------|---------|-------------|
| 0354826  | 1/8"   | 0.125"  | \$4.34      |
| 0354827  | 3/16"  | 0.1875" | 4.95        |
| 0354828  | 1/4"-E | 0.25"   | 5.54        |
| 0354829  | 5/16"  | 0.3125" | 6.21        |
| 0354830  | 3/8"   | 0.375"  | 7.72        |
| 0354831  | 1/2"   | 0.5"    | 9.43        |

### Set

| Part No. | Size | Size Range   | Price /Each |
|----------|------|--------------|-------------|
| 0322538  | 4PC  | 1/8-1/2-X1/8 | \$28.87     |

# HSS DRILL BITS

## HSS Drill Bits Cont.



### Type 168 Drills 12" Extension Surface Treated Black Heavy-Duty

This heavy-duty 135° split point H.S.S. drill is used for drilling holes in hard to reach places.



| Size  | Part No. | Overall Lgth. | Flute Lgth. | Pkg. Qty. | Price /Each |
|-------|----------|---------------|-------------|-----------|-------------|
| 1/8   | 0311002  | 12            | 1-5/8       | 1         | \$6.89      |
| 9/64  | 0311003  | 12            | 1-3/4       | 1         | 7.33        |
| 5/32  | 0311004  | 12            | 2           | 1         | 7.80        |
| 11/64 | 0311005  | 12            | 2-1/8       | 1         | 8.30        |
| 3/16  | 0311006  | 12            | 2-5/16      | 1         | 8.77        |
| 13/64 | 0311007  | 12            | 2-7/16      | 1         | 8.99        |
| 7/32  | 0311008  | 12            | 2-1/2       | 1         | 9.32        |
| 15/64 | 0311009  | 12            | 2-5/8       | 1         | 9.72        |
| 1/4   | 0311010  | 12            | 2-3/4       | 1         | 9.96        |
| 17/64 | 0311011  | 12            | 2-7/8       | 1         | 12.92       |
| 9/32  | 0311012  | 12            | 2-15/16     | 1         | 11.66       |
| 19/64 | 0311013  | 12            | 3-1/16      | 1         | 14.98       |
| 5/16  | 0311014  | 12            | 3-3/16      | 1         | 13.45       |
| 21/64 | 0311015  | 12            | 3-5/16      | 1         | 16.92       |
| 11/32 | 0311016  | 12            | 3-7/16      | 1         | 14.80       |
| 23/64 | 0311017  | 12            | 3-1/2       | 1         | 18.86       |
| 3/8   | 0311018  | 12            | 3-5/8       | 1         | 16.66       |
| 25/64 | 0311019  | 12            | 3-3/4       | 1         | 21.16       |
| 13/32 | 0311020  | 12            | 3-7/8       | 1         | 18.61       |
| 27/64 | 0311021  | 12            | 3-15/16     | 1         | 23.48       |
| 7/16  | 0311022  | 12            | 4-1/16      | 1         | 20.68       |
| 29/64 | 0311023  | 12            | 4-3/16      | 1         | 25.98       |

Cutting Tools

| Size  | Part No. | Overall Lgth. | Flute Lgth. | Pkg. Qty. | Price /Each |
|-------|----------|---------------|-------------|-----------|-------------|
| 15/32 | 0311024  | 12            | 4-5/16      | 1         | \$22.68     |
| 31/64 | 0311025  | 12            | 4-3/8       | 1         | 28.37       |
| 1/2   | 0311026  | 12            | 4-1/2       | 1         | 24.70       |
| #1    | 0311027  | 12            | 2-5/8       | 1         | 9.72        |
| #10   | 0311028  | 12            | 2-7/16      | 1         | 9.58        |
| #11   | 0311029  | 12            | 2-5/16      | 1         | 9.58        |
| #20   | 0311030  | 12            | 2-1/8       | 1         | 7.97        |
| #21   | 0311031  | 12            | 2-1/8       | 1         | 7.97        |
| #29   | 0311032  | 12            | 1-3/4       | 1         | 6.89        |
| #30   | 0311033  | 12            | 1-5/8       | 1         | 6.89        |
| #40   | 0311034  | 12            | 1-3/8       | 1         | 6.89        |

### Type 165 Drills 18" Longboy - Bright Finish

This general purpose 118° point H.S.S. drill is recommended for a wide range of deep hole production drilling applications.



| Size  | Part No. | Overall Lgth. | Flute Lgth. | Pkg. Qty. | Price /Each |
|-------|----------|---------------|-------------|-----------|-------------|
| 3/16  | 53263    | 18            | 12          | 1         | \$46.36     |
| 7/32  | 53265    | 18            | 12          | 1         | 51.57       |
| 1/4   | 53267    | 18            | 12          | 1         | 50.52       |
| 9/32  | 53269    | 18            | 12          | 1         | 57.78       |
| 5/16  | 53271    | 18            | 12          | 1         | 60.59       |
| 11/32 | 53273    | 18            | 12          | 1         | 66.01       |
| 3/8   | 53275    | 18            | 12          | 1         | 64.61       |
| 13/32 | 53277    | 18            | 12          | 1         | 70.14       |
| 7/16  | 53279    | 18            | 12          | 1         | 69.82       |
| 15/32 | 53281    | 18            | 12          | 1         | 76.33       |
| 1/2   | 53283    | 18            | 12          | 1         | 78.67       |
| 17/32 | 0310992  | 18            | 12          | 1         | 101.13      |
| 9/16  | 53285    | 18            | 12          | 1         | 106.61      |
| 19/32 | 0310993  | 18            | 12          | 1         | 111.35      |
| 5/8   | 53287    | 18            | 12          | 1         | 115.30      |

# FASTENAL

## Fastenal 18" Extension Drill Bits

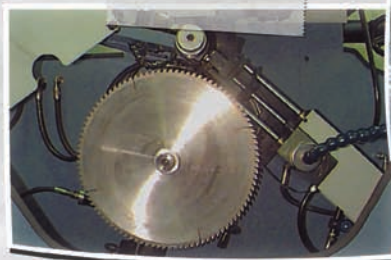
Heavy duty premium bits with 135° split point for drilling holes in hard to reach places.



| Part No. | Size  | Overall Lgth. | Flute Lgth. | Price /Each |
|----------|-------|---------------|-------------|-------------|
| 0346145  | 3/16  | 6             | 6           | \$40.56     |
| 0346146  | 7/32  | 6             | 6           | 45.13       |
| 0346147  | 1/4   | 6             | 6           | 44.20       |
| 0346148  | 9/32  | 6             | 6           | 50.56       |
| 0346149  | 5/16  | 6             | 6           | 53.02       |
| 0346150  | 11/32 | 6             | 6           | 57.75       |
| 0346151  | 3/8   | 6             | 6           | 56.53       |
| 0346152  | 13/32 | 6             | 6           | 61.38       |
| 0346153  | 7/16  | 6             | 6           | 61.09       |
| 0346154  | 15/32 | 6             | 6           | 66.78       |
| 0346155  | 1/2   | 6             | 6           | 68.83       |
| 0346156  | 17/32 | 6             | 6           | 88.49       |
| 0346157  | 9/16  | 6             | 6           | 93.29       |
| 0346158  | 19/32 | 6             | 6           | 97.43       |
| 0346159  | 5/8   | 6             | 6           | 100.89      |

# TOOL & CUTTER GRINDING

- Regrind, Reconditioning and Resharpener
- Automated CNC Regrind
- End Mills
- Cold Saw and Planer/Shear Blades
- Spade, Carbide, Step and Dovetail Drills
- Key Way, Annular and Milling Cutters
- Manual Grinding
- Taps
- Counter Sinks
- Hobs
- Reamers





## HSS Drill Bits Cont.



### 135°, HSS Jobber Length Split Point Parabolic Drills - Bright and TiN Coated

- Bright finish provides good chip ejection
- Titanium Nitride (TiN) coating adds lubricity and hardness which enhances chip flow, finish hole quality and drill life
- 135° split point is self-centering, for reduced thrust and easier penetration
- Premium High Speed Steel
- Parabolic flute configuration with proprietary Convoflute C/L parabolic design offers wider flute space, disperses chips away from the cutting edges more rapidly while increasing the volume of coolant flow
- Engineered for Deep hole drilling with depths of 10 to 12 x diameter
- Recommended for non-ferrous materials and low carbon steel
- Chicago-Latrobe 150DH bright drill bits and 150DHT TiN coated drill bits

| Fractional |           |             |               | Chicago Latrobe Bright Series 150DH |             | Chicago Latrobe TiN Series 150DHT |             |
|------------|-----------|-------------|---------------|-------------------------------------|-------------|-----------------------------------|-------------|
| Size       | Decimal   | Flute Lgth. | Overall Lgth. | Part No.                            | Price /Each | Part No.                          | Price /Each |
| 1/16"      | 0.0625"   | 0.875"      | 1.875"        | 7005758                             | \$1.82      | 7005872                           | \$3.57      |
| 5/64"      | 0.078125" | 1"          | 2"            | 7005764                             | 1.82        | 7005878                           | 3.58        |
| 3/32"      | 0.09375"  | 1.25"       | 2.25"         | 7005771                             | 1.82        | 7005885                           | 3.58        |
| 7/64"      | 0.109375" | 1.5"        | 2.625"        | 7005778                             | 1.82        | 7005892                           | 3.72        |
| 1/8"       | 0.125"    | 1.625"      | 2.75"         | 7005784                             | 1.82        | 7005898                           | 3.91        |
| 9/64"      | 0.140625" | 1.75"       | 2.875"        | 7005788                             | 2.02        | 7005902                           | 4.03        |
| 5/32"      | 0.15625"  | 2"          | 3.125"        | 7005794                             | 2.02        | 7005908                           | 4.12        |
| 11/64"     | 0.171875" | 2.125"      | 3.25"         | 7005800                             | 2.39        | 7005914                           | 4.58        |
| 3/16"      | 0.1875"   | 2.3125"     | 3.5"          | 7005806                             | 2.49        | 7005920                           | 4.97        |
| 13/64"     | 0.203125" | 2.4375"     | 3.625"        | 7005813                             | 2.95        | 7005927                           | 5.83        |
| 7/32"      | 0.21875"  | 2.5"        | 3.75"         | 7005818                             | 2.95        | 7005932                           | 6.19        |
| 15/64"     | 0.234375" | 2.625"      | 3.875"        | 7005822                             | 3.39        | 7005936                           | 6.66        |
| 1/4"-E     | 0.25"     | 2.75"       | 4"            | 7005826                             | 3.38        | 7005940                           | 6.91        |
| 17/64"     | 0.265625" | 2.875"      | 4.125"        | 7005829                             | 3.92        | 7005943                           | 9.10        |
| 9/32"      | 0.28125"  | 2.9375"     | 4.25"         | 7005833                             | 3.99        | 7005947                           | 9.41        |
| 19/64"     | 0.296875" | 3.0625"     | 4.375"        | 7005836                             | 4.95        | 7005950                           | 10.70       |
| 5/16"      | 0.3125"   | 3.1875"     | 4.5"          | 7005838                             | 5.11        | 7005952                           | 10.94       |
| 21/64"     | 0.328125" | 3.3125"     | 4.625"        | 7005841                             | 6.06        | 7005955                           | 12.24       |
| 11/32"     | 0.34375"  | 3.4375"     | 4.75"         | 7005844                             | 6.30        | 7005958                           | 13.39       |
| 23/64"     | 0.359375" | 3.5"        | 4.875"        | 7005847                             | 7.34        | 7005961                           | 15.63       |
| 3/8"       | 0.375"    | 3.625"      | 5"            | 7005849                             | 7.50        | 7005963                           | 16.34       |
| 25/64"     | 0.390625" | 3.75"       | 5.125"        | 7005852                             | 8.93        | 7005966                           | 18.18       |
| 27/64"     | 0.421875" | 3.9375"     | 5.375"        | 7005857                             | 10.13       | 7005971                           | 20.34       |
| 7/16"      | 0.4375"   | 4.0625"     | 5.5"          | 7005858                             | 10.28       | 7005972                           | 20.81       |
| 29/64"     | 0.453125" | 4.1875"     | 5.625"        | 7005859                             | 11.81       | 7005973                           | 24.64       |
| 15/32"     | 0.46875"  | 4.3125"     | 5.75"         | 7005860                             | 12.29       | 7005974                           | 25.92       |
| 31/64"     | 0.484375" | 4.375"      | 5.875"        | 7005861                             | 12.77       | 7005975                           | 26.40       |
| 1/2"       | 0.5"      | 4.5"        | 6"            | 7005862                             | 13.01       | 7005976                           | 26.71       |

| Fractional Set    |       | Chicago Latrobe 150DHT TiN |             |
|-------------------|-------|----------------------------|-------------|
| Size              |       | Part No.                   | Price /Each |
| 1/16 - 1/2 x 1/64 | 29 pc | 7007298                    | \$345.35    |

| Wire |         |             |               | Chicago Latrobe Bright |             |
|------|---------|-------------|---------------|------------------------|-------------|
| Size | Decimal | Flute Lgth. | Overall Lgth. | Part No.               | Price /Each |
| #1   | 0.228"  | 2.625"      | 3.875"        | 7005820                | \$3.79      |

| Letter |         |             |               | Chicago Latrobe TiN |             |
|--------|---------|-------------|---------------|---------------------|-------------|
| Size   | Decimal | Flute Lgth. | Overall Lgth. | Part No.            | Price /Each |
| Ltr A  | 0.234"  | 2.625"      | 3.875"        | 7005821             | \$3.43      |

### 135° HSS Split Point Parabolic Taper Length Drill - Bright and TiN Coated

- Chicago-Latrobe 120DH drill bits have a bright finish, which improves chip ejection.
- Made from premium HSS
- 135° split point is self centering, for reduced thrust and easier penetration.
- Parabolic flute configuration with proprietary Convoflute parabolic design offers wider flute space, disperses chips more rapidly while increasing coolant flow volume.
- Engineered for Deep hole drilling up to 10 to 16 X diameter.
- Chicago-Latrobe 150DHT has Titanium Nitride (TiN) coating, which adds lubricity and hardness, enhancing chip flow, finish hole quality and drill life.



| Fractional |           |             |               | CL Series 120DH Brite 135° |             | Norseman Series 221-PT TiN 135° |             |
|------------|-----------|-------------|---------------|----------------------------|-------------|---------------------------------|-------------|
| Size       | Decimal   | Flute Lgth. | Overall Lgth. | Part No.                   | Price /Each | Part No.                        | Price /Each |
| 1/8"       | 0.125"    | 3.375"      | 5.125"        | 7005692                    | \$7.09      | 0311685                         | \$9.21      |
| 9/64"      | 0.140625" | 3.625"      | 5.375"        | 7005693                    | 7.59        | 0311686                         | 10.37       |
| 5/32"      | 0.15625"  | 3.75"       | 5.375"        | 7005694                    | 7.65        | 0311687                         | 9.90        |
| 11/64"     | 0.171875" | 4.125"      | 5.75"         | 7005695                    | 7.81        | 0311688                         | 11.45       |
| 3/16"      | 0.1875"   | 4.125"      | 5.75"         | 7005696                    | 7.90        | 0311689                         | 10.01       |
| 13/64"     | 0.203125" | 4.375"      | 6"            | 7005697                    | 9.00        | 0311690                         | 14.72       |
| 7/32"      | 0.21875"  | 4.375"      | 6"            | 7005698                    | 9.18        | 0311691                         | 14.72       |
| 15/64"     | 0.234375" | 4.8125"     | 6.125"        | 7005699                    | 9.40        | 0311692                         | 15.30       |
| 1/4"-E     | 0.25"     | 4.8125"     | 6.125"        | 7005700                    | 9.40        | 0311693                         | 14.14       |
| 17/64"     | 0.265625" | 5"          | 6.25"         | 7005701                    | 10.85       | 0311694                         | 19.90       |
| 9/32"      | 0.28125"  | 5"          | 6.25"         | 7005702                    | 11.01       | 0311695                         | 19.25       |
| 19/64"     | 0.296875" | 5.125"      | 6.375"        | 7005703                    | 11.17       | 0311696                         | 20.48       |
| 5/16"      | 0.3125"   | 5.125"      | 6.375"        | 7005704                    | 11.33       | 0311697                         | 18.99       |
| 21/64"     | 0.328125" | 5.25"       | 6.5"          | 7005705                    | 12.57       | 0311698                         | 20.77       |
| 11/32"     | 0.34375"  | 5.25"       | 6.5"          | 7005706                    | 12.56       | 0311699                         | 20.48       |
| 23/64"     | 0.359375" | 5.375"      | 6.75"         | 7005707                    | 14.72       | 0311700                         | 27.76       |
| 3/8"       | 0.375"    | 5.375"      | 6.75"         | 7005708                    | 14.92       | 0311701                         | 27.76       |
| 25/64"     | 0.390625" | 5.625"      | 7"            | 7005709                    | 16.58       | 0311702                         | 34.22       |
| 13/32"     | 0.40625"  | 5.625"      | 7"            | 7005710                    | 17.00       | 0311703                         | 32.95       |
| 27/64"     | 0.421875" | 5.6875"     | 7.25"         | 7005711                    | 17.88       | 0311704                         | 34.87       |
| 7/16"      | 0.4375"   | 5.6875"     | 7.25"         | 7005712                    | 18.43       | 0311705                         | 35.27       |
| 29/64"     | 0.453125" | 5.75"       | 7.5"          | 7005713                    | 20.19       | 0311706                         | 36.79       |
| 15/32"     | 0.46875"  | 5.75"       | 7.5"          | 7005714                    | 21.29       | 0311707                         | 38.35       |
| 31/64"     | 0.484375" | 5.75"       | 7.75"         | 7005715                    | 22.16       | 0311708                         | 39.91       |
| 1/2"       | 0.5"      | 5.75"       | 7.75"         | 7005716                    | 22.48       | 0311709                         | 39.58       |
| 33/64"     | 0.515625" | 6"          | 8"            | 7005717                    | 29.10       |                                 |             |
| 17/32"     | 0.53125"  | 6"          | 8"            | 7005718                    | 28.87       |                                 |             |
| 35/64"     | 0.546875" | 6.25"       | 8.25"         | 7005719                    | 32.47       |                                 |             |
| 9/16"      | 0.5625"   | 6.25"       | 8.25"         | 7005720                    | 29.98       |                                 |             |
| 37/64"     | 0.578125" | 6.5"        | 8.75"         | 7005721                    | 34.53       |                                 |             |
| 19/32"     | 0.59375"  | 6.5"        | 8.75"         | 7005722                    | 35.01       |                                 |             |
| 39/64"     | 0.609375" | 6.5"        | 8.75"         | 7005723                    | 35.81       |                                 |             |
| 5/8"       | 0.625"    | 6.5"        | 8.75"         | 7005724                    | 35.42       |                                 |             |



# DRILL DRIFTS, SPADE BITS

## Drill Extensions

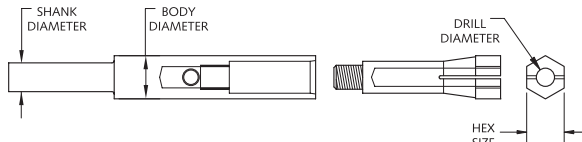
Cutting Tools



### Collet Type Drill Extension System

#### Drill Extension System

- 4" & 9" extensions use collets
- Accommodates 1/16" thru 5/16" drills
- Slim profile gets into places that other collet type extension cannot accommodate



| Part No. | Description | Body Dia. | Shank Length | Price Dia. | /Each   |
|----------|-------------|-----------|--------------|------------|---------|
| 7013775  | Series 1    | 5/16"     | 4"           | 1/4"       | \$14.07 |
| 7013776  | Series 2    | 7/16"     | 4"           | 1/4"       | 18.30   |
| 7013777  | Series 3    | 9/16"     | 4"           | 3/8"       | 24.02   |
| 7013778  | Series 1    | 5/16"     | 9"           | 1/4"       | 14.29   |
| 7013779  | Series 2    | 7/16"     | 9"           | 1/4"       | 18.78   |
| 7013780  | Series 3    | 9/16"     | 9"           | 3/8"       | 24.82   |

### Collets for Drill Extension System

| Part No. | Description | Drill Hex Size | Price Size | /Each  |
|----------|-------------|----------------|------------|--------|
| 7013781  | Series 1    | 1/4"           | 1/16"      | \$9.47 |
| 7013782  | Series 1    | 1/4"           | 5/64"      | 9.47   |
| 7013783  | Series 1    | 1/4"           | #43        | 9.47   |
| 7013784  | Series 1    | 1/4"           | 3/32"      | 9.47   |
| 7013785  | Series 1    | 1/4"           | #40        | 9.47   |
| 7013786  | Series 1    | 1/4"           | 7/64"      | 9.47   |
| 7013787  | Series 1    | 1/4"           | 1/8"       | 9.47   |
| 7013788  | Series 1    | 1/4"           | #30        | 9.47   |
| 7013789  | Series 1    | 1/4"           | 9/64"      | 9.47   |
| 7013790  | Series 1    | 1/4"           | 5/32"      | 9.47   |
| 7013791  | Series 1    | 1/4"           | #21        | 9.47   |
| 7013792  | Series 2    | 3/8"           | 11/64"     | 11.48  |
| 7013793  | Series 2    | 3/8"           | 3/16"      | 11.48  |
| 7013794  | Series 2    | 3/8"           | #11        | 11.48  |
| 7013795  | Series 2    | 3/8"           | #10        | 11.48  |
| 7013796  | Series 2    | 3/8"           | 13/64"     | 11.48  |
| 7013797  | Series 2    | 3/8"           | 7/32"      | 11.48  |
| 7013798  | Series 2    | 3/8"           | 15/64"     | 11.48  |
| 7013799  | Series 2    | 3/8"           | 1/4"       | 11.48  |
| 7013800  | Series 3    | 7/16"          | 1/4"       | 21.69  |
| 7013801  | Series 3    | 7/16"          | 17/64"     | 21.69  |
| 7013802  | Series 3    | 7/16"          | 9/32"      | 21.69  |
| 7013803  | Series 3    | 7/16"          | 19/64"     | 21.69  |
| 7013804  | Series 3    | 7/16"          | 5/16"      | 21.69  |

### Miniature Drill Extensions

- 1/8" & 3/16" diameter extensions
- #80 drill size thru 3/16"



| Part No.                    | Shank Dia. | Drill Size | Price /Each |
|-----------------------------|------------|------------|-------------|
| <b>1/8" Diameter Shank</b>  |            |            |             |
| 7013805                     | 1/8"       | #80        | \$36.20     |
| 7013806                     | 1/8"       | #79        | 36.20       |
| 7013807                     | 1/8"       | 1/64"      | 36.20       |
| 7013808                     | 1/8"       | #78        | 36.20       |
| 7013809                     | 1/8"       | #77        | 36.20       |
| 7013810                     | 1/8"       | #76        | 36.20       |
| 7013811                     | 1/8"       | #75        | 36.20       |
| 7013812                     | 1/8"       | #74        | 36.20       |
| 7013813                     | 1/8"       | #73        | 36.20       |
| 7013814                     | 1/8"       | #72        | 36.20       |
| 7013815                     | 1/8"       | #71        | 36.20       |
| 7013816                     | 1/8"       | #70        | 36.20       |
| 7013817                     | 1/8"       | #69        | 36.20       |
| 7013818                     | 1/8"       | #68        | 36.20       |
| 7013819                     | 1/8"       | 1/32"      | 36.20       |
| 7013820                     | 1/8"       | #67        | 36.20       |
| 7013821                     | 1/8"       | #66        | 36.20       |
| 7013822                     | 1/8"       | #65        | 36.20       |
| 7013823                     | 1/8"       | #64        | 36.20       |
| 7013824                     | 1/8"       | #63        | 36.20       |
| 7013825                     | 1/8"       | #62        | 36.20       |
| 7013826                     | 1/8"       | #61        | 36.20       |
| 7013827                     | 1/8"       | #60        | 36.20       |
| 7013828                     | 1/8"       | #59        | 36.20       |
| 7013829                     | 1/8"       | #58        | 36.20       |
| 7013830                     | 1/8"       | #57        | 36.20       |
| 7013831                     | 1/8"       | #56        | 36.20       |
| <b>3/16" Diameter Shank</b> |            |            |             |
| 7013832                     | 3/16"      | #80        | \$37.87     |
| 7013833                     | 3/16"      | #79        | 37.87       |
| 7013834                     | 3/16"      | 1/64"      | 37.87       |
| 7013835                     | 3/16"      | #78        | 37.87       |
| 7013836                     | 3/16"      | #77        | 37.87       |
| 7013837                     | 3/16"      | #76        | 37.87       |
| 7013838                     | 3/16"      | #75        | 37.87       |
| 7013839                     | 3/16"      | #74        | 37.87       |
| 7013840                     | 3/16"      | #73        | 37.87       |
| 7013841                     | 3/16"      | #72        | 37.87       |
| 7013842                     | 3/16"      | #71        | 37.87       |
| 7013843                     | 3/16"      | #70        | 37.87       |
| 7013844                     | 3/16"      | #69        | 37.87       |
| 7013845                     | 3/16"      | #68        | 37.87       |
| 7013846                     | 3/16"      | 1/32"      | 37.87       |
| 7013847                     | 3/16"      | #67        | 37.87       |
| 7013848                     | 3/16"      | #66        | 37.87       |
| 7013849                     | 3/16"      | #65        | 37.87       |
| 7013850                     | 3/16"      | #64        | 37.87       |
| 7013851                     | 3/16"      | #63        | 37.87       |
| 7013852                     | 3/16"      | #62        | 37.87       |
| 7013853                     | 3/16"      | #61        | 37.87       |
| 7013854                     | 3/16"      | #60        | 37.87       |
| 7013855                     | 3/16"      | #59        | 37.87       |
| 7013856                     | 3/16"      | #58        | 37.87       |
| 7013857                     | 3/16"      | #57        | 37.87       |
| 7013858                     | 3/16"      | #56        | 37.87       |
| 7013859                     | 3/16"      | 3/64"      | 37.87       |
| 7013860                     | 3/16"      | #55        | 37.87       |
| 7013861                     | 3/16"      | #54        | 37.87       |
| 7013862                     | 3/16"      | #53        | 37.87       |
| 7013863                     | 3/16"      | 1/16"      | 37.87       |

## Drill Drifts



### Drill Drifts Hardened & Zinc Plated



| Part No. | Drill   | Drill Size | Price /Each |
|----------|---|------------|-------------|
| 7001180  | Drift, Heavy Duty, Zinc Plated, Hardened              | 1          | \$1.64:     |
| 7001181  | Drift, Heavy Duty, Zinc Plated, Hardened              | 2          | 1.70:       |
| 7001182  | Drift, Heavy Duty, Zinc Plated, Hardened              | 3          | 2.02:       |
| 7001183  | Drift, Heavy Duty, Zinc Plated, Hardened              | 4          | 2.69:       |
| 7001184  | Drift, Heavy Duty, Zinc Plated, Hardened, 4 Piece Set | 37990      | 7.25:       |

## Spade Bits



### Spade Blades Series 0: .511" - .690"

- For faster penetration rates
- TiN (titanium nitride) coating gives longer tool life
- For replacing standard drill bits resulting in 2-3 times higher penetration rates and up to 4-5 times wearlife
- Provide straighter and more consistent holes with superior surface finishes than HSS twist drills



| Part No. | Size  | Decimal | Price /Each |
|----------|-------|---------|-------------|
| 7002114  | 33/64 | .5156   | \$33.42     |
| 7002115  | 17/32 | .5313   | 33.42       |
| 7002116  | 35/64 | .5469   | 33.42       |
| 7002118  | 9/16  | .5625   | 33.42       |
| 7002120  | 37/64 | .5781   | 33.42       |
| 7002122  | 19/32 | .5938   | 33.42       |
| 7002123  | 39/64 | .6094   | 33.42       |
| 7002124  | 5/8   | .6250   | 33.42       |
| 7002126  | 41/64 | .6406   | 33.42       |
| 7002128  | 21/32 | .6563   | 33.42       |
| 7002131  | 43/64 | .6719   | 33.42       |
| 7002132  | 11/16 | .6875   | 33.42       |

### Series 1: .691" - .960"

- TiN (titanium nitride) coating gives longer tool life



| Part No. | Size  | Decimal | Price /Each |
|----------|-------|---------|-------------|
| 7002133  | 45/64 | .7031   | \$37.65     |
| 7002135  | 23/32 | .7188   | 37.65       |
| 7002137  | 47/64 | .7344   | 37.65       |
| 7002139  | 3/4   | .7559   | 37.65       |
| 7002141  | 49/64 | .7656   | 37.65       |
| 7002142  | 25/32 | .7813   | 37.65       |
| 7002144  | 51/64 | .7969   | 37.65       |
| 7002146  | 13/16 | .8125   | 37.65       |
| 7002148  | 53/64 | .8281   | 37.65       |
| 7002149  | 27/32 | .8438   | 37.65       |
| 7002150  | 55/64 | .8594   | 37.65       |
| 7002152  | 7/8   | .8750   | 37.65       |
| 7002153  | 57/64 | .8906   | 37.65       |
| 7002154  | 29/32 | .9063   | 37.65       |
| 7002155  | 59/64 | .9219   | 37.65       |
| 7002156  | 15/16 | .9375   | 37.65       |
| 7002158  | 61/64 | .9531   | 37.65       |

### Series 2: .961" - 1.380"

- TiN (titanium nitride) coating gives longer tool life



| Part No. | Size    | Decimal | Price /Each |
|----------|---------|---------|-------------|
| 7002160  | 31/32   | .9688   | \$44.15     |
| 7002162  | 1In     | 1.0000  | 44.15       |
| 7002163  | 1-1/64  | 1.0156  | 44.15       |
| 7002165  | 1-1/32  | 1.0313  | 44.15       |
| 7002166  | 1-3/64  | 1.0469  | 44.15       |
| 7002167  | 1-1/16  | 1.0625  | 44.15       |
| 7002168  | 1-5/64  | 1.0781  | 44.15       |
| 7002169  | 1-3/32  | 1.0938  | 44.15       |
| 7002171  | 1-7/64  | 1.1094  | 44.15       |
| 7002172  | 1-1/8   | 1.1250  | 44.15       |
| 7002174  | 1-9/64  | 1.1406  | 44.15       |
| 7002176  | 1-5/32  | 1.1563  | 44.15       |
| 7002179  | 1-3/16  | 1.1875  | 44.15       |
| 7002181  | 1-13/64 | 1.2031  | 44.15       |
| 7002182  | 1-7/32  | 1.2188  | 44.15       |
| 7002184  | 1-15/64 | 1.2344  | 44.15       |
| 7002185  | 1-1/4   | 1.2500  | 44.15       |
| 7002187  | 1-17/64 | 1.2656  | 44.15       |
| 7002188  | 1-9/32  | 1.2813  | 44.15       |
| 7002190  | 1-5/16  | 1.3125  | 44.15       |
| 7002191  | 1-21/64 | 1.3281  | 44.15       |
| 7002193  | 1-11/32 | 1.3438  | 44.15       |
| 7002194  | 1-23/64 | 1.3594  | 44.15       |
| 7002195  | 1-3/8   | 1.3750  | 44.15       |

### HOLDERS For R-8 (Bridgeport) Applications

- No adapter required
- Helical flutes assist in chip escalation



| Part No. | Description        | Size Range   | Price    |
|----------|--------------------|--------------|----------|
| 7002196  | Series 0 R8 Holder | .5118-.6875  | \$320.78 |
| 7002197  | Series 1 R8 Holder | .7031-.9600  | 336.71   |
| 7002198  | Series 2 R8 Holder | .9688-1.3780 | 356.67   |

### Coolant Gland

Coolant glands or collars feed coolant to the cutting edges of the drill to increase drilling efficiency and extend tool life

| Part No. | Description                | Price    |
|----------|----------------------------|----------|
| 7002199  | Series 0 Coolant Gland     | \$225.54 |
| 7002200  | Series 1 & 2 Coolant Gland | 247.50   |

# CARBIDE DRILL BITS

## Carbide Twist Drills



**DRILL MONSTER®**

### Solid Carbide Micrograin Twist Drills

- Recommended for drilling cast iron, aluminum, bronze and magnesium alloys and other abrasive, non-ferrous materials
- Solid carbide offers extra rigidity, withstands continuous abrasion and high drilling temperatures



### Fractional - Jobber Drill - 118° Point

| Size  | Part No. | Flute Lgth. | Overall Lgth. | Price /Each |
|-------|----------|-------------|---------------|-------------|
| 1/32  | 0359355  | 1/2         | 1-1/2         | \$6.91      |
| 3/64  | 0306237  | 3/4         | 1-1/2         | 8.31        |
| 1/16  | 0306238  | 3/4         | 1-1/2         | 8.57        |
| 5/64  | 0306239  | 7/8         | 1-3/4         | 9.01        |
| 3/32  | 0306240  | 1           | 2             | 9.71        |
| 7/64  | 0306241  | 1-1/4       | 2-1/4         | 10.98       |
| 1/8   | 0306242  | 1-1/4       | 2-1/4         | 12.27       |
| 9/64  | 0306243  | 1-3/8       | 2-1/2         | 13.56       |
| 5/32  | 0306244  | 1-3/8       | 2-1/2         | 14.85       |
| 11/64 | 0306245  | 1-5/8       | 2-3/4         | 16.34       |
| 3/16  | 0306246  | 1-5/8       | 2-3/4         | 17.84       |
| 13/64 | 0306247  | 1-3/4       | 3             | 19.55       |
| 7/32  | 0306248  | 1-3/4       | 3             | 21.70       |
| 15/64 | 0306249  | 2           | 3-1/4         | 23.84       |
| 1/4   | 0306250  | 2           | 3-1/4         | 25.98       |
| 17/64 | 0306251  | 2-1/4       | 3-1/2         | 28.12       |
| 9/32  | 0306252  | 2-1/4       | 3-1/2         | 30.53       |
| 19/64 | 0306253  | 2-3/8       | 3-3/4         | 32.94       |
| 5/16  | 0306254  | 2-3/8       | 3-3/4         | 35.35       |
| 21/64 | 0306255  | 2-1/2       | 4             | 37.76       |
| 11/32 | 0306256  | 2-1/2       | 4             | 41.25       |
| 23/64 | 0306257  | 2-3/4       | 4-1/4         | 45.53       |
| 3/8   | 0306258  | 2-3/4       | 4-1/4         | 49.82       |
| 25/64 | 0306259  | 2-7/8       | 4-1/2         | 55.17       |
| 13/32 | 0306260  | 2-7/8       | 4-1/2         | 60.53       |
| 27/64 | 0306261  | 2-7/8       | 4-1/2         | 65.88       |
| 7/16  | 0306262  | 2-7/8       | 4-1/2         | 71.24       |
| 29/64 | 0306263  | 3           | 4-3/4         | 76.60       |
| 15/32 | 0306264  | 3           | 4-3/4         | 81.95       |
| 31/64 | 0306265  | 3           | 4-3/4         | 88.38       |
| 1/2   | 0306266  | 3           | 4-3/4         | 95.34       |

### Wire Twist Drill - 118° Point

| Size | Part No. | Flute Lgth. | Overall Lgth. | Price /Each |
|------|----------|-------------|---------------|-------------|
| 1    | 0306293  | 1-3/4       | 3             | \$20.63     |
| 2    | 0306294  | 1-3/4       | 3             | 19.82       |
| 3    | 0306295  | 1-3/4       | 3             | 19.13       |
| 4    | 0306296  | 1-3/4       | 3             | 18.54       |
| 5    | 0306297  | 1-3/4       | 3             | 18.11       |
| 6    | 0306298  | 1-3/4       | 3             | 18.11       |
| 7    | 0306299  | 1-3/4       | 3             | 16.34       |
| 8    | 0306300  | 1-3/4       | 3             | 17.41       |
| 9    | 0306301  | 1-3/4       | 3             | 17.21       |
| 10   | 0306302  | 1-5/8       | 2-3/4         | 16.99       |

| Size | Part No. | Flute Lgth. | Overall Lgth. | Price /Each |
|------|----------|-------------|---------------|-------------|
| 11   | 0306303  | 1-5/8       | 2-3/4         | \$16.77     |
| 12   | 0306304  | 1-5/8       | 2-3/4         | 16.77       |
| 13   | 0306305  | 1-5/8       | 2-3/4         | 16.45       |
| 14   | 0306306  | 1-5/8       | 2-3/4         | 16.13       |
| 15   | 0306307  | 1-5/8       | 2-3/4         | 15.81       |
| 16   | 0306308  | 1-5/8       | 2-3/4         | 15.81       |
| 17   | 0306309  | 1-5/8       | 2-3/4         | 15.06       |
| 18   | 0306310  | 1-5/8       | 2-3/4         | 14.20       |
| 19   | 0306311  | 1-5/8       | 2-3/4         | 13.88       |
| 20   | 0306312  | 1-3/8       | 2-1/2         | 13.34       |
| 21   | 0306313  | 1-3/8       | 2-1/2         | 13.34       |
| 22   | 0306314  | 1-3/8       | 2-1/2         | 12.76       |
| 23   | 0306315  | 1-3/8       | 2-1/2         | 12.76       |
| 24   | 0306316  | 1-3/8       | 2-1/2         | 12.39       |
| 25   | 0306317  | 1-3/8       | 2-1/2         | 12.06       |
| 26   | 0306318  | 1-3/8       | 2-1/2         | 12.06       |
| 27   | 0306319  | 1-3/8       | 2-1/2         | 11.74       |
| 28   | 0306320  | 1-3/8       | 2-1/2         | 11.42       |
| 29   | 0306321  | 1-3/8       | 2-1/2         | 11.42       |
| 30   | 0306322  | 1-1/4       | 2-1/4         | 10.67       |
| 31   | 0306323  | 1-1/4       | 2-1/4         | 10.03       |
| 32   | 0306324  | 1-1/4       | 2-1/4         | 10.13       |
| 33   | 0306325  | 1-1/4       | 2-1/4         | 9.91        |
| 34   | 0306326  | 1-1/4       | 2-1/4         | 9.59        |
| 35   | 0306327  | 1-1/4       | 2-1/4         | 9.59        |
| 36   | 0306328  | 1-1/4       | 2-1/4         | 9.59        |
| 37   | 0306329  | 1-1/4       | 2-1/4         | 9.27        |
| 38   | 0306330  | 1-1/4       | 2-1/4         | 9.06        |
| 40   | 0306332  | 1           | 2             | 8.84        |
| 41   | 0306333  | 1           | 2             | 8.74        |
| 39   | 0306331  | 1-1/4       | 2-1/4         | 9.06        |
| 42   | 0306334  | 1           | 2             | 8.52        |
| 43   | 0306335  | 1           | 2             | 8.42        |
| 44   | 0306336  | 1           | 2             | 8.20        |
| 45   | 0306337  | 7/8         | 1-3/4         | 7.88        |
| 46   | 0306338  | 7/8         | 1-3/4         | 7.88        |
| 47   | 0306339  | 7/8         | 1-3/4         | 7.72        |
| 48   | 0306340  | 7/8         | 1-3/4         | 7.72        |
| 49   | 0306341  | 7/8         | 1-3/4         | 7.57        |
| 50   | 0306342  | 7/8         | 1-3/4         | 7.57        |
| 51   | 0306343  | 3/4         | 1-1/2         | 7.40        |
| 52   | 0306344  | 3/4         | 1-1/2         | 7.30        |
| 53   | 0306345  | 3/4         | 1-1/2         | 7.45        |
| 54   | 0306346  | 3/4         | 1-1/2         | 7.45        |
| 55   | 0306347  | 3/4         | 1-1/2         | 7.45        |
| 56   | 0306348  | 3/4         | 1-1/2         | 7.45        |
| 57   | 0360967  | 3/4         | 1-1/2         | 6.91        |
| 58   | 0360968  | 3/4         | 1-1/2         | 6.91        |
| 59   | 0360969  | 3/4         | 1-1/2         | 6.91        |
| 60   | 0360970  | 3/4         | 1-1/2         | 6.91        |
| 61   | 0360971  | 5/8         | 1-1/2         | 6.91        |
| 62   | 0360972  | 5/8         | 8             | 6.91        |
| 63   | 0360973  | 5/8         | 1-1/2         | 6.91        |
| 64   | 0360974  | 5/8         | 1-1/2         | 6.91        |
| 65   | 0360975  | 5/8         | 1-1/2         | 6.91        |
| 66   | 0360976  | 1/2         | 1-1/2         | 6.91        |
| 67   | 0360977  | 1/2         | 1-1/2         | 6.91        |
| 68   | 0360978  | 1/2         | 1-1/2         | 6.91        |
| 69   | 0360979  | 1/2         | 1-1/2         | 10.46       |
| 70   | 0360980  | 1/2         | 1-1/2         | 10.46       |
| 71   | 0360981  | 5/16        | 1             | 10.46       |
| 72   | 0360982  | 5/16        | 1             | 10.46       |
| 73   | 0360983  | 1/4         | 7/8           | 11.73       |
| 74   | 0360984  | 1/4         | 7/8           | 11.73       |
| 75   | 0360985  | 1/4         | 7/8           | 11.73       |
| 76   | 0360986  | 1/4         | 7/8           | 11.73       |
| 77   | 0360987  | 3/16        | 3/4           | 11.73       |
| 78   | 0360988  | 3/16        | 3/4           | 11.73       |
| 79   | 0360989  | 3/16        | 3/4           | 12.72       |
| 80   | 0360990  | 3/16        | 3/4           | 12.72       |

### Letter - Jobber Drill - 118° Point

| Size | Part No. | Flute Lgth. | Overall Lgth. | Price /Each |
|------|----------|-------------|---------------|-------------|
| A    | 0306267  | 2           | 3-1/4         | \$21.38     |
| B    | 0306268  | 2           | 3-1/4         | 22.35       |
| C    | 0306269  | 2           | 3-1/4         | 22.56       |
| D    | 0306270  | 2           | 3-1/4         | 23.04       |
| E    | 0306271  | 2           | 3-1/4         | 22.66       |
| F    | 0306272  | 2           | 3-1/4         | 25.02       |
| G    | 0306273  | 2-1/4       | 3-1/2         | 26.63       |
| H    | 0306274  | 2-1/4       | 3-1/2         | 27.11       |
| I    | 0306275  | 2-1/4       | 3-1/2         | 27.75       |
| J    | 0306276  | 2-1/4       | 3-1/2         | 28.39       |
| K    | 0306277  | 2-1/4       | 3-1/2         | 28.66       |
| L    | 0306278  | 2-1/4       | 3-1/2         | 29.90       |
| M    | 0306279  | 2-3/8       | 3-3/4         | 30.70       |
| N    | 0306280  | 2-3/8       | 3-3/4         | 32.74       |
| O    | 0306281  | 2-3/8       | 3-3/4         | 34.35       |
| P    | 0306282  | 2-3/8       | 3-3/4         | 35.89       |
| Q    | 0306283  | 2-1/2       | 4             | 37.23       |
| R    | 0306284  | 2-1/2       | 4             | 38.84       |
| S    | 0306285  | 2-1/2       | 4             | 41.68       |
| T    | 0306286  | 2-3/4       | 4-1/4         | 42.80       |
| U    | 0306287  | 2-3/4       | 4-1/4         | 44.94       |
| V    | 0306288  | 2-3/4       | 4-1/4         | 49.82       |
| W    | 0306289  | 2-7/8       | 4-1/2         | 53.51       |
| X    | 0306290  | 2-7/8       | 4-1/2         | 57.75       |
| Y    | 0306291  | 2-7/8       | 4-1/2         | 59.89       |
| Z    | 0306292  | 2-7/8       | 4-1/2         | 65.41       |

## Straight Flute Drills

### Solid Carbide Micrograin Straight Flute Drills

#### Hi-Roc Drill - 140° Point

Designed to drill hardened steels in the 42-65 Rockwell "C" range

- Both a production drill and a salvage or reclaim tool
- Reamer type finishes are easily produced



#### Fractional Sizes

| Size   | Decimal   | Flute Lgth. | Overall Lgth. | Hi-Roc Drill 140° Point |             | CL Bright 140° Point |             |
|--------|-----------|-------------|---------------|-------------------------|-------------|----------------------|-------------|
|        |           |             |               | Part No.                | Price /Each | Part No.             | Price /Each |
| 1/32"  | 0.03125"  | 0.1875"     | 1.5"          | 0307484                 | \$19.71     |                      |             |
| 3/64"  | 0.046875" | 0.25"       | 1.5"          | 0307485                 | 17.36       | 0357192              | \$8.43      |
| 1/16"  | 0.0625"   | 0.3125"     | 1.5"          | 0307486                 | 17.32       | 0357193              | 8.23        |
| 5/64"  | 0.078125" | 0.375"      | 1.5"          | 0307501                 | 17.35       | 0357194              | 8.43        |
| 3/32"  | 0.09375"  | 0.5"        | 1.5"          | 0307487                 | 17.33       | 0357195              | 8.23        |
| 7/64"  | 0.109375" | 0.625"      | 1.5"          | 0307488                 | 20.33       | 0357196              | 9.65        |
| 1/8"   | 0.125"    | 0.625"      | 1.5"          | 0307489                 | 20.89       | 0357197              | 8.49        |
| 9/64"  | 0.140625" | 0.625"      | 2"            | 0307490                 | 22.44       | 0357198              | 10.92       |
| 5/32"  | 0.15625"  | 0.625"      | 2"            | 0307491                 | 26.16       | 0357199              | 11.41       |
| 11/64" | 0.171875" | 0.625"      | 2"            | 0307492                 | 27.96       | 0357200              | 13.53       |
| 3/16"  | 0.1875"   | 0.625"      | 2"            | 0307493                 | 30.29       | 0357201              | 12.89       |
| 13/64" | 0.203125" | 0.75"       | 2"            | 0307494                 | 32.38       | 0357202              | 15.87       |
| 7/32"  | 0.21875"  | 0.75"       | 2"            | 0307495                 | 34.03       | 0357203              | 16.22       |
| 15/64" | 0.234375" | 0.75"       | 2"            | 0307496                 | 35.45       | 0357204              | 19.92       |
| 1/4"-E | 0.25"     | 0.75"       | 2"            | 0307497                 | 42.30       | 0357205              | 17.30       |
| 17/64" | 0.265625" | 0.75"       | 2.5"          | 0307498                 | 47.47       | 0357206              | 22.76       |
| 9/32"  | 0.28125"  | 0.75"       | 2.5"          | 0307499                 | 50.41       | 0357207              | 22.69       |
| 19/64" | 0.296875" | 0.75"       | 2.5"          | 0307563                 | 52.99       | 0357208              | 24.45       |
| 5/16"  | 0.3125"   | 0.75"       | 2.5"          | 0307565                 | 55.07       | 0357209              | 22.61       |
| 21/64" | 0.328125" | 1"          | 2.5"          | 0307566                 | 62.10       | 0357210              | 26.52       |
| 11/32" | 0.34375"  | 1"          | 2.5"          | 0307567                 | 64.38       | 0357211              | 28.79       |
| 23/64" | 0.359375" | 1"          | 2.5"          | 0307568                 | 66.45       | 0357212              | 32.18       |
| 3/8"   | 0.375"    | 1"          | 2.5"          | 0307569                 | 73.73       | 0357213              | 32.40       |
| 25/64" | 0.390625" | 1"          | 2.75"         | 0307570                 | 87.98       | 0357214              | 39.62       |
| 13/32" | 0.40625"  | 1"          | 2.75"         | 0307571                 | 96.44       | 0357215              | 43.02       |
| 27/64" | 0.421875" | 1"          | 2.75"         | 0307572                 | 106.88      | 0357216              | 48.77       |
| 7/16"  | 0.4375"   | 1"          | 2.75"         | 0307573                 | 111.72      | 0357217              | 45.86       |
| 29/64" | 0.453125" | 1"          | 3"            | 0307574                 | 127.20      | 0357218              | 52.03       |
| 15/32" | 0.46875"  | 1"          | 3"            | 0307575                 | 132.38      | 0357219              | 50.54       |
| 31/64" | 0.484375" | 1"          | 3"            | 0307576                 | 136.31      | 0357220              | 52.03       |
| 1/2"   | 0.5"      | 1"          | 3"            | 0307577                 | 132.71      | 0357221              | 49.18       |
| 5/8"   | 0.625"    | 1.25"       | 3.5"          | 0307578                 | 166.43      |                      |             |
| 5/8"   | .6250     | 1-1/4"      | 3.5"          | 0307579                 | 186.67      |                      |             |
| 3/4"   | 0.75"     | 1.5"        | 4"            | 0307580                 | 343.77      |                      |             |

#### Wire Sizes

| Size | Decimal | Flute Lgth. | Overall Lgth. | Hi-Roc Drill 140° Point |             | CL Bright 140° Point |             |
|------|---------|-------------|---------------|-------------------------|-------------|----------------------|-------------|
|      |         |             |               | Part No.                | Price /Each | Part No.             | Price /Each |
| #1   | 0.228"  | 0.75"       | 2"            | 0320499                 | \$12.65     | 0357222              | \$18.72     |
| #2   | 0.221"  | 0.75"       | 2"            | 0320500                 | 12.65       | 0357223              | 18.72       |
| #3   | 0.213"  | 0.75"       | 2"            | 0320501                 | 12.65       | 0357224              | 17.51       |
| #4   | 0.209"  | 0.75"       | 2"            | 0320502                 | 23.95       | 0357225              | 17.51       |
| #5   | 0.2055" | 0.75"       | 2"            | 0320503                 | 11.58       | 0357226              | 17.51       |
| #6   | 0.204"  | 0.75"       | 2"            | 0320504                 | 12.65       | 0357227              | 17.51       |
| #7   | 0.201"  | 0.75"       | 2"            | 0320505                 | 12.65       | 0357228              | 16.59       |
| #8   | 0.199"  | 0.75"       | 2"            | 0320506                 | 12.65       | 0357229              | 16.59       |
| #9   | 0.196"  | 0.75"       | 2"            | 0320507                 | 12.65       | 0357230              | 16.10       |
| #10  | 0.1935" | 0.625"      | 2"            | 0320508                 | 12.65       | 0357231              | 16.10       |
| #11  | 0.191"  | 0.625"      | 2"            | 0320509                 | 12.65       | 0357232              | 15.17       |
| #12  | 0.189"  | 0.625"      | 2"            | 0320510                 | —           | 0357233              | 15.17       |
| #13  | 0.185"  | 0.625"      | 2"            | 0320511                 | 5.63        | 0357234              | 15.23       |
| #14  | 0.182"  | 0.625"      | 2"            | 0320512                 | 28.07       | 0357235              | 15.23       |
| #15  | 0.18"   | 0.625"      | 2"            | 0320513                 | 11.52       | 0357236              | 14.46       |
| #16  | 0.177"  | 0.625"      | 2"            | 0320514                 | 10.78       | 0357237              | 14.46       |
| #17  | 0.173"  | 0.625"      | 2"            | 0320515                 | 10.24       | 0357238              | 14.46       |
| #18  | 0.1695" | 0.625"      | 2"            | 0320516                 | —           | 0357239              | 14.18       |
| #19  | 0.166"  | 0.625"      | 2"            | 0320517                 | 12.65       | 0357240              | 14.18       |
| #20  | 0.161"  | 0.625"      | 2"            | 0320518                 | —           | 0357241              | 13.62       |
| #21  | 0.159"  | 0.625"      | 2"            | 0320519                 | —           | 0357242              | 13.61       |
| #22  | 0.157"  | 0.625"      | 2"            | 0320520                 | 18.16       | 0357243              | 13.33       |
| #23  | 0.154"  | 0.625"      | 2"            | 0320521                 | 13.51       | 0357244              | 12.34       |
| #24  | 0.152"  | 0.625"      | 2"            | 0320522                 | —           | 0357245              | 12.34       |
| #25  | 0.1495" | 0.625"      | 2"            | 0320523                 | —           | 0357246              | 12.34       |
| #26  | 0.147"  | 0.625"      | 2"            | 0320524                 | 12.65       | 0357247              | 12.34       |
| #27  | 0.144"  | 0.625"      | 2"            | 0320525                 | 12.65       | 0357248              | 11.69       |
| #28  | 0.1405" | 0.625"      | 2"            | 0320526                 | —           | 0357249              | 11.41       |
| #29  | 0.136"  | 0.625"      | 2"            | 0320527                 | 3.17        | 0357250              | 11.40       |
| #30  | 0.1285" | 0.625"      | 2"            | 0320528                 | 4.45        | 0357251              | 11.41       |
| #31  | 0.12"   | 0.625"      | 1.5"          | 0320529                 | 3.17        | 0357252              | 10.49       |
| #32  | 0.116"  | 0.625"      | 1.5"          | 0320530                 | 4.45        | 0357253              | 10.49       |
| #33  | 0.113"  | 0.625"      | 1.5"          | 0320531                 | 3.49        | 0357254              | 10.50       |
| #34  | 0.111"  | 0.625"      | 1.5"          | 0320532                 | 4.89        | 0357255              | 10.49       |
| #35  | 0.11"   | 0.625"      | 1.5"          | 0320533                 | 3.49        | 0357256              | 10.50       |
| #36  | 0.1065" | 0.625"      | 1.5"          | 0320534                 | 4.89        | 0357257              | 10.07       |
| #37  | 0.104"  | 0.625"      | 1.5"          | 0320535                 | 3.49        | 0357258              | 10.07       |
| #38  | 0.1015" | 0.5"        | 1.5"          | 0320536                 | 4.89        | 0357259              | 10.07       |
| #39  | 0.0995" | 0.5"        | 1.5"          | 0320537                 | 6.60        | 0357260              | 10.07       |
| #40  | 0.098"  | 0.5"        | 1.5"          | 0320538                 | 9.27        | 0357261              | 10.07       |
| #41  | 0.096"  | 0.5"        | 1.5"          | 0320539                 | 6.60        | 0357262              | 10.06       |
| #42  | 0.0935" | 0.5"        | 1.5"          | 0320540                 | 9.27        | 0357263              | 8.86        |
| #43  | 0.089"  | 0.5"        | 1.5"          | 0320541                 | 6.60        | 0357264              | 8.86        |
| #44  | 0.086"  | 0.375"      | 1.5"          | 0320542                 | 9.27        | 0357265              | 8.87        |
| #45  | 0.082"  | 0.375"      | 1.5"          | 0320543                 | 2.63        | 0357266              | 8.86        |
| #46  | 0.081"  | 0.375"      | 1.5"          | 0320544                 | 3.75        | 0357267              | 8.86        |
| #47  | 0.0785" | 0.375"      | 1.5"          | 0320545                 | 2.63        | 0357268              | 8.86        |
| #48  | 0.076"  | 0.375"      | 1.5"          | 0320546                 | 3.75        | 0357269              | 8.86        |
| #49  | 0.073"  | 0.375"      | 1.5"          | 0320547                 | 2.90        | 0357270              | 8.86        |
| #50  | 0.07"   | 0.375"      | 1.5"          | 0320548                 | 4.14        | 0357271              | 8.86        |
| #51  | 0.067"  | 0.375"      | 1.5"          | 0320549                 | 2.90        | 0357272              | 7.79        |
| #52  | 0.0635" | 0.3125"     | 1.5"          | 0320550                 | 4.14        | 0357273              | 7.79        |
| #53  | 0.0595" | 0.3125"     | 1.5"          | 0320551                 | 2.90        | 0357274              | 7.65        |
| #54  | 0.055"  | 0.3125"     | 1.5"          | 0320552                 | 4.14        | 0357275              | 7.65        |
| #55  | 0.052"  | 0.3125"     | 1.5"          | 0320553                 | 5.26        | 0357276              | 7.58        |
| #56  | 0.0465" | 0.25"       | 1.5"          | 0320554                 | 7.35        | 0357277              | 7.58        |
| #57  | 0.043"  | 0.25"       | 1.5"          | 0320555                 | 5.26        | 0357278              | 7.58        |
| #58  | 0.042"  | 0.25"       | 1.5"          | 0320556                 | 7.35        | 0357279              | 7.58        |
| #59  | 0.041"  | 0.25"       | 1.5"          | 0320557                 | 5.26        | 0357280              | 7.58        |
| #60  | 0.04"   | 0.25"       | 1.5"          | 0320558                 | 7.35        | 0357281              | 7.58        |
| #61  | 0.039"  | 0.25"       | 1.5"          | 0320559                 | 3.92        |                      |             |
| #62  | 0.038"  | 0.25"       | 1.5"          | 0320560                 | 5.53        |                      |             |
| #63  | 0.037"  | 0.25"       | 1.5"          | 0320561                 | 3.92        |                      |             |
| #64  | 0.036"  | 0.21875"    | 1.5"          | 0320562                 | 5.53        |                      |             |
| #65  | 0.035"  | 0.21875"    | 1.5"          | 0320563                 | 4.24        |                      |             |



# CARBIDE DRILL BITS

## Straight Flute Drills

### Solid Carbide Micrograin Straight Flute Drills - Cont.



| Letter Sizes |         |             |               | Hi-Roc Drill<br>140° Point |             | CL Bright<br>140° Point |             |
|--------------|---------|-------------|---------------|----------------------------|-------------|-------------------------|-------------|
| Size         | Decimal | Flute Lgth. | Overall Lgth. | Part No.                   | Price /Each | Part No.                | Price /Each |
| Ltr A        | 0.234"  | 0.75"       | 2"            | 0320567                    | \$4.24      | 0357282                 | \$21.47     |
| Ltr B        | 0.238"  | 0.75"       | 2"            | 0320568                    | 5.90        | 0357283                 | 22.60       |
| Ltr C        | 0.242"  | 0.75"       | 2"            | 0320569                    | 3.28        | 0357284                 | 22.61       |
| Ltr D        | 0.246"  | 0.75"       | 2"            | 0320570                    | 4.56        | 0357285                 | 22.61       |
| Ltr E        | 0.25"   | 0.75"       | 2"            | 0320571                    | 3.28        |                         |             |
| Ltr F        | 0.257"  | 0.75"       | 2"            | 0320572                    | 4.56        | 0357286                 | 27.65       |
| Ltr G        | 0.261"  | 0.75"       | 2"            | 0320573                    | 3.60        | 0357287                 | 27.65       |
| Ltr H        | 0.266"  | 0.75"       | 2.5"          | 0320574                    | 5.04        | 0357288                 | 28.85       |
| Ltr I        | 0.272"  | 0.75"       | 2.5"          | 0320575                    | 3.60        |                         |             |
| Ltr J        | 0.277"  | 0.75"       | 2.5"          | 0320576                    | 5.04        | 0357290                 | 29.28       |
| Ltr K        | 0.2812" | 0.75"       | 2.5"          | 0320577                    | 3.60        | 0357291                 | 29.28       |
| Ltr L        | 0.29"   | 0.75"       | 2.5"          | 0320578                    | 5.04        | 0357292                 | 29.55       |
| Ltr M        | 0.295"  | 0.75"       | 2.5"          | 0320579                    | 52.94       | 0357293                 | 29.55       |
| Ltr N        | 0.302"  | 0.75"       | 2.5"          | 0320580                    | 54.03       | 0357294                 | 35.51       |
| Ltr O        | 0.316"  | 0.75"       | 2.5"          | 0320581                    | 56.99       | 0357295                 | 37.50       |
| Ltr P        | 0.323"  | 1"          | 2.5"          | 0320582                    | 59.99       | 0357296                 | 37.50       |
| Ltr Q        | 0.332"  | 1"          | 2.5"          | 0320583                    | 62.81       | 0357297                 | 38.56       |
| Ltr R        | 0.339"  | 1"          | 2.5"          | 0320584                    | 64.03       | 0357298                 | 40.40       |
| Ltr S        | 0.348"  | 1"          | 2.5"          | 0320585                    | 65.73       | 0357299                 | 42.38       |
| Ltr T        | 0.358"  | 1"          | 2.5"          | 0320586                    | 66.45       | 0357300                 | 44.51       |
| Ltr U        | 0.368"  | 1"          | 2.5"          | 0320587                    | 67.73       | 0357301                 | 45.50       |
| Ltr V        | 0.377"  | 1"          | 2.5"          | 0320588                    | 71.65       | 0357302                 | 52.94       |
| Ltr W        | 0.386"  | 1"          | 2.75"         | 0320589                    | 73.57       | 0357303                 | 52.94       |
| Ltr X        | 0.397"  | 1"          | 2.75"         | 0320590                    | 89.92       | 0357304                 | 56.06       |
| Ltr Y        | 0.404"  | 1"          | 2.75"         | 0320591                    | 90.08       | 0357305                 | 56.06       |
| Ltr Z        | 0.413"  | 1"          | 2.75"         | 0320592                    | 94.41       | 0357306                 | 60.04       |

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### Fractional Sets

Available in three popular sets. Each set contains a selection of more frequently used, fractional size drills.

| Size   | Part No. | Description | Price /Each |
|--|----------|-------------|-------------|
| 1/8, 3/16, 1/4, 5/16, 3/8                                  | 0307581  | 5 Drills    | \$222.79    |
| 1/16, 3/32, 1/8, 5/32, 3/16, 7/32, 1/4                     | 0307582  | 7 Drills    | 187.80      |
| 3/64, 3/32, 5/64, 3/32, 7/64, 1/8, 9/64, 5/32, 11/64, 3/16 | 0307583  | 10 Drills   | 222.08      |

### Metric Sizes

| Diameter | Part No. | Flute Lgth. | Overall Lgth. | Price /Each |
|----------|----------|-------------|---------------|-------------|
| 1        | 0320593  | 6.5         | 38            | \$17.65     |
| 1.5      | 0320594  | 8           | 38            | 17.38       |
| 2        | 0320595  | 9.5         | 38            | 17.35       |
| 2.5      | 0320596  | 12.5        | 38            | 19.86       |
| 3        | 0320597  | 16          | 38            | 20.96       |
| 3.5      | 0320598  | 16          | 51            | 22.48       |
| 4        | 0320599  | 16          | 51            | 27.04       |
| 4.5      | 0320600  | 16          | 51            | 28.13       |
| 5        | 0320601  | 19          | 51            | 31.71       |
| 5.5      | 0320602  | 19          | 51            | 34.06       |
| 6        | 0320603  | 19          | 51            | 37.79       |
| 6.5      | 0320604  | 19          | 51            | 44.10       |
| 7        | 0320605  | 19          | 64            | 49.84       |
| 7.5      | 0320606  | 19          | 64            | 52.85       |
| 8        | 0320607  | 19          | 64            | 57.02       |
| 8.5      | 0320608  | 25.5        | 64            | 63.91       |
| 9        | 0320609  | 25.5        | 64            | 66.05       |
| 9.5      | 0320610  | 25.5        | 64            | 68.50       |
| 10       | 0320611  | 25.5        | 70            | 89.77       |
| 10.5     | 0320612  | 25.5        | 70            | 94.77       |
| 11       | 0320613  | 25.5        | 70            | 106.70      |
| 11.5     | 0320614  | 25.5        | 76            | 109.58      |
| 12       | 0320615  | 25.5        | 76            | 125.02      |
| 12.5     | 0320616  | 25.5        | 76            | 127.68      |
| 13       | 0320617  | 28.5        | 89            | 156.54      |
| 13.5     | 0320618  | 28.5        | 89            | 159.40      |
| 14       | 0320619  | 28.5        | 89            | 165.15      |
| 14.5     | 0320620  | 32          | 89            | 173.76      |
| 15       | 0320621  | 32          | 89            | 180.94      |
| 15.5     | 0320622  | 32          | 89            | 186.68      |
| 16       | 0320623  | 32          | 89            | 186.68      |
| 16.5     | 0320624  | 38          | 102           | 290.07      |
| 17       | 0320625  | 38          | 102           | 301.56      |
| 17.5     | 0320626  | 38          | 102           | 310.19      |
| 18       | 0320627  | 38          | 102           | 314.50      |
| 18.5     | 0320628  | 38          | 102           | 325.98      |
| 19       | 0320629  | 38          | 102           | 340.35      |
| 20       | 0320630  | 38          | 102           | 374.81      |

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# CARBIDE DRILL BITS

## Stub Drills

### Carbide Stubbing Drill



Cutting Tools

| Size                    | Decimal   | Flute Lgth. | Overall Lgth. | Part No. | Price /Each |
|-------------------------|-----------|-------------|---------------|----------|-------------|
| <b>Fractional Sizes</b> |           |             |               |          |             |
| 1/16"                   | 0.0625"   | 0.625"      | 1.625"        | 0357012  | \$8.87      |
| 5/64"                   | 0.078125" | 0.6875"     | 1.6875"       | 0357013  | 9.36        |
| 3/32"                   | 0.09375"  | 0.75"       | 1.75"         | 0357014  | 9.50        |
| 7/64"                   | 0.109375" | 13/16"      | 1.8125"       | 0357015  | 10.85       |
| 1/8"                    | 0.125"    | 0.875"      | 1.875"        | 0357016  | 11.05       |
| 9/64"                   | 0.140625" | 0.9375"     | 1.9375"       | 0357017  | 13.18       |
| 5/32"                   | 0.15625"  | 1"          | 2.0625"       | 0357018  | 13.83       |
| 11/64"                  | 0.171875" | 1.0625"     | 2.125"        | 0357019  | 17.86       |
| 3/16"                   | 0.1875"   | 1.125"      | 2.1875"       | 0357020  | 16.37       |
| 13/64"                  | 0.203125" | 1.1875"     | 2.25"         | 0357021  | 20.91       |
| 7/32"                   | 0.21875"  | 1.25"       | 2.375"        | 0357022  | 20.91       |
| 15/64"                  | 0.234375" | 1.3125"     | 2.4375"       | 0357023  | 26.08       |
| 17/64"                  | 0.265625" | 1.4375"     | 2.625"        | 0357025  | 33.25       |
| 9/32"                   | 0.28125"  | 1.5"        | 2.6875"       | 0357026  | 34.51       |
| 19/64"                  | 0.296875" | 1.5625"     | 2.75"         | 0357027  | 37.78       |
| 5/16"                   | 0.3125"   | 1.625"      | 2.8125"       | 0357028  | 34.51       |
| 21/64"                  | 0.328125" | 1.6875"     | 2.9375"       | 0357029  | 42.67       |
| 11/32"                  | 0.34375"  | 1.6875"     | 3"            | 0357030  | 47.28       |
| 23/64"                  | 0.359375" | 1.75"       | 3.0625"       | 0357031  | 52.10       |
| 3/8"                    | 0.375"    | 1.8125"     | 3.125"        | 0357032  | 55.07       |
| 25/64"                  | 0.390625" | 1.875"      | 3.25"         | 0357033  | 59.18       |
| 13/32"                  | 0.40625"  | 1.9375"     | 3.3125"       | 0357034  | 65.64       |
| 27/64"                  | 0.421875" | 2"          | 3.375"        | 0357035  | 71.94       |
| 7/16"                   | 0.4375"   | 2.0625"     | 3.4375"       | 0357036  | 67.76       |
| 29/64"                  | 0.453125" | 2.125"      | 3.5625"       | 0357037  | 87.82       |
| 15/32"                  | 0.46875"  | 2.125"      | 3.625"        | 0357038  | 91.51       |
| 31/64"                  | 0.484375" | 2.1875"     | 3.6875"       | 0357039  | 92.43       |
| 1/2"                    | 0.5"      | 2.25"       | 3.75"         | 0357040  | 84.70       |
| 9/16"                   | 0.5625"   | 2.5"        | 4"            | 0357041  | 127.65      |
| 5/8"                    | 0.625"    | 2.75"       | 4.25"         | 0357042  | 155.86      |
| 3/4"                    | 0.75"     | 3.125"      | 5"            | 0357043  | 206.9       |
| <b>Wire Sizes</b>       |           |             |               |          |             |
| #1                      | 0.228"    | 1.3125"     | 2.4375"       | 0357044  | \$28.64     |
| #2                      | 0.221"    | 1.3125"     | 2.4375"       | 0357045  | 28.00       |
| #3                      | 0.213"    | 1.25"       | 2.375"        | 0357046  | 27.21       |
| #4                      | 0.209"    | 1.25"       | 2.375"        | 0357047  | 26.22       |
| #5                      | 0.2055"   | 1.25"       | 2.375"        | 0357048  | 25.79       |
| #6                      | 0.204"    | 1.25"       | 2.375"        | 0357049  | 25.79       |
| #7                      | 0.201"    | 1.1875"     | 2.25"         | 0357050  | 24.53       |
| #8                      | 0.199"    | 1.1875"     | 2.25"         | 0357051  | 24.09       |
| #9                      | 0.196"    | 1.1875"     | 2.25"         | 0357052  | 23.54       |
| #10                     | 0.1935"   | 1.1875"     | 2.25"         | 0357053  | 23.11       |
| #11                     | 0.191"    | 1.1875"     | 2.25"         | 0357054  | 22.83       |
| #12                     | 0.189"    | 1.1875"     | 2.25"         | 0357055  | 22.39       |
| #13                     | 0.185"    | 1.125"      | 2.1875"       | 0357056  | 22.18       |
| #14                     | 0.182"    | 1.125"      | 2.1875"       | 0357057  | 21.76       |
| #15                     | 0.18"     | 1.125"      | 2.1875"       | 0357058  | 21.62       |
| #16                     | 0.177"    | 1.125"      | 2.1875"       | 0357059  | 21.56       |
| #17                     | 0.173"    | 1.125"      | 2.1875"       | 0357060  | 21.18       |
| #18                     | 0.1695"   | 1.0625"     | 2.125"        | 0357061  | 20.92       |
| #19                     | 0.166"    | 1.0625"     | 2.125"        | 0357062  | 20.92       |
| #20                     | 0.161"    | 1.0625"     | 2.125"        | 0357063  | 19.63       |
| #21                     | 0.159"    | 1.0625"     | 2.125"        | 0357064  | 18.58       |
| #22                     | 0.157"    | 1.0625"     | 2.125"        | 0357065  | 18.14       |
| #23                     | 0.154"    | 1"          | 2.0625"       | 0357066  | 18.00       |
| #24                     | 0.152"    | 1"          | 2.0625"       | 0357067  | 17.50       |
| #25                     | 0.1495"   | 1"          | 2.0625"       | 0357068  | 16.95       |
| #26                     | 0.147"    | 1"          | 2.0625"       | 0357069  | 16.72       |
| #27                     | 0.144"    | 1"          | 2.0625"       | 0357070  | 16.51       |
| #28                     | 0.1405"   | 0.9375"     | 1.9375"       | 0357071  | 16.31       |
| #29                     | 0.136"    | 0.9375"     | 1.9375"       | 0357072  | 16.31       |

#### Wire Sizes Cont.

| Size                | Decimal | Flute Lgth. | Overall Lgth. | Part No. | Price /Each |
|---------------------|---------|-------------|---------------|----------|-------------|
| #30                 | 0.1285" | 0.9375"     | 1.9375"       | 0357073  | \$15.31     |
| #31                 | 0.12"   | 0.875"      | 1.875"        | 0357074  | 13.76       |
| #32                 | 0.116"  | 0.875"      | 1.875"        | 0357075  | 14.68       |
| #33                 | 0.113"  | 0.875"      | 1.875"        | 0357076  | 13.54       |
| #34                 | 0.111"  | 0.875"      | 1.875"        | 0357077  | 13.47       |
| #35                 | 0.11"   | 0.875"      | 1.875"        | 0357078  | 13.03       |
| #36                 | 0.1065" | 0.8125"     | 1.8125"       | 0357079  | 12.90       |
| #37                 | 0.104"  | 0.8125"     | 1.8125"       | 0357080  | 12.68       |
| #38                 | 0.1015" | 0.8125"     | 1.8125"       | 0357081  | 12.60       |
| #39                 | 0.0995" | 0.8125"     | 1.8125"       | 0357082  | 12.11       |
| #40                 | 0.098"  | 0.8125"     | 1.8125"       | 0357083  | 12.11       |
| #41                 | 0.096"  | 0.8125"     | 1.8125"       | 0357084  | 11.85       |
| #42                 | 0.0935" | 0.75"       | 1.75"         | 0357085  | 11.62       |
| #43                 | 0.089"  | 0.75"       | 1.75"         | 0357086  | 11.49       |
| #44                 | 0.086"  | 0.75"       | 1.75"         | 0357087  | 11.35       |
| #45                 | 0.082"  | 0.75"       | 1.75"         | 0357088  | 11.19       |
| #46                 | 0.081"  | 0.75"       | 1.75"         | 0357089  | 10.77       |
| #47                 | 0.0785" | 0.75"       | 1.75"         | 0357090  | 10.77       |
| #48                 | 0.076"  | 0.6875"     | 1.6875"       | 0357091  | 10.77       |
| #49                 | 0.073"  | 0.6875"     | 1.6875"       | 0357092  | 10.49       |
| #50                 | 0.07"   | 0.6875"     | 1.6875"       | 0357093  | 10.35       |
| #51                 | 0.067"  | 0.6875"     | 1.6875"       | 0357094  | 10.20       |
| #52                 | 0.0635" | 0.6875"     | 1.6875"       | 0357095  | 10.20       |
| #53                 | 0.0595" | 0.5"        | 1.5"          | 0357096  | 10.07       |
| <b>Letter Sizes</b> |         |             |               |          |             |
| Ltr A               | 0.234"  | 1.3125"     | 2.4375"       | 0357097  | \$26.37     |
| Ltr B               | 0.238"  | 1.375"      | 2.5"          | 0357098  | 27.80       |
| Ltr C               | 0.242"  | 1.375"      | 2.5"          | 0357099  | 27.79       |
| Ltr D               | 0.246"  | 1.375"      | 2.5"          | 0357100  | 27.79       |
| Ltr E               | 0.25"   | 1.375"      | 2.5"          | 0357024  | 23.54       |
| Ltr F               | 0.257"  | 1.4375"     | 2.625"        | 0357101  | 33.96       |
| Ltr G               | 0.261"  | 1.4375"     | 2.625"        | 0357102  | 33.95       |
| Ltr H               | 0.266"  | 1.5"        | 2.6875"       | 0357103  | 35.50       |
| Ltr I               | 0.272"  | 1.5"        | 2.6875"       | 0357104  | 35.50       |
| Ltr J               | 0.277"  | 1.5"        | 2.6875"       | 0357105  | 36.00       |
| Ltr K               | 0.281"  | 1.5"        | 2.6875"       | 0357106  | 36.00       |
| Ltr L               | 0.29"   | 1.5625"     | 2.75"         | 0357107  | 36.29       |
| Ltr M               | 0.295"  | 1.5625"     | 2.75"         | 0357108  | 36.29       |
| Ltr N               | 0.302"  | 1.625"      | 2.8125"       | 0357109  | 43.58       |
| Ltr O               | 0.316"  | 1.6875"     | 2.9375"       | 0357110  | 46.08       |
| Ltr P               | 0.323"  | 1.6875"     | 2.9375"       | 0357111  | 46.08       |
| Ltr Q               | 0.332"  | 1.6875"     | 3"            | 0357112  | 47.34       |
| Ltr R               | 0.339"  | 1.6875"     | 3"            | 0357113  | 49.61       |
| Ltr S               | 0.348"  | 1.75"       | 3.0625"       | 0357114  | 52.09       |
| Ltr T               | 0.358"  | 1.75"       | 3.0625"       | 0357115  | 54.72       |
| Ltr U               | 0.368"  | 1.8125"     | 3.125"        | 0357116  | 55.92       |
| Ltr V               | 0.377"  | 1.875"      | 3.25"         | 0357117  | 65.07       |
| Ltr W               | 0.386"  | 1.875"      | 3.25"         | 0357118  | 65.07       |
| Ltr X               | 0.397"  | 1.9375"     | 3.3125"       | 0357119  | 68.90       |
| Ltr Y               | 0.404"  | 1.9375"     | 3.3125"       | 0357120  | 68.90       |
| Ltr Z               | 0.413"  | 2"          | 3.375"        | 0357121  | 73.79       |
| <b>Metric Sizes</b> |         |             |               |          |             |
| 1.1mm               | 0.0433" | 12.7mm      | 34.9mm        | 0357122  | \$10.21     |
| 1.2mm               | 0.0472" | 15.9mm      | 34.9mm        | 0357123  | 10.21       |
| 1.3mm               | 0.0512" | 15.9mm      | 34.9mm        | 0357124  | 10.21       |
| 1.4mm               | 0.0551" | 15.9mm      | 34.9mm        | 0357125  | 10.21       |
| 1.5mm               | 0.0591" | 12.7mm      | 38.1mm        | 0357126  | 10.21       |
| 1.6mm               | 0.063"  | 17.5mm      | 42.9mm        | 0357127  | 10.14       |
| 1.7mm               | 0.0669" | 17.5mm      | 42.9mm        | 0357128  | 10.14       |
| 1.8mm               | 0.0709" | 17.5mm      | 42.9mm        | 0357129  | 10.41       |
| 1.9mm               | 0.0748" | 17.5mm      | 42.9mm        | 0357130  | 10.42       |

#### Metric Sizes Cont.

| Size  | Decimal | Flute Lgth. | Overall Lgth. | Part No. | Price /Each |
|-------|---------|-------------|---------------|----------|-------------|
| 2.0mm | 0.0767" | 19.1mm      | 44.5mm        | 0357131  | 10.70       |
| 2.1mm | 0.0827" | 19.1mm      | 44.5mm        | 0357132  | 11.13       |
| 2.2mm | 0.0866" | 19.1mm      | 44.5mm        | 0357133  | \$11.41     |
| 2.3mm | 0.0906" | 19.1mm      | 44.5mm        | 0357134  | 11.56       |
| 2.4mm | 0.0945" | 19.1mm      | 44.5mm        | 0357135  | 11.77       |
| 2.5mm | 0.0984" | 20.6mm      | 30.2mm        | 0357136  | 12.04       |
| 2.6mm | 0.1024" | 20.6mm      | 30.2mm        | 0357137  | 12.60       |
| 2.7mm | 0.1063" | 20.6mm      | 30.2mm        | 0357138  | 12.84       |
| 2.8mm | 0.1102" | 22.2mm      | 47.6mm        | 0357139  | 13.39       |
| 2.9mm | 0.1142" | 22.2mm      | 47.6mm        | 0357140  | 14.61       |
| 3.0mm | 0.1181" | 22.2mm      | 47.6mm        | 0357141  | 13.68       |
| 3.1mm | 0.122"  | 22.2mm      | 47.6mm        | 0357142  | 15.24       |
| 3.2mm | 0.126"  | 22.2mm      | 47.6mm        | 0357143  | 15.23       |
| 3.3mm | 0.1299" | 23.8mm      | 47.6mm        | 0357144  | 15.46       |
| 3.4mm | 0.1339" | 23.8mm      | 47.6mm        | 0357145  | 15.46       |
| 3.5mm | 0.1378" | 23.8mm      | 47.6mm        | 0357146  | 16.22       |
| 3.6mm | 0.1417" | 23.8mm      | 47.6mm        | 0357147  | 16.45       |
| 3.7mm | 0.1457" | 25.4mm      | 52.4mm        | 0357148  | 16.65       |
| 3.8mm | 0.1496" | 25.4mm      | 52.4mm        | 0357149  | 17.45       |
| 3.9mm | 0.1535" | 25.4mm      | 52.4mm        | 0357150  | 17.85       |
| 4.0mm | 0.1575" | 27.0mm      | 54.0mm        | 0357151  | 18.50       |
| 4.1mm | 0.1614" | 27.0mm      | 54.0mm        | 0357152  | 20.83       |
| 4.2mm | 0.1654" | 27.0mm      | 54.0mm        | 0357153  | 20.84       |
| 4.3mm | 0.1693" | 27.0mm      | 54.0mm        | 0357154  | 20.84       |
| 4.4mm | 0.1732" | 28.6mm      | 55.6mm        | 0357155  | 21.41       |
| 4.5mm | 0.1772" | 28.6mm      | 55.6mm        | 0357156  | 21.56       |
| 4.6mm | 0.1811" | 28.6mm      | 55.6mm        | 0357157  | 21.68       |
| 4.7mm | 0.185"  | 28.6mm      | 55.6mm        | 0357158  | 22.33       |
| 4.8mm | 0.189"  | 30.2mm      | 57.2mm        | 0357159  | 22.68       |
| 4.9mm | 0.1929" | 30.2mm      | 57.2mm        | 0357160  | 22.98       |
| 5.0mm | 0.1969" | 30.2mm      | 57.2mm        | 0357161  | 23.83       |
| 5.1mm | 0.2008" | 30.2mm      | 57.2mm        | 0357162  | 24.24       |
| 5.2mm | 0.2047" | 31.8mm      | 60.3mm        | 0357163  | 25.44       |
| 5.3mm | 0.2087" | 31.8mm      | 60.3mm        | 0357164  | 25.87       |
| 5.4mm | 0.2126" | 31.8mm      | 60.3mm        | 0357165  | 26.78       |
| 5.5mm | 0.2165" | 31.8mm      | 60.3mm        | 0357166  | 27.57       |
| 5.6mm | 0.2205" | 33.3mm      | 61.9mm        | 0357167  | 27.57       |
| 5.7mm | 0.2244" | 33.3mm      | 61.9mm        | 0357168  | 28.21       |
| 5.8mm | 0.2283" | 33.3mm      | 61.9mm        | 0357169  | 28.21       |
| 5.9mm | 0       |             |               |          |             |



# STUB DRILLS & SPOTTING DRILLS

## Stub Drills



### Solid Carbide Micrograin Stub Drills



For use on work hardening and gummy materials such as titanium, inconel, cast iron, stainless steels, and high alloy steels.

- 15° Helix/Right hand spiral
- Heavy web construction provides extra rigidity and strength

#### Fractional Sizes

| Size  | Part No. | Flute Lgth. | Overall Lgth. | Price /Each |
|-------|----------|-------------|---------------|-------------|
| 1/32  | 0360991  | 1/2         | 1-1/2         | \$7.17      |
| 3/64  | 0360992  | 1/2         | 1-1/2         | 5.96        |
| 1/16  | 0360993  | 5/8         | 1-5/8         | 6.04        |
| 5/64  | 0360994  | 11/16       | 1-11/16       | 6.40        |
| 3/32  | 0360995  | 3/4         | 1-3/4         | 7.02        |
| 7/64  | 0360996  | 13/16       | 1-13/16       | 7.98        |
| 1/8   | 0360997  | 7/8         | 1-7/8         | 8.53        |
| 9/64  | 0360998  | 15/16       | 1-15/16       | 9.44        |
| 5/32  | 0360999  | 1           | 2-1/16        | 10.57       |
| 11/64 | 0361000  | 1-1/16      | 2-1/8         | 12.51       |
| 3/16  | 0361001  | 1-1/8       | 2-3/16        | 12.87       |
| 13/64 | 0361002  | 1-3/16      | 2-1/4         | 14.81       |
| 7/32  | 0361003  | 1-1/4       | 2-3/8         | 16.44       |
| 15/64 | 0361004  | 1-5/16      | 2-7/16        | 18.63       |
| 1/4   | 0361005  | 1-3/8       | 2-1/2         | 19.63       |
| 17/64 | 0361006  | 1-7/16      | 2-5/8         | 22.12       |

|       |         |         |         |         |
|-------|---------|---------|---------|---------|
| 9/32  | 0361007 | 1-1/2   | 2-11/16 | \$23.00 |
| 19/64 | 0361008 | 1-9/16  | 2-3/4   | 25.91   |
| 5/16  | 0361009 | 1-5/8   | 2-13/16 | 27.16   |
| 21/64 | 0361010 | 1-11/16 | 2-15/16 | 29.63   |
| 11/32 | 0361011 | 1-11/16 | 3       | 32.42   |
| 23/64 | 0361012 | 1-3/4   | 3-1/16  | 36.27   |
| 3/8   | 0361013 | 1-13/16 | 3-1/8   | 38.46   |
| 25/64 | 0361014 | 1-7/8   | 3-1/4   | 45.01   |
| 13/32 | 0361015 | 1-15/16 | 3-5/16  | 49.33   |
| 27/64 | 0361016 | 2       | 3-3/8   | 53.63   |
| 7/16  | 0361017 | 2-1/16  | 3-7/16  | 56.12   |
| 29/64 | 0361018 | 2-1/8   | 3-9/16  | 65.07   |
| 15/32 | 0361019 | 2-1/8   | 3-5/8   | 67.77   |
| 31/64 | 0361020 | 2-3/16  | 3-11/16 | 69.71   |
| 1/2   | 0361021 | 2-1/4   | 3-3/4   | 69.71   |

#### Wire Sizes

| Size | Part No. | Flute Lgth. | Overall Lgth. | Price /Each |
|------|----------|-------------|---------------|-------------|
| 1    | 0361022  | 1-5/16      | 2-7/16        | \$17.08     |
| 2    | 0361023  | 1-5/16      | 2-7/16        | 16.44       |
| 3    | 0361024  | 1-1/4       | 2-3/8         | 15.72       |
| 4    | 0361025  | 1-1/4       | 2-3/8         | 15.38       |
| 5    | 0361026  | 1-1/4       | 2-3/8         | 15.02       |
| 6    | 0361027  | 1-1/4       | 2-3/8         | 15.02       |
| 7    | 0361028  | 1-3/16      | 2-1/4         | 14.61       |
| 8    | 0361029  | 1-3/16      | 2-1/4         | 14.47       |
| 9    | 0361030  | 1-3/16      | 2-1/4         | 14.25       |
| 10   | 0361031  | 1-3/16      | 2-1/4         | 14.06       |
| 11   | 0361032  | 1-3/16      | 2-1/4         | 13.89       |
| 12   | 0361033  | 1-3/16      | 2-1/4         | 13.89       |
| 13   | 0361034  | 1-1/8       | 2-3/16        | 13.68       |
| 14   | 0361035  | 1-1/8       | 2-3/16        | 13.38       |
| 15   | 0361036  | 1-1/8       | 2-3/16        | 13.10       |
| 16   | 0361037  | 1-1/8       | 2-3/16        | 13.10       |
| 17   | 0361038  | 1-1/8       | 2-3/16        | 12.51       |
| 18   | 0361039  | 1-1/16      | 2-1/8         | 11.76       |
| 19   | 0361040  | 1-1/16      | 2-1/8         | 11.53       |
| 20   | 0361041  | 1-1/16      | 2-1/8         | 11.04       |
| 21   | 0361042  | 1-1/16      | 2-1/8         | 11.04       |
| 22   | 0361043  | 1-1/16      | 2-1/8         | 10.57       |
| 23   | 0361044  | 1           | 2-1/16        | 10.57       |

|    |         |       |         |         |
|----|---------|-------|---------|---------|
| 24 | 0361045 | 1     | 2-1/16  | \$10.25 |
| 25 | 0361046 | 1     | 2-1/16  | 9.93    |
| 26 | 0361047 | 1     | 2-1/16  | 9.93    |
| 27 | 0361048 | 1     | 2-1/16  | 9.76    |
| 28 | 0361049 | 15/16 | 1-15/16 | 9.44    |
| 29 | 0361050 | 15/16 | 1-15/16 | 9.44    |
| 30 | 0361051 | 15/16 | 1-15/16 | 8.93    |
| 31 | 0361052 | 7/8   | 1-7/8   | 8.30    |
| 32 | 0361053 | 7/8   | 1-7/8   | 8.38    |
| 33 | 0361054 | 7/8   | 1-7/8   | 8.25    |
| 34 | 0361055 | 7/8   | 1-7/8   | 7.98    |
| 35 | 0361056 | 7/8   | 1-7/8   | 7.98    |
| 36 | 0361057 | 13/16 | 1-13/16 | 7.98    |
| 37 | 0361058 | 13/16 | 1-13/16 | 7.70    |
| 38 | 0361059 | 13/16 | 1-13/16 | 7.51    |
| 39 | 0361060 | 13/16 | 1-13/16 | 7.51    |
| 40 | 0361061 | 13/16 | 1-13/16 | 7.32    |
| 41 | 0360966 | 13/16 | 1-13/16 | 7.23    |
| 42 | 0361062 | 3/4   | 1-3/4   | 7.02    |
| 43 | 0361063 | 3/4   | 1-3/4   | 6.96    |
| 44 | 0361064 | 3/4   | 1-3/4   | 6.76    |
| 45 | 0361065 | 3/4   | 1-3/4   | 6.51    |
| 46 | 0361066 | 3/4   | 1-3/4   | 6.51    |
| 47 | 0361067 | 3/4   | 1-3/4   | 6.40    |
| 48 | 0361068 | 11/16 | 1-11/16 | 6.40    |
| 49 | 0361069 | 11/16 | 1-11/16 | 6.23    |
| 50 | 0361070 | 11/16 | 1-11/16 | 6.23    |
| 51 | 0361071 | 11/16 | 1-11/16 | 6.04    |
| 52 | 0361072 | 11/16 | 1-11/16 | 6.04    |
| 53 | 0361073 | 1/2   | 1-1/2   | 6.19    |
| 54 | 0361074 | 1/2   | 1-1/2   | 6.19    |
| 55 | 0361075 | 1/2   | 1-1/2   | 6.19    |
| 56 | 0361076 | 1/2   | 1-1/2   | 6.19    |

Cutting Tools

## Spotting Drills



### Spotting Drills

| Size | Decimal | Flute Lgth. | Overall Lgth. | Point | Part No. | Price /Each |
|------|---------|-------------|---------------|-------|----------|-------------|
| 1/4" | 0.25"   | 3/4"        | 2-1/2"        | 90°   | 0357323  | \$18.79     |
| 1/4" | 0.25"   | 3/4"        | 2-1/2"        | 120°  | 0357324  | 18.79       |
| 3/8" | 0.375"  | 7/8"        | 3-1/8"        | 90°   | 0357325  | 24.09       |
| 3/8" | 0.375"  | 7/8"        | 3-1/8"        | 120°  | 0357326  | 24.09       |
| 1/2" | 0.5"    | 1-1/8"      | 3-3/4"        | 90°   | 0357327  | 39.47       |
| 1/2" | 0.5"    | 1-1/8"      | 3-3/4"        | 120°  | 0357328  | 39.47       |
| 5/8" | 0.625"  | 1-3/16"     | 4-1/4"        | 90°   | 0357329  | 70.10       |
| 5/8" | 0.625"  | 1-3/16"     | 4-1/4"        | 120°  | 0357330  | 70.10       |
| 3/4" | 0.75"   | 1-5/16"     | 5"            | 90°   | 0357331  | 102.85      |
| 3/4" | 0.75"   | 1-5/16"     | 5"            | 120°  | 0357332  | 102.85      |

## Spotting & Centering Drills



KEO spotting and centering drills prevent misalignment frequently caused by using regular drills for centering. These short drills can be chucked close to the point ensuring accuracy and true starts.

| Body Dia. | Overall Lgth. | Flute Lgth. | 90°      |             | 118°     |             |
|-----------|---------------|-------------|----------|-------------|----------|-------------|
|           |               |             | Part No. | Price /Each | Part No. | Price /Each |
| 1/8       | 1-1/4         | 3/8         | 7000096  | \$3.61      | 7000111  | \$3.61      |
| 3/16      | 1-3/8         | 1/2         | 7000097  | 3.92        | 7000111  | \$3.61      |
| 1/4       | 1-1/2         | 5/8         | 7000098  | 4.32        | 7000113  | 4.32        |
| 5/16      | 1-1/2         | 5/8         | 7000099  | 4.92        | 7000114  | 4.92        |
| 3/8       | 2             | 1           | 7000100  | 5.56        | 7000115  | 5.56        |
| 7/16      | 2             | 1           | 7000101  | 7.50        | 7000116  | 7.50        |
| 1/2       | 2             | 1           | 7000102  | 9.18        | 7000117  | 9.18        |
| 9/16      | 2             | 1           | 7000103  | 13.67       | 7000118  | 13.67       |
| 5/8       | 2-1/4         | 1-1/8       | 7000104  | 15.19       | 7000119  | 15.19       |
| 3/4       | 2-1/4         | 1-1/8       | 7000105  | 21.11       | 7000120  | 21.11       |
| 7/8       | 2-1/2         | 1-1/4       | 7000106  | 25.88       | 7000121  | 25.88       |
| 1         | 2-1/2         | 1-1/4       | 7000107  | 33.08       | 7000122  | 33.08       |
| 1-1/4     | 4             | 2           | 7000108  | 64.79       | 7000123  | 64.79       |
| 1-1/2     | 5             | 2-1/2       | 7000109  | 101.04      | 7000124  | 101.04      |
| 1-3/4     | 5-1/2         | 2-3/4       | 7000110  | 152.37      | 7000125  | 152.37      |

# SPADE DRILLS & SCREW EXTRACTORS

## Spade Drills



### Solid Carbide Micrograin Spade Drills



#### Fractional - 118° Point

Designed to general purpose drilling of most materials.

- Heavy-duty web reduces breakage.
- Well suited for shallow-hole drilling - not recommended to exceed two diameters deep.
- Ideal for drilling hard steel, high strength materials RC-50, and thin sheet materials.
- Can be used for spotting.



|        |          |             |               | Carbide Spade Drill<br>118° Point |             | CL       |             |
|--------|----------|-------------|---------------|-----------------------------------|-------------|----------|-------------|
| Size   | Decimal  | Flute Lgth. | Overall Lgth. | Part No.                          | Price /Each | Part No. | Price /Each |
| 1/32"  | 0.03125" | 0.1875"     | 1.5"          | 0306349                           | \$16.36     | 0357307  | \$7.64      |
| 1/16"  | 0.0625"  | 0.3125"     | 1.5"          | 0306351                           | 16.42       | 0357308  | 7.64        |
| 3/32"  | 0.09375" | 1/2"        | 1.5"          | 0306352                           | 16.42       | 0357309  | 7.64        |
| 1/8"   | 0.125"   | 9/16"       | 1.5"          | 0306354                           | 16.47       | 0357310  | 7.64        |
| 5/32"  | 0.15625" | 11/16"      | 2"            | 0306356                           | 21.38       | 0357311  | 9.50        |
| 3/16"  | 0.1875"  | 0.5625"     | 2"            | 0306358                           | 22.63       | 0357312  | 10.50       |
| 7/32"  | 0.21875" | 0.59375"    | 2"            | 0306359                           | 30.07       | 0357313  | 12.11       |
| 1/4"   | 0.25"    | 0.6875"     | 2"            | 0306360                           | 29.93       | 0357314  | 14.11       |
| 9/32"  | 0.28125" | 7/8"        | 2.5"          | 0306361                           | 45.43       | 0357315  | 18.72       |
| 5/16"  | 0.3125"  | 0.875"      | 2.5"          | 0306362                           | 41.92       | 0357316  | 20.13       |
| 11/32" | 0.34375" | 0.9375"     | 2.5"          | 0306363                           | 56.59       | 0357317  | 22.32       |
| 3/8"   | 0.375"   | 1-1/8"      | 2.5"          | 0306364                           | 53.82       | 0357318  | 24.45       |
| 13/32" | 0.40625" | 1-1/8"      | 2.5"          | 0306365                           | 70.55       | 0357319  | 29.41       |
| 7/16"  | 0.4375"  | 1-3/16"     | 2.5"          | 0306366                           | 65.87       | 0357320  | 31.18       |
| 15/32" | 0.46875" | 1-3/16"     | 2.5"          | 0306367                           | 89.56       | 0357321  | 34.10       |
| 1/2"   | 0.5"     | 1-3/16"     | 2.5"          | 0306368                           | 79.80       | 0357322  | 37.36       |

## Screw Extractors

### Screw Extractors

- Cle-Line 1829 and Chicago-Latrobe 800 screw extractors have a bright finish, and spiral fluted
- Designed to remove broken screws, studs, bolts and other threaded parts without damaging threads inside the hole.



| Size     | Screw Dia.  | Pipe   | Dia. of Screw Ext. Shk. | Dia. of Screw Pt. | Drill Size | Cle-Line Series 1829<br>Screw Extractor |             | Norseman Series 420<br>Screw Extractor |             | CL Series<br>800 Screw Extractor |             |
|----------|-------------|--------|-------------------------|-------------------|------------|---|-------------|--|-------------|----------------------------------|-------------|
|          |             |        |                         |                   |            | Part No.                                | Price /Each | Part No.                               | Price /Each | Part No.                         | Price /Each |
| EX-1     | #8-1/4      |        | 0.15625"                | 0.054"            | 0.078125"  | 7012043                                 | \$1.53      | 0312160                                | \$2.58      | 0356976                          | \$2.00      |
| EX-2     | #12-5/16    |        | 0.1875"                 | 0.086"            | 0.109375"  | 7012044                                 | 1.58        | 0312161                                | 2.72        | 0356977                          | 2.11        |
| EX-3     | 5/16-7/16   |        | 0.25"                   | 0.125"            | 0.15625"   | 7012045                                 | 1.71        | 0312162                                | 3.00        | 0356978                          | 2.37        |
| EX-4     | 7/16-9/16   |        | 0.34375"                | 0.1875"           | 0.25"      | 7012046                                 | 1.94        | 0312163                                | 3.33        | 0356979                          | 2.69        |
| EX-5     | 9/16-3/4    | 0.125" | 0.4375"                 | 0.25"             | 0.265625"  | 7012047                                 | 2.74        | 0312164                                | 4.42        | 0356980                          | 3.37        |
| EX-5 1/4 | 11/16-15/16 |        | 0.53125"                | 0.34375"          | 0.359375"  | 7012048                                 | 5.22        |  |             | 0356981                          | 6.54        |
| EX-6     | 3/4-1       |        | 0.59375"                | 0.375"            | 0.40625"   | 7012049                                 | 5.18        | 0312165                                | 9.32        | 0356982                          | 7.39        |
| EX-6 3/8 | 5/16-1 1/8  | 0.375" | 0.6875"                 | 0.46875"          | 0.484375"  | 7012050                                 | 8.82        |  |             | 0356983                          | 11.02       |
| EX-7     | 1-1-3/8     |        | 0.78125"                | 0.5"              | 0.53125"   | 7012051                                 | 10.34       | 0312166                                | 15.98       | 0356984                          | 12.56       |
| EX-7 1/2 | 1 1/8-1 1/2 | 0.5"   | 0.875"                  | 0.59375"          | 0.609375"  | 7012052                                 | 14.74       |  |             | 0356985                          | 15.29       |
| EX-8     | 1-3/8-1-3/4 | 0.75"  | 1.03125"                | 0.75"             | 0.8125"    | 7012053                                 | 14.90       | 0312167                                | 25.51       | 0356986                          | 17.25       |
| EX-9     | 1-3/4-2 1/8 | 1"     | 1.28125"                | 1"                | 1.0625"    | 7012054                                 | 23.68       | 0312168                                | 37.01       | 0356987                          | 28.92       |
| EX-10    | 2 1/8-2 1/2 | 1.25"  | 1.5625"                 | 1.25"             | 1.3125"    | 7012055                                 | 39.03       |  |             | 0356988                          | 39.84       |
| EX-11    | 2 1/2-3     | 1.5"   | 1.875"                  | 1.5"              | 1.5625"    | 7012056                                 | 56.43       |  |             | 0356989                          | 56.72       |
| EX-12    | 3-3 1/2     | 2"     | 2.28125"                | 1.84375"          | 1.9375"    | 7012057                                 | 85.60       |  |             | 0356990                          | 86.80       |



### Sets

| Contents  | Cle-Line Series 1829 |             | Norseman |             | CL Series 800 |             |
|---|----------------------|-------------|----------|-------------|---------------|-------------|
|   | Part No.             | Price /Each | Part No. | Price /Each | Part No.      | Price /Each |
| EX-4,5,6  |                      |             |          |             | 0356991       | \$15.14     |
| Ex-2,3,4,5  |                      |             | 0312169  | \$11.74     |               |             |
| Ex-1,2,3,4,5  | 7012745              | \$13.08     | 0312170  | 12.57       | 7007278       | 20.57       |
| EX-6,7,8,9  |                      |             |          |             | 0356992       | 68.22       |
| Ex-1,2,3,4,5,6  |                      |             |          |             | 7007279       | 31.46       |
| Ex-1,2,3,4,5,6,7,8,9  |                      |             |          |             | 0356993       | 77.67       |
| <b>With Drills</b>  |                      |             |          |             |               |             |
| Ex-1,2,3,4 and 3/32, 1/8, 3/16, 1/4 drills                    |                      |             | 0312560  | 42.80       |               |             |
| Ex-1,2,3,4,5 and 3/32, 1/8, 3/16, 1/4, 5/16 drills            |                      |             | 53490    | 64.66       |               |             |
| Ex-1,2,3,4,5,6 and 5/64, 7/64, 5/32, 1/4, 17/64, 13/32 drills |                      |             |          |             | 7007309       | 52.67       |
| <b>Pipe Extractors</b>  |                      |             |          |             |               |             |
| 5, 5 1/4, 6 3/8, 7 1/2  |                      |             |          |             | 0356994       | 47.85       |
| 5, 5 1/4, 6 3/8, 7 1/2, 8, 9                                  |                      |             |          |             | 0356995       | 84.43       |



# SCREW EXTRACTORS & DRILL BIT SETS

## Screw Extractors



### Type 421-AG Screw, Stud and Pipe Extractors

The square shape of these extractors give the tools the ability to remove broken bolts, screws and pipes with minimum deformation of the broken part. To remove the broken threaded part: drill a hole in the end of the broken part, insert extractor and turn counter clockwise using a wrench on the exposed end of the extractor. The broken part should unscrew without damage to the threads. These forged extractors will not chew up or expand the object being removed.



| Size | Part No. | Screw Dia.  | Dia. of Screw Ext. Shk. | Dia. of Screw Pt. | Drill Size | Pkg. Qty. | Price /Each |
|------|----------|-------------|-------------------------|-------------------|------------|-----------|-------------|
| E-2  | 0312173  | 3/16-9/32   | 3/16                    | 1/8               | 5/32       | 5         | \$5.62      |
| E-3  | 0312174  | 9/32-11/32  | 1/4                     | 11/64             | 3/16       | 5         | 5.62        |
| E-4  | 0312175  | 11/32-1/2   | 5/16                    | 7/32              | 1/4        | 5         | 5.62        |
| E-5  | 0312176  | 1/2-3/4     | 3/8                     | 9/32              | 5/16       | 5         | 5.91        |
| E-6  | 0312177  | 5/8-7/8     | 7/16                    | 21/64             | 3/8        | 1         | 9.93        |
| E-7  | 0312178  | 7/8-1       | 1/2                     | 7/16              | 1/2        | 1         | 13.48       |
| E-8  | 0312179  | 1-1-1/4     | 5/8                     | 1/2               | 9/16       | 1         | 20.99       |
| E-9  | 0312180  | 1-1/8-1-1/2 | 3/4                     | 9/16              | 5/8        | 1         | 26.24       |
| E-10 | 0312181  | 1-1/4-1-3/4 | 7/8                     | 5/8               | 11/16      | 1         | 32.62       |



### Screw Extractor Sets

| Part No.  | Size | Price /Each |
|-----------|------|-------------|
| 7007278   | 5PC  | \$20.57     |
| 7007279   | 6PC  | 31.46       |
| w/ Drills |      |             |
| 7007309   | 12PC | 52.67       |

## Drill Bit Sets



### Type 190-AG Drill Sets Jobber's Length - Black & Gold Magnum Super Premium 135° Split Point



Special Hi-Molybdenum tool steel. Precision ground points, flutes, body, clearance and drill diameter for the ultimate in accuracy and performance. Body and clearance are gold surface treated for maximum lubricity. Especially designed for hand held drills. Recommended for use in work hardening grades of stainless steel & other hard metal drilling applications.

| Part No. | Vendor No. | Description                               | Price /Each |
|----------|------------|---|-------------|
| 53835    | SP-13      | 1/16" - 1/4" x 64ths                      | \$27.15     |
| 53836    | SP-15      | 1/16" - 1/2" x 32nds                      | 74.71       |
| 53837    | SP-21      | 1/16" - 3/8" x 64ths                      | 68.64       |
| 53838    | SP-26      | A-Z                                       | 143.93      |
| 53839    | SP-29P     | 1/16" - 1/2" x 64ths in Plastic Ultra-Dex | 135.98      |
| 0323441  | 44170      | "   | 141.30      |
| 53840    | SP-60      | 1-60                                      | 110.72      |
| 53841    | SP-115     | 1/16 - 1/2 x 64ths + A-Z & 1-60           | 401.90      |
| 53843    | RSP-29     | 1/16 - 1/2 x 64ths, 3/8 shank             | 153.69      |



### Straw Cobalt 135° Point Screw Machine Sets

- Heavy duty drills made from premium 8% cobalt HSS
- 135° split point for faster and easier penetration
- Manufactured to NAS 907 Type J specifications

|   |          | Chicago Latrobe 559 |  |
|---|----------|---------------------|--|
| Contents  | Part No. | Price /Each         |  |
| <b>Fractional Cobalt Straw 135° Screw Machine Set</b> |          |                     |  |
| 1/16-1/2 x 64ths (29 pc.)                             | 7007275  | \$198.63            |  |
| <b>Wire Cobalt Straw 135° Screw Machine Set</b>       |          |                     |  |
| #1-#60 60pc   | 7007276  | 177.35              |  |
| <b>Letter Cobalt Straw 135° Screw Machine Set</b>     |          |                     |  |
| LET A-Z ( 26PC )                                      | 7007277  | 212.74              |  |

### 118° Step Drill



|                |          | Cle-Line Series 1874 Step Drills 118° |          | Cle-Line Series 1874 TIN Step Drills 118° |  |
|----------------|----------|---------------------------------------|----------|---|--|
| Contents       | Part No. | Price /Each                           | Part No. | Price /Each                               |  |
| 3/16-3/4 (3pc) | 7012746  | \$82.94                               |          |   |  |
| 3/16-3/4 (3pc) |          |                                       | 7012747  | \$122.54                                  |  |

### Black Oxide 118° Point Jobber Sets

- Production drills made from premium HSS
- Black oxide finish offers increased wear resistance and improved lubricity
- For general purpose drilling in a wide range of materials



|                                     |          | Cle-Line 1899 |          | Norseman 115T |          | CL 150      |  |
|-------------------------------------|----------|---------------|----------|---------------|----------|-------------|--|
| Contents                            | Part No. | Price /Each   | Part No. | Price /Each   | Part No. | Price /Each |  |
| 1/16-3/8x1/32 11pc                  | 0355235  | \$21.58       |          |               |          |             |  |
| 1/16-1/4x1/64 13pc                  | 7012765  | 16.77         | 53852    | \$26.86       | 7007251  | \$24.12     |  |
| 1/16-1/2x1/32 15pc                  | 7012766  | 43.85         | 53853    | 74.15         | 7007253  | 61.74       |  |
| 1/16-3/8x1/64 21pc                  | 7012767  | 40.70         | 53855    | 66.08         | 7007252  | 58.39       |  |
| 1/16-1/2x1/64 29pc                  | 7012768  | 82.63         | 53857    | 137.34        | 7007254  | 113.44      |  |
| 1/16-1/2x1/64 29pc                  | 0355236  | 87.79         |          |               |          |             |  |
| 3/8 Reduced Shanks                  |          |               |          |               |          |             |  |
| LET A-Z 26 pc                       | 7012773  | 82.51         | 53856    | 136.73        | 7007256  | 119.32      |  |
| #1-60 Wire 60 pc                    | 7012769  | 70.49         | 53858    | 97.39         | 7007255  | 88.68       |  |
| #1-80 Wire 80 pc                    |          |               |          |               | 0357008  | 108.18      |  |
| #61 - #80                           |          |               | 53854    | 46.22         | 7007257  | 36.90       |  |
| 1/16-1/2 x 1/64, #1-60#, A-Z 115 pc | 7012770  | 247.08        |          |               | 7007260  | 341.55      |  |
| 1mm-6mm x 0.5 mm 11 pc              | 7012771  | 17.00         |          |               | 7007258  | 24.94       |  |
| 1 mm-13 mm x 0.5 mm 25 pc           | 7012772  | 84.75         |          |               | 7007259  | 113.99      |  |
| 1 mm-13 mm 118 pc                   |          |               |          |               | 0357009  | 301.39      |  |

# DRILL BIT SETS

## Drill Bit Sets

### Bright and TiN 118° Point Jobber Sets

- Heavy duty production drills made from premium HSS
- 135° split point for faster and easier penetration
- Manufactured to NAS 907 Type B specifications



Cutting Tools



|                                    | Cle-Line 1896 |             | Norseman 100 |             | Chicago Latrobe 150D |             | Norseman 100-BN |             | Chicago Latrobe 150T |             |
|------------------------------------|---------------|-------------|--------------|-------------|----------------------|-------------|-----------------|-------------|----------------------|-------------|
| Contents                           | Part No.      | Price /Each | Part No.     | Price /Each | Part No.             | Price /Each | Part No.        | Price /Each | Part No.             | Price /Each |
| 1/16-3/8x1/32 11pc                 |               |             | 0310279      | \$29.03     |                      |             |                 |             |                      |             |
| 1/16-1/4x1/64 13pc                 | 7012760       | \$16.77     | 0310280      | 20.12       | 7007290              | \$24.92     | 0310407         | \$49.70     |                      |             |
| 1/16-1/2x1/32 15pc                 | 7012761       | 43.85       | 0310281      | 55.68       | 7007292              | 61.00       | 0310408         | 123.13      | 7007302              | \$112.70    |
| 1/16-3/8x1/64 21pc                 | 7012762       | 40.70       | 0310283      | 49.50       | 7007291              | 55.65       |                 |             |                      |             |
| 1/16-1/2x1/64 29pc                 | 7012763       | 82.63       | 0310285      | 103.13      | 7007293              | 113.45      | 0310409         | 233.37      | 7007301              | 210.21      |
| LET A-Z 26pc                       |               |             | 0310284      | 102.39      | 7007295              | 118.41      |                 |             | 0357010              | 156.20      |
| #1-60 Wire 60 pc                   | 7012764       | 70.49       | 0310286      | 72.94       | 7007294              | 93.49       | 0310410         | 199.16      | 7007303              | 173.06      |
| #61-#80 20pc                       |               |             | 0310282      | 34.62       | 7007297              | 34.87       |                 |             |                      |             |
| 1/16-1/2x1/64, #1-60#, A-Z 115pc   |               |             | 0310287      | 302.23      | 7007296              | 341.33      | 0310411         | 720.37      |                      |             |
| 1/16-1/4x1/64 1/4" Chuck 13pc      |               |             | 0310288      | 19.01       |                      |             |                 |             |                      |             |
| 1/16-5/32x1/64, 3/16,7/32&1/4 10pc |               |             | 0310278      | 14.22       |                      |             |                 |             |                      |             |

### 135° Point Jobber Sets



|                                    | Cle-Line 1801 Black |             | Cle-Line 1878 Black and Gold |             | Norseman 190 Black |             | Chicago Latrobe 150ASP Black |             | Norseman 190AN TIN |             | Chicago Latrobe 150ASP TIN |             |
|------------------------------------|---------------------|-------------|------------------------------|-------------|--------------------|-------------|------------------------------|-------------|--------------------|-------------|----------------------------|-------------|
| Contents                           | Part No.            | Price /Each | Part No.                     | Price /Each | Part No.           | Price /Each | Part No.                     | Price /Each | Part No.           | Price /Each | Part No.                   | Price /Each |
| 1/16-1/4x1/64 13pc                 |                     |             | 7012753                      | \$21.18     | 0311262            | \$37.66     | 7007284                      | \$28.20     | 0311384            | \$52.07     | 7007289                    | \$55.65     |
| 1/16-1/2x1/32 15pc                 | 7012734             | \$50.68     | 7012754                      | 54.06       | 0311263            | 28.64       | 7007285                      | 71.08       | 0311385            | 129.04      | 7007288                    | 120.58      |
| 1/16-3/8x1/64 21pc                 |                     |             |                              |             | 0311264            | 80.07       | 7007286                      | 65.75       |                    |             |                            |             |
| 1/16-1/2x1/64 29pc                 | 7012735             | 91.12       |                              |             | 0311265            | 71.91       | 7007282                      | 131.33      | 0311386            | 245.11      |                            |             |
| LET A-Z 26pc                       |                     |             |                              |             | 0311266            | 144.55      | 7007287                      | 129.04      |                    |             |                            |             |
| #1-60 Wire 60 pc                   | 7012736             | 85.97       |                              |             | 0311267            | 147.77      | 7007281                      | 108.35      | 0311387            | 209.20      |                            |             |
| #61-#80 20pc                       |                     |             |                              |             | 0311268            | 115.49      | 0357011                      | 33.71       |                    |             |                            |             |
| 1/16-1/2x1/64, #1-60#, A-Z 115pc   | 7012737             | 303.75      |                              |             | 0311269            | 438.88      | 7007283                      | 396.97      | 0311388            | 755.27      |                            |             |
| 1/16-5/32x1/64, 3/16,7/32&1/4 10pc |                     |             |                              |             | 0311261            | 21.90       |                              |             |                    |             |                            |             |

## Drill Bit Sets

### TIN Coated 118° Point Screw Machine Sets



|   |          | Chicago Latrobe<br>2157 |  |
|---|----------|-------------------------|--|
| Contents  | Part No. | Price<br>/Each          |  |
| <b>Fractional TIN Coated 118° Screw Machine Set</b> |          |                         |  |
| 1/16-1/2 x 64ths (29 pc.)                           | 0357001  | \$202.19                |  |
| 1/16-1/4 x 64ths (13 pc.)                           | 0357004  | 36.24                   |  |
| 1/16-1/2 x 32nds (15 pc.)                           | 0357005  | 105.91                  |  |
| <b>Wire TIN Coated 118° Screw Machine Set</b>       |          |                         |  |
| #1-60 Wire (60 pc.)                                 | 0357007  | 138.14                  |  |
| <b>Letter TIN Coated 118° Screw Machine Set</b>     |          |                         |  |
| LET A-Z (26 pc.)                                    | 0357006  | 185.47                  |  |

### Black Oxide 135° Point Screw Machine Sets

- Production drills made from premium HSS
- 135° split point for faster and easier penetration
- Manufactured to NAS 907 Type C specifications



|   | Cle-line 1896 |                | Norseman 135 |                | Chicago Latrobe 159 |                |
|---|---------------|----------------|--------------|----------------|---------------------|----------------|
| Contents  | Part No.      | Price<br>/Each | Part No.     | Price<br>/Each | Part No.            | Price<br>/Each |
| <b>Fractional Black Oxide 135° Screw Machine Set</b>      |               |                |              |                |                     |                |
| 1/16-5/32 x 1/64 plus 3/16, 7/32 & 1/4 10pc               |               |                | 0310578      | \$16.38        |                     |                |
| 1/16-1/4x1/32 13pc  |               |                | 0310580      | 20.91          |                     |                |
| 1/16-3/8x1/32 11pc  |               |                | 0310579      | 31.55          |                     |                |
| 1/16-3/8x1/64 21pc  | 7012757       | \$48.79        | 0310581      | 52.36          | 7007262             | \$66.42        |
| 1/16-1/2x1/64 29PC  | 7012758       | 91.73          | 0310582      | 106.59         | 7007261             | 111.60         |
| 1/16-1/2x1/32 15PC  |               |                |              |                | 0357002             | 46.80          |
| 5 Carbon Plg Hand Taps & 5 HD Screw Mach Drills, 10pc Set | 7012774       | 49.55          |              |                |                     |                |
| <b>Wire Black Oxide 135° Screw Machine Set</b>            |               |                |              |                |                     |                |
| #1-#60 60pc   | 7012759       | 80.43          | 0310897      | 191.64         | 7007263             | 107.59         |
| <b>Fractional TIN Coated 135° Screw Machine Set</b>       |               |                |              |                |                     |                |
| 1/16-1/2x1/64 29pc  |               |                | 0310790      | 233.68         |                     |                |

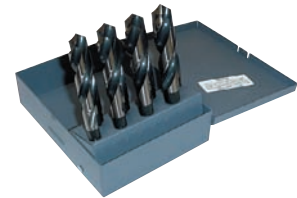
### S and D Flatted Sets



|   | Norseman 130-AG |                | Chicago Latrobe 190F & 190C |                |
|---|-----------------|----------------|-----------------------------|----------------|
| Contents  | Part No.        | Price<br>/Each | Part No.                    | Price<br>/Each |
| 9/16-1"x16th 8pc HSS Black S & D Drill Set, Flatted Shank               |                 |                | 7007305                     | \$330.25       |
| 9/16-1"x16th 8pc HSS Black S & D Drill Set, Round Shank-Plastic Pouch   |                 |                | 0356999                     | 215.44         |
| 4 Pc S & D 9/16-1"x16th 8pc Cobalt Straw S & D Drill Set, Flatted Shank | 0312366         | \$143.44       | 7007304                     | 370.56         |
| 1/2-1"x64th 33PC HSS Black S & D Drill Set, Flatted Shank               |                 |                | 0356996                     | 830.73         |
| 17/32-1x1/32 16pc HSS Black S & D Drill Set, Flatted Shank-Wooden Stand |                 |                | 0356997                     | 428.18         |

### S and D Round Sets

- Production drills made from premium HSS
- Black oxide finish for increased wear resistance and additional lubricity



|   | Cle-line 1813 |                | Norseman 130 |                | Chicago Latrobe 190 |                |
|---|---------------|----------------|--------------|----------------|---------------------|----------------|
| Contents  | Part No.      | Price<br>/Each | Part No.     | Price<br>/Each | Part No.            | Price<br>/Each |
| 9/16-1"x16th 8pc HSS Black S & D Drill Set, Round Shank               | 7012744       | \$174.67       | 0310509      | \$280.96       | 7007264             | \$281.81       |
| 9/16-1"x16th 8pc HSS Black S & D Drill Set, Round Shank-Plastic Pouch |               |                |              |                | 0356999             | 215.44         |
| 17/32-1x1/32 16pc HSS Black S & D Drill Set, Round Shank-Wooden Stand |               |                |              |                | 0357003             | 392.72         |
| 1/2-1"x64th 33PC HSS Black S & D Drill Set, Round Shank               | 7012743       | 668.25         |              |                | 7007265             | 1073.91        |
| 4 Pc S & D  |               |                | 0312365      | 120.73         |                     |                |

### 135° Mechanics Length Sets



|                           | Cle-Line 1875 |                | Cle-Line 1876 3/8 Shank |                | Norseman 130-AG |                |
|---------------------------|---------------|----------------|-------------------------|----------------|-----------------|----------------|
| Contents                  | Part No.      | Price<br>/Each | Part No.                | Price<br>/Each | Part No.        | Price<br>/Each |
| 1/16-1/4 x 64ths (13 pc.) | 7012748       | \$21.62        |                         |                | 0311144         | \$29.56        |
| 1/16-1/2 x 32nds (15 pc.) | 7012749       | 55.35          |                         |                | 0311145         | 83.82          |
| 1/16-3/8 x 64ths (21 pc.) | 7012750       | 53.34          |                         |                | 0311146         | 74.13          |
| 1/16-1/2 x 64ths (29 pc.) | 7012751       | 101.81         | 7012752                 | \$107.71       | 0311147         | 152.37         |

# DRILL BIT SETS

Cutting Tools

## Drill Bit Sets Cont.



### HSS 135° Split Point TiN Parabolic Drill Set - 150DHT

- Flute configuration disperses chips and increases coolant flow volume
- Engineered for deep hole drilling 8 to 12 X diameter in depth

| Contents           | Part No. | Price /Each |
|--------------------|----------|-------------|
| 1/16-1/2x1/64 29pc | 7007298  | \$345.35    |

### High Speed Tap and Drill Set

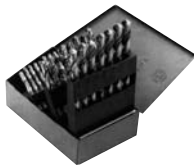
- 18 piece bright production jobber length drills and plug chamfer production had taps

| Part No. | Size | Size Range     | Price /Each |
|----------|------|----------------|-------------|
| 7007306  | 18PC | 6-32, - 1/2-13 | \$115.61    |



### Type 128 Drill Sets 3/8" Shank - Jobber's Length Bright Finish General Purpose - 118° Point

For use in portable air or electric equipment with 3/8" chucks.



| Part No. | Vendor No. | Description      | Price /Each |
|----------|------------|------------------|-------------|
| 0310492  | R-29       | 1/16-1/2 x 64ths | \$129.45    |

### Type 178-AG Drill Sets Mechanic's Length Magnum Super Premium Black & Gold 3/8" Shank (3 Flats on shank 3/16 and Larger) 135° Point

Special Hi-Molybdenum tool steel. Precision ground points, flutes, body, clearance and drill diameter for the ultimate in accuracy and performance. Body and clearance are gold surface treated for maximum lubricity. Especially designed for hand held drills. Recommended for use in work hardening grades of stainless steel and other hard metal drilling applications.



| Part No. | Vendor No. | Description              | Price /Each |
|----------|------------|--------------------------|-------------|
| 0311154  | RSPM-15    | 1/16-1/2 x 32nds-3/8shk. | \$90.54     |
| 0311155  | RSPM-29    | 1/16-1/2 x 64ths-3/8shk. | 165.67      |

### Type 120 Drill Sets 1/4 Shank General Purpose - 118° Point

For use in portable air and electric equipment with 1/4" chucks, the shorter-than-jobber length greatly increases rigidity and improves drilling performance.



| Part No. | Vendor No. | Description      | Price /Each |
|----------|------------|------------------|-------------|
| 0310468  | Q-11       | 1/16-3/8 x 32nds | \$47.95     |
| 0310469  | Q-15       | 1/16-1/2 x 32nds | 76.05       |
| 0310470  | Q-21       | 1/16-3/8 x 64ths | 68.29       |
| 0310471  | Q-293      | 1/16-1/2 x 64ths | 143.43      |

### Type 150 Cobalt Drill Sets Jobber's Length - Gold Finish - 135° Point

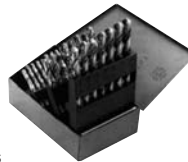
Used in drilling hard tough metals, free machining stainless steel, high-temperature alloys, titanium and certain plastics.



| Part No. | Vendor No. | Description      | Price /Each |
|----------|------------|------------------|-------------|
| 0310893  | D-15       | 1/16-1/2 x 32nds | \$159.57    |
| 0310896  | D-29       | 1/16-1/2 x 64ths | 299.75      |
| 0310897  | D-60       | 1-60             | 191.64      |

### Type 150-M Drills Jobber's Length - Cobalt - Metric NAS 907-J

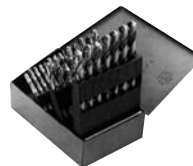
Heavy-duty 135° split point with gold finish for use in drilling hard tough metals, free machining stainless steel, high temperature alloys, titanium and certain plastics. High red hardness of cobalt steel permits speeds 30% higher than regular high speed steel drills.



| Part No. | Vendor No. | Description            | Price /Each |
|----------|------------|------------------------|-------------|
| 0310987  | D-25D      | 1.0 mm-13.0 mm x .5 mm | \$181.43    |

### Type 170-AG Drills Jobber's Length - Metric Heavy-Duty Super Premium - 135° Point

Special Hi-Molybdenum tool steel. Precision ground point, flutes, body, clearance and drill diameter for the ultimate in accuracy and performance. Recommended for use in work hardened grades of stainless steel and other hard metal drilling applications.



| Part No. | Vendor No. | Description            | Price /Each |
|----------|------------|------------------------|-------------|
| 53489    | SP-19M     | 1.0 mm-10.0 mm x .5 mm | \$68.65     |
| 0311114  | SP-25M     | 1.0 mm-13.0 mm x .5 mm | 125.48      |

### Type 135-AG Drill Sets Screw Machine Length Magnum Black & Gold Super Premium

Special Hi-Molybdenum surface treated body and clearance for maximum lubricity. 135° split point, drill will not walk. Recommended for work hardening grades of stainless steel and other hard metal drilling applications.



| Part No. | Vendor No. | Description      | Price /Each |
|----------|------------|------------------|-------------|
| 0310699  | SPT-29     | 1/16-1/2 x 64ths | \$130.39    |

### Type 190-AL Drills Jobber's Length - Left-Hand Spiral Heavy-Duty Super Premium

Special Hi-Molybdenum tool steel. 135° split point for fast penetration and accurate starting without center punch. Precision ground point, flutes, body, clearance and drill diameter for the ultimate in accuracy and performance. Body and clearance are gold surface treated for maximum lubricity. Ideal for drilling broken studs. Need for screw and bolt extractor may be eliminated.



| Size | Part No. | Overall Lgth.               | Pkg. Qty. | Price /Each |
|------|----------|-----------------------------|-----------|-------------|
| LF-8 | 0312559  | 8 pc set/1/16 -1/2 by 16ths | 1         | \$142.82    |

### Type 130-AG Drills 1/2" Shank - Silver & Deming Black & Gold - Heavy-Duty Super Premium

Constructed from Hi-Molybdenum tool steel. 135° split point available in sizes under 3/4". Recommended for use in work hardening grades of stainless steel and other hard metal drilling applications.



| Size        | Part No. | Pkg. Qty. | Price /Each |
|-------------|----------|-----------|-------------|
| S & D - 8SP | 53994    | 1         | \$323.21    |
| S & D - 4SP | 0312366  | 1         | 143.44      |

### Type 925 Stocking Units

#### Closed Drawer All Steel Stocking Units

- Fractional Drills - 96 piece assortment
- Wire Gauge Drills - 249 piece assortment
- Letter Drills - 72 piece assortment



| Part No. | Set Size          | Price /Each |
|----------|-------------------|-------------|
| 0312284  | 190 AG Letter     | \$541.02    |
| 0312285  | 190 AG Fractional | 539.57      |
| 0312286  | 190 AG Number     | 617.18      |



# DRILL SHARPENERS & COUNTERSINKS

## Drill Sharpeners

### Drill Doctor DD350X

The DD350X is ideal for the home workshop. It provides the homeowner, weekend craftsman, or hobbyist with the sharpening power needed to restore dull bits and keep on working. The new DD350X adds simplicity, stability and accuracy for the end-user.



#### Specifications

- On Chuck Alignment, eliminates alignment port for simplified sharpening process
- V-Block jaws eliminate jaw twisting on small bits
- New ergonomic low profile design for increased stability and less tool walking.
- New permanent magnet motor produces consistent power, regardless of speed or load.
- Sharpens 3/32" to 1/2" drill bits
- Sharpens High-speed Steel, Carbide, TiN-coated and Masonry bits
- User-Replaceable diamond sharpening wheel accessory available

| Part No. | Description | Price /Each |
|----------|-------------|-------------|
| 0323460  | DD350X      | \$116.76    |

### Drill Doctor Accessories

| Part No. | Description            | Price /Each |
|----------|------------------------|-------------|
| 0323461  | 180 Grit Diamond Wheel | \$30.85     |
| 0323462  | 100 Grit Diamond Wheel | 30.85       |
| 0323463  | 1/2" to 3/4" Chuck     | 63.60       |
| 0323465  | Left-hand Chuck        | 56.53       |

### Drill Doctor DD500X

The DD500X shop model is designed for durability and has the flexibility required to sharpen the largest range and most popular sizes of dull or broken bits-including split points and masonry bits. Increase capacity with optional 3/4" chuck accessory.



#### Specifications

- User replaceable diamond sharpening wheel design for simple replacement. "No tool needed"
- One piece alignment system improves precision, and adjustability.
- Longer jaws hold bit more precisely and jaw guides eliminate jaw twisting on small bits.
- Cast aluminum point angle shuttle for added durability
- For the serious drill bit user - DIY, hobbyist, and professional
- Sharpens 3/32" - 1/2" drill bits
- Sharpens High-speed Steel, Carbide, Cobalt, TiN-coated and Masonry bits
- Can sharpen 3/32" - 1/2" reverse-twist (left-hand) drill bits with optional accessory (special order only)

| Part No. | Description | Price /Each |
|----------|-------------|-------------|
| 0323464  | DD500X      | \$174.84    |

### Drill Doctor DD750X

3/32 - 1/2 Chuck  
1/2 - 3/4 Chuck

The DD750X shop model is designed for durability and has the flexibility required to sharpen the largest range of dull or broken bits-including split points and masonry bits. The DD750X also adds increased capacity, sharpening 3/32" to 3/4" bits.



#### Specifications

- One chuck sharpens all sizes 3/32" - 3/4".
- Longer jaws hold bit more precisely and jaw guides eliminate jaw twisting on small bits.
- New "Push to Stop" design on the drill point splitting port will not allow you to over split the bit point.
- Adjustable material take-off allows user to change the amount of bit material that can be removed to further extend the life of your bits.
- User replaceable diamond sharpening wheel design for simple replacement. "No tool needed"
- Cast aluminum point angle shuttle for added durability
- Metal sharpening tube
- New permanent magnet motor produces consistent power, regardless of speed or load.
- Sharpens High-speed Steel, Carbide, Cobalt, TiN-coated and Masonry bits
- Can sharpen 3/32" - 1/2" reverse-twist (left-hand) drill bits with optional accessory
- Includes professional hard-shell carrying case

| Contents | Vendor No. | Price /Each |
|----------|------------|-------------|
| 0302056  | DD750X     | \$211.99    |

Not For Industrial Use

\* Carbide and Cobalt drill bits are designed to be split point bits.

## FASTENAL

INDUSTRIAL & CONSTRUCTION SUPPLIES

### TDC DRILL SETS

- Made of M2 tool steel and cobalt
- Cut flute design for all sets
- Durable cases
- Heavy duty sets are gold surface treated for lubricity
- Convenient locking mechanism

The Best Value For Your Dollar!



| Part Number | Description                                   | Sale/Each |
|-------------|---|-----------|
| 0303043     | 1/16" - 1/2" by 64ths 29Pc. 135sp Cobalt      | \$109.99  |
| 0303044     | 1/16" - 1/2" by 64ths 29Pc. 135sp Heavy Duty  | \$99.49   |
| 0303045     | 1/16" - 1/2" by 64ths 29Pc. 118kg Black Oxide | \$59.99   |
| 0303046     | 1/16" - 1/2" by 32nds 15Pc. 135sp Cobalt      | \$66.89   |
| 0303047     | 1/16" - 1/2" by 32nds 15Pc. 135sp Heavy Duty  | \$59.99   |
| 0303048     | 1/16" - 1/2" by 32nds 15Pc. 118kg Black Oxide | \$34.79   |
| 0303049     | 9/16" - 1" by 16ths 8Pc. 135sp Silver & Denim | \$149.89  |

## Countersinks



### 82° Pilotless Countersinks - Type 82-AG

- Single cutting edge for fast stock removal
- Chatterproof - for a micro smooth finish
- Easily resharpened - for extra long life
- Special Hi-Molybdenum tool steel



| Part No. | Size   | Dia. of Cut min. | Maximum  | Screw Size | Shank Dia. | Price /Each |
|----------|--------|------------------|----------|------------|------------|-------------|
| 0310121  | CS073  | .073             | 15/64    |            | 1/4"       | \$16.49     |
| 0310122  | CS3/16 | 3/16"            | 17/32"   |            | 1/4"       | 20.68       |
| 0310123  | CS307  | .307             | 25/32    |            | 1/2"       | 35.84       |
| 0310124  | CS307A | .307"            | 25/32"   |            | 1/4"       | 35.84       |
| 0310125  | CS431  | .431             | 7/8      |            | 1/2"       | 60.99       |
| 0310126  | CS1/2B | 1/2"             | 1-15/32" |            | 1/2"       | 139.08      |
| 0310127  | CS5S   |                  |          | Nos.4,5    | 1/4"       | 11.89       |
| 0310128  | CS6S   |                  |          | No.6       | 1/4"       | 12.58       |
| 0310129  | CS8S   |                  |          | No.8       | 1/4"       | 13.37       |
| 0310130  | CS10S  |                  |          | No.10      | 1/4"       | 15.69       |



# CENTER DRILLS & COUNTERSINKS

## Center Drills



### Solid Carbide Micrograin Center Drills

#### 118° Pilot Drill Point

The Combination Drill and Countersink has a straight flute construction providing strength, making it ideal for drilling and countersinking in difficult materials. It may also be used in high production applications where tolerance, finish, and downtimes are considerations.



Cutting Tools

| Size | Pt. Dia. | Shank Dia. | Overall Lgth. | Standard 60° Angle |           |             | Standard 82° Angle |           |             | Standard 90° Angle |           |             | Standard 60° TiN Coat |           |             |
|------|----------|------------|---------------|--------------------|-----------|-------------|--------------------|-----------|-------------|--------------------|-----------|-------------|-----------------------|-----------|-------------|
|      |          |            |               | Part No.           | Pkg. Qty. | Price /Each | Part No.           | Pkg. Qty. | Price /Each | Part No.           | Pkg. Qty. | Price /Each | Part No.              | Pkg. Qty. | Price /Each |
| 00   | 0.0265   | 1/8        | 1-1/2         | 0306369            | 1         | \$29.88     | 0306385            | 1         | \$15.10     | 0306393            | 1         | \$15.10     | 0306377               | 1         | \$17.48     |
| 0    | 1/32     | 1/8        | 1-1/2         | 0306370            | 1         | 30.25       | 0306386            | 1         | 15.47       | 0306394            | 1         | 15.47       | 0306378               | 1         | 17.86       |
| 1    | 3/64     | 1/8        | 1-1/2         | 0306371            | 1         | 28.04       | 0306387            | 1         | 14.40       | 0306395            | 1         | 14.40       | 0306379               | 1         | 14.94       |
| 2    | 5/64     | 3/16       | 1-7/8         | 0306372            | 1         | 42.93       | 0306388            | 1         | 17.68       | 0306396            | 1         | 17.68       | 0306380               | 1         | 21.52       |
| 3    | 7/64     | 1/4        | 2             | 0306373            | 1         | 49.16       | 0306389            | 1         | 20.43       | 0306397            | 1         | 20.43       | 0306381               | 1         | 30.11       |
| 4    | 1/8      | 5/16       | 2-1/8         | 0306374            | 1         | 65.56       | 0306390            | 1         | 28.15       | 0306398            | 1         | 28.15       | 0306382               | 1         | 41.32       |
| 5    | 3/16     | 7/16       | 2-3/4         | 0306375            | 1         | 93.14       | 0306391            | 1         | 42.59       | 0306399            | 1         | 42.59       | 0306383               | 1         | 61.14       |
| 6    | 7/32     | 1/2        | 3             | 0306376            | 1         | 136.51      | 0306392            | 1         | 63.97       | 0306400            | 1         | 63.97       | 0306384               | 1         | 77.01       |



### Combined Drills & Countersinks - Long Series

KEO long series combined drills and countersinks are used for producing center holes in components or workpieces with the extra length allowing access to difficult-to-reach areas.



| Part No. | Body Dia. | Point Dia. | Point Size | Overall Lgth. | Price /Each |
|----------|-----------|------------|------------|---------------|-------------|
| 7000069  | 1/8       | 3/64       | 3/64       | 3             | \$8.87      |
| 7000070  | 1/8       | 3/64       | 3/64       | 4             | 9.25        |
| 7000071  | 1/8       | 3/64       | 3/64       | 5             | 12.86       |
| 7000072  | 1/8       | 3/64       | 3/64       | 6             | 16.83       |
| 7000073  | 3/16      | 5/64       | 5/64       | 3             | —           |
| 7000074  | 3/16      | 5/64       | 5/64       | 4             | 10.14       |
| 7000075  | 3/16      | 5/64       | 5/64       | 5             | 12.99       |
| 7000076  | 3/16      | 5/64       | 5/64       | 6             | 16.90       |
| 7000077  | 1/4       | 7/64       | 7/64       | 3             | —           |
| 7000078  | 1/4       | 7/64       | 7/64       | 4             | 10.68       |
| 7000079  | 1/4       | 7/64       | 7/64       | 5             | 14.05       |
| 7000080  | 1/4       | 7/64       | 7/64       | 6             | 17.06       |
| 7000081  | 5/16      | 1/8        | 1/8        | 3             | —           |
| 7000082  | 5/16      | 1/8        | 1/8        | 4             | 11.83       |

| Part No. | Body Dia. | Point Dia. | Point Size | Overall Lgth. | Price /Each |
|----------|-----------|------------|------------|---------------|-------------|
| 7000083  | 5/16      | 1/8        | 1/8        | 5             | \$15.13     |
| 7000084  | 5/16      | 1/8        | 1/8        | 6             | 17.48       |
| 7000085  | 3/8       | 9/64       | 9/64       | 4             | 13.30       |
| 7000086  | 3/8       | 9/64       | 9/64       | 5             | 15.73       |
| 7000087  | 3/8       | 9/64       | 9/64       | 6             | 18.97       |
| 7000088  | 7/16      | 3/16       | 3/16       | 4             | 15.55       |
| 7000089  | 7/16      | 3/16       | 3/16       | 5             | 18.01       |
| 7000090  | 7/16      | 3/16       | 3/16       | 6             | 20.22       |
| 7000091  | 1/2       | 7/32       | 7/32       | 4             | —           |
| 7000092  | 1/2       | 7/32       | 7/32       | 5             | 19.35       |
| 7000093  | 1/2       | 7/32       | 7/32       | 6             | 23.39       |
| 7000094  | 5/8       | 1/4        | 1/4        | 6             | 43.58       |
| 7000095  | 3/4       | 5/16       | 5/16       | 6             | 47.06       |

## Countersinks



### Single Flute Carbide Countersinks

- Solid carbide construction with steel shanks on tools 3/8" diameter and larger
- Recommended for use on abrasive, non-metallic and non-ferrous materials
- Easily resharpened
- Can be used on hardened steel and work hardening alloys
- Not recommended for use in hand held tools
- Rigid set-ups and good machinery maintenance are a must



| Dia. | Shank Dia. | Overall Lgth. | 60°      |             | 82°      |             | 90°      |             | 100°     |             |
|------|------------|---------------|----------|-------------|----------|-------------|----------|-------------|----------|-------------|
|      |            |               | Part No. | Price /Each | Part No. | Price /Each | Part No. | Price /Each | Part No. | Price /Each |
| 1/8  | 1/8        | 1-1/2         | 0320685  | \$16.78     | 0320692  | \$16.78     | 0320699  | \$16.78     | 0320706  | \$16.78     |
| 3/16 | 3/16       | 2             | 0320686  | 21.06       | 0320693  | 21.06       | 0320700  | 21.06       | 0320707  | 21.06       |
| 1/4  | 1/4        | 2             | 0320687  | 25.40       | 0320694  | 25.40       | 0320701  | 25.40       | 0320708  | 25.40       |
| 3/8  | 1/4        | 2             | 0320688  | 49.37       | 0320695  | 49.37       | 0320702  | 49.37       | 0320709  | 49.37       |
| 1/2  | 1/4        | 2-1/2         | 0320689  | 68.52       | 0320696  | 68.52       | 0320703  | 68.52       | 0320710  | 68.52       |
| 3/4  | 3/8        | 3             | 0320690  | 127.47      | 0320697  | 127.47      | 0320704  | 127.47      | 0320711  | 127.47      |
| 1    | 1/2        | 3             | 0320691  | 208.51      | 0320698  | 208.51      | 0320705  | 208.51      | 0320712  | 208.51      |

## Countersinks Cont.



### Single Flute HSS Countersinks

- Designed for general purpose countersinking, chamfering or deburring.
- Each size may be used on a wide range of hole diameters
- Use on a machine tool or in hand-held tool applications
- Self piloting and completely chatterless
- Black surface treatment to prolong tool life and prevent galling
- No secondary bars formed
- Easily resharpened



| Dia.  | Shank Dia. | Overall Lgth. | 60°      |             | 82°      |             | 90°      |             | 100°     |             | 120°     |             |
|-------|------------|---------------|----------|-------------|----------|-------------|----------|-------------|----------|-------------|----------|-------------|
|       |            |               | Part No. | Price /Each | Part No. | Price /Each | Part No. | Price /Each | Part No. | Price /Each | Part No. | Price /Each |
| 1/8   | 1/8        | 1-1/2         | 0320631  | \$9.92      | 0320644  | \$9.92      | 0320651  | \$9.92      | 0320664  | \$9.49      | 0320672  | \$9.92      |
| 3/16  | 3/16       | 1-1/2         | 0320632  | 10.20       | 0320645  | 10.20       | 0320652  | 10.20       | 0320665  | 10.34       | 0320673  | 10.20       |
| 1/4   | 1/4        | 2             | 0320633  | 10.64       |          |             | 0320653  | 10.64       | 0320666  | 10.50       | 0320674  | 10.64       |
| 3/8   | 1/4        | 2             | 0320634  | 12.10       |          |             | 0320654  | 12.10       | 0320667  | 12.10       | 0320675  | 12.10       |
| 1/2   | 1/4        | 2             | 0320635  | 14.72       |          |             | 0320655  | 14.72       | 0320668  | 15.99       | 0320676  | 14.72       |
| 5/8   | 1/2        | 2-1/2         | 0320636  | 19.68       |          |             | 0320656  | 19.68       | 0320669  | 23.08       | 0320677  | 19.68       |
| 3/4   | 1/2        | 2-3/4         | 0320637  | 28.75       |          |             | 0320657  | 28.75       | 0320670  | 31.72       | 0320678  | 28.75       |
| 1     | 1/2        | 2-3/4         | 0320638  | 47.81       |          |             | 0320658  | 47.81       | 0320671  | 48.52       | 0320679  | 47.81       |
| 1-1/4 | 3/4        | 3-3/8         | 0320639  | 93.59       | 0320646  | 93.59       | 0320659  | 93.59       |          |             |          |             |
| 1-1/2 | 3/4        | 3-1/2         | 0320640  | 126.46      | 0320647  | 126.46      | 0320660  | 126.46      |          |             |          |             |
| 2     | 3/4        | 3-3/4         | 0320641  | 227.19      | 0320648  | 227.19      | 0320661  | 227.19      |          |             |          |             |
| 2-1/2 | 3/4        | 4-3/4         | 0320642  | 604.27      | 0320649  | 604.27      | 0320662  | 604.27      |          |             |          |             |
| 3     | 3/4        | 5             | 0320643  | 707.97      | 0320650  | 707.97      | 0320663  | 707.97      |          |             |          |             |

### 3 Flute Carbide Countersinks

- Solid carbide construction with steel shanks on tools 3/8" diameter and larger
- Recommended for use on abrasive, non-metallic and non-ferrous materials
- Easily resharpened
- Can be used on hardened steel and work hardening alloys
- Not recommended for use in hand held tools
- Rigid set-ups and good machinery maintenance are a must



| Dia.  | Shank Dia. | Overall Lgth. | 60°      |             | 82°      |             | 90°      |             | 100°     |             |
|-------|------------|---------------|----------|-------------|----------|-------------|----------|-------------|----------|-------------|
|       |            |               | Part No. | Price /Each | Part No. | Price /Each | Part No. | Price /Each | Part No. | Price /Each |
| 1/8   | 1/8        | 1-1/2         | 0361106  | \$9.29      | 0361107  | \$9.29      | 0361108  | \$9.29      | 0361109  | \$9.29      |
| 3/16  | 3/16       | 2             | 0361110  | 11.49       | 0361111  | 11.49       | 0361112  | 11.49       | 0361113  | 11.49       |
| 1/4   | 1/4        | 2             | 0361114  | 13.97       | 0361115  | 13.97       | 0361116  | 13.97       | 0361117  | 13.97       |
| 3/8   | 1/4        | 2-1/2         | 0361118  | 27.30       | 0361119  | 27.30       | 0361120  | 27.30       | 0361121  | 27.30       |
| 1/2   | 1/4        | 2-1/2         | 0361122  | 37.83       | 0361123  | 37.83       | 0361124  | 37.83       | 0361125  | 37.83       |
| 5/8   | 3/8        | 2-1/2         | 0361126  | 50.51       | 0361127  | 50.51       | 0361128  | 50.51       | 0361129  | 50.51       |
| 3/4   | 3/8        | 2-3/4         | 0361130  | 70.55       | 0361131  | 70.55       | 0361132  | 70.55       | 0361133  | 70.55       |
| 1     | 1/2        | 2-3/4         | 0361134  | 117.87      | 0361135  | 117.87      | 0361136  | 117.87      | 0361137  | 117.87      |
| 1-1/4 | 3/4        | 3-1/4         | 0361138  | 174.39      | 0361139  | 174.39      | 0361140  | 174.39      | 0361141  | 174.39      |

### 6 Flute Chatterless HSS Countersinks

- Six flute design for economical, general purpose countersinking, chamfering and deburring
- Steam surface treatment for longer tool life and to prevent galling
- Chatter-free machining is possible



| Dia.  | Shank Dia. | Overall Lgth. | 60°      |             | 82°      |             | 90°      |             | 100°     |             | 120°     |             |
|-------|------------|---------------|----------|-------------|----------|-------------|----------|-------------|----------|-------------|----------|-------------|
|       |            |               | Part No. | Price /Each | Part No. | Price /Each | Part No. | Price /Each | Part No. | Price /Each | Part No. | Price /Each |
| 1/8   | 1/8        | 1-1/2         | 0320713  | \$9.47      | 0320728  | \$9.47      | 0320743  | \$9.47      | 0320758  | \$9.47      | 0320771  | \$9.47      |
| 3/16  | 3/16       | 1-1/2         | 0320714  | 10.34       | 0320729  | 10.34       | 0320744  | 10.34       | 0320759  | 10.34       | 0320772  | 10.34       |
| 1/4   | 1/4        | 2             | 0320715  | 10.50       | 0320730  | 10.50       | 0320745  | 10.50       | 0320760  | 10.50       | 0320773  | 10.50       |
| 5/16  | 1/4        | 2             | 0320716  | 12.54       | 0320731  | 12.54       | 0320746  | 12.54       | 0320761  | 12.54       | 0320774  | 12.54       |
| 3/8   | 1/4        | 2             | 0320717  | 12.99       | 0320732  | 12.99       | 0320747  | 12.99       | 0320762  | 12.99       | 0320775  | 12.99       |
| 1/2   | 3/8        | 2             | 0320718  | 16.03       | 0320733  | 16.03       | 0320748  | 16.03       | 0320763  | 16.03       | 0320776  | 16.03       |
| 5/8   | 1/2        | 2-1/2         | 0320719  | 23.18       | 0320734  | 23.18       | 0320749  | 23.18       | 0320764  | 23.18       | 0320777  | 23.18       |
| 3/4   | 1/2        | 2-3/4         | 0320720  | 31.72       | 0320735  | 31.72       | 0320750  | 31.72       | 0320765  | 31.72       | 0320778  | 31.72       |
| 7/8   | 1/2        | 2-3/4         | 0320721  | 43.59       | 0320736  | 43.59       | 0320751  | 43.59       | 0320766  | 43.59       | 0320779  | 43.59       |
| 1     | 1/2        | 2-3/4         | 0320722  | 48.54       | 0320737  | 48.54       | 0320752  | 48.54       | 0320767  | 48.54       | 0320780  | 48.54       |
| 1-1/4 | 3/4        | 3-3/8         | 0320723  | 74.34       | 0320738  | 74.34       | 0320753  | 74.34       | 0320768  | 74.34       | 0320781  | 74.34       |
| 1-1/2 | 3/4        | 3-1/2         | 0320724  | 106.56      | 0320739  | 106.56      | 0320754  | 106.56      | 0320769  | 106.56      | 0320782  | 106.56      |
| 2     | 3/4        | 4-3/8         | 0320725  | 201.00      | 0320740  | 201.00      | 0320755  | 201.00      | 0320770  | 201.00      | 0320783  | 201.00      |
| 2-1/2 | 3/4        | 4-3/4         | 0320726  | 862.47      | 0320741  | 862.47      | 0320756  | 862.47      |          |             |          |             |
| 3     | 3/4        | 5             | 0320727  | 1205.84     | 0320742  | 1205.84     | 0320757  | 1205.84     |          |             |          |             |

The : symbol after a price denotes that it is a Direct Ship Product (DSP) and shipping, availability & lead times may vary.

# COUNTERSINKS

## Countersinks Cont.



Cutting Tools

### 6 Flute Chatterless Carbide Countersinks

- Solid carbide construction with steel shanks on tools 3/8" diameter and larger
- Ideal for hardened steel, high temperature alloys and other tough jobs
- Not recommended for use in hand held tools
- Rigid set-ups and good machinery maintenance are a must



| Dia.  | Shank Dia. | Overall Lgth. | 60°      |             | 82°      |             | 90°      |             | 100°     |             | 120°     |             |
|-------|------------|---------------|----------|-------------|----------|-------------|----------|-------------|----------|-------------|----------|-------------|
|       |            |               | Part No. | Price /Each | Part No. | Price /Each | Part No. | Price /Each | Part No. | Price /Each | Part No. | Price /Each |
| 1/8   | 1/8        | 1-1/2         | 0320784  | \$16.31     | 0320794  | \$16.31     | 0320804  | \$16.31     | 0320814  | \$16.31     | 0320822  | \$16.31     |
| 3/16  | 3/16       | 2             | 0320785  | 20.37       | 0320795  | 20.37       | 0320805  | 20.37       | 0320815  | 20.37       | 0320823  | 20.37       |
| 1/4   | 1/4        | 2             | 0320786  | 24.62       | 0320796  | 24.62       | 0320806  | 24.62       | 0320816  | 24.62       | 0320824  | 24.62       |
| 3/8   | 1/4        | 2-1/2         | 0320787  | 47.98       | 0320797  | 47.98       | 0320807  | 47.98       | 0320817  | 47.98       | 0320825  | 47.98       |
| 1/2   | 1/4        | 2-1/2         | 0320788  | 66.47       | 0320798  | 66.47       | 0320808  | 66.47       | 0320818  | 66.47       | 0320826  | 66.47       |
| 5/8   | 3/8        | 2-1/2         | 0320789  | 86.79       | 0320799  | 86.79       | 0320809  | 86.79       | 0320819  | 86.79       | 0320827  | 86.79       |
| 3/4   | 3/8        | 2-3/4         | 0320790  | 123.72      | 0320800  | 123.72      | 0320810  | 123.72      | 0320820  | 123.72      | 0320828  | 123.72      |
| 1     | 3/8        | 2-3/4         | 0320791  | 202.44      | 0320801  | 202.44      | 0320811  | 202.44      | 0320821  | 202.44      | 0320829  | 202.44      |
| 1-1/4 | 3/4        | 3             | 0320792  | 251.69      | 0320802  | 251.69      | 0320812  | 251.69      |          |             |          |             |
| 1-1/2 | 3/4        | 3-1/2         | 0320793  | 300.62      | 0320803  | 300.62      | 0320813  | 300.62      |          |             |          |             |

### Carbide Countersinks Sets Single / Six Flute

This set of four countersinks include 1/4", 1/2", 3/4" and 1" diameter tools. Sets are available with 60, 82, 90, 100 or 120° included angles. Tools are packaged in wood cases.



| 1 Flute Part No. | Price /Set | 6 Flute Part No. | Price /Set | Included Angle |
|------------------|------------|------------------|------------|----------------|
| 0361608          | \$231.36   | 0361613          | \$227.46   | 60°            |
| 0361609          | 231.36     | 0361614          | 227.46     | 82°            |
| 0361610          | 231.36     | 0361615          | 227.46     | 90°            |
|                  |            | 0361616          | 227.46     | 100°           |
| 0361612          | 231.36     | 0361617          | 227.46     | 120°           |

### HSS Countersinks Sets Single / Six Flute

This set of four countersinks include 1/4", 1/2", 3/4" and 1" diameter tools. Sets are available with 60, 82, 90, 100 or 120° included angles. Tools are packaged in wood cases.



| 1 Flute Part No. | Price /Set | 6 Flute Part No. | Price /Set | Included Angle |
|------------------|------------|------------------|------------|----------------|
| 0320680          | \$118.78   | 0361603          | \$80.83    | 60°            |
| 0320681          | 118.78     | 0361604          | 80.83      | 82°            |
| 0320682          | 118.78     | 0361605          | 80.83      | 90°            |
| 0320683          | 118.78     | 0361606          | 80.83      | 100°           |
| 0320684          | 118.78     | 0361607          | 80.83      | 120°           |



### Combined Drills & Countersinks - Plain Type

KEO plain type combined drills and countersinks are used for producing center holes in components or workpieces which require machining between centers.



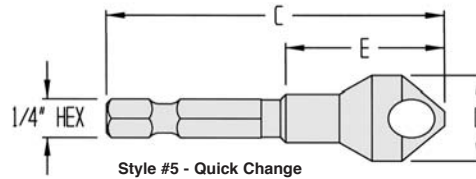
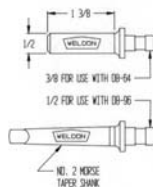
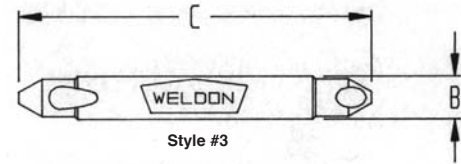
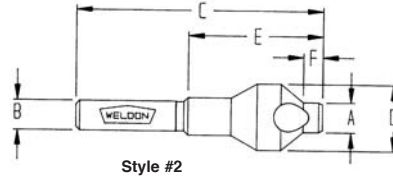
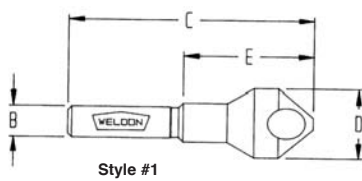
| Part No. | Set                         | Price   |
|----------|-----------------------------|---------|
| 7000052  | #s 1-5 CD & Countersink set | \$31.59 |

| Part No. | Body Dia. | Point Dia. | Point Size | Overall Lgth. | Price /Each |
|----------|-----------|------------|------------|---------------|-------------|
| 7000053  | 1/8       | 0.01       | 0.01       | 1-1/4         | \$—         |
| 7000054  | 1/8       | 0.015      | 0.015      | 1-1/4         | —           |
| 7000055  | 1/8       | 0.02       | 0.02       | 1-1/4         | —           |
| 7000056  | 1/8       | 0.025      | 0.025      | 1-1/4         | 5.28        |
| 7000057  | 1/8       | 1/32       | 1/32       | 1-1/4         | 5.28        |
| 7000058  | 1/8       | 3/64       | 3/64       | 1-1/4         | 3.68        |
| 7000059  | 3/16      | 5/64       | 5/64       | 1-7/8         | 3.85        |
| 7000060  | 1/4       | 7/64       | 7/64       | 2             | 4.02        |
| 7000061  | 5/16      | 1/8        | 1/8        | 1-1/8         | 4.13        |
| 7000062  | 3/8       | 9/64       | 9/64       | 2-1/2         | —           |
| 7000063  | 7/16      | 3/16       | 3/16       | 2-3/4         | 6.55        |
| 7000064  | 1/2       | 7/32       | 7/32       | 3             | 9.86        |
| 7000065  | 5/8       | 1/4        | 1/4        | 3-1/4         | 14.96       |
| 7000066  | 3/4       | 5/16       | 5/16       | 3-1/2         | 20.55       |
| 7000067  | 7/8       | 11/32      | 11/32      | 3-5/8         | 37.29       |
| 7000068  | 1         | 3/8        | 3/8        | 3-3/4         | 48.94       |

## Countersinks Cont.



### Countersinks and Deburring Tools



| Part No. | Vendor No. | Style | Min. Dia. | Max. Dia. | Screw Size      | A     | B       | C       | D      | E      | F    | Price /Each |
|----------|------------|-------|-----------|-----------|-----------------|-------|---------|---------|--------|--------|------|-------------|
| 7000034  | DC-6       | 3     | 3/32      | 11/64     |                 |       | 3/16    | 1-1/2   |        |        |      | \$9.33:     |
| 7000019  | DC-8       | 3     | 1/8       | 15/64     |                 |       | 1/4     | 1-3/4   |        |        |      | 9.81:       |
| 7000020  | DC-14      | 1     | 3/16      | 13/32     |                 |       | 1/4     | 1-3/4   | 7/16   | 7/8    |      | 11.13:      |
| 7000018  | DC-18      | 1     | 5/16      | 17/32     |                 |       | 1/4     | 1-15/16 | 9/16   | 1-1/16 |      | 13.83:      |
| 7000000  | DC-26      | 1     | 7/16      | 25/32     |                 |       | 1/2     | 2-11/16 | 13/16  | 1-7/16 |      | 23.94:      |
| 7000031  | DC-26A     | 1     | 7/16      | 25/32     |                 |       | 1/4     | 2-1/8   | 13/16  | 1-1/4  |      | 23.94:      |
| 7000011  | DC-36      | 1     | 11/16     | 1-3/32    |                 |       | 1/2     | 2-7/8   | 1-1/8  | 1-5/8  |      | 40.82:      |
| 7000039  | CS8-1      | 2     |           |           | 1/4             | 1/4   | 3/8     | 2       | 33/64  | 1      | 5/32 | 14.94:      |
| 7000040  | CS8-2      | 2     |           |           | 1/4             | 17/64 | 3/8     | 2       | 33/64  | 1      | 5/32 | 14.94:      |
| 7000037  | CS10-1     | 2     |           |           | 5/16            | 5/16  | 3/8     | 2-3/16  | 41/64  | 1-3/16 | 5/32 | 17.85:      |
| 7000038  | CS10-2     | 2     |           |           | 5/16            | 21/64 | 3/8     | 2-3/16  | 41/64  | 1-3/16 | 5/32 | 17.85:      |
| 7000009  | CS12-1     | 2     |           |           | 3/8             | 3/8   | 1/2     | 2-5/8   | 49/64  | 1-3/8  | 5/32 | 23.69:      |
| 7000010  | CS12-2     | 2     |           |           | 3/8             | 25/64 | 1/2     | 2-5/8   | 49/64  | 1-3/8  | 5/32 | 23.69:      |
| 7000007  | CS14-1     | 2     |           |           | 7/16            | 7/16  | 1/2     | 2-3/4   | 53/64  | 1-1/2  | 7/32 | 29.48:      |
| 7000004  | CS14-2     | 2     |           |           | 7/16            | 29/64 | 1/2     | 2-3/4   | 53/64  | 1-1/2  | 7/32 | 29.48:      |
| 7000003  | CS16-1     | 2     |           |           | 1/2             | 1/2   | 1/2     | 2-13/16 | 15/16  | 1-9/16 | 1/4  | 30.64:      |
| 7000005  | CS16-2     | 2     |           |           | 1/2             | 33/64 | 1/2     | 2-13/16 | 15/16  | 1-9/16 | 1/4  | 30.64:      |
| 7000021  | CS-3S      | 3     | 5/64      | 15/64     |                 |       | 1/4     | 1-3/4   |        |        |      | 10.30:      |
| 7000026  | CS-18      | 1     | 3/16      | 17/32     |                 |       | 1/4     | 1-7/8   | 9/16   | 1      |      | 12.89:      |
| 7000008  | CS-26      | 1     | 5/16      | 25/32     |                 |       | 1/2     | 2-5/8   | 13/16  | 1-3/8  |      | 22.37:      |
| 7000028  | CS-26A     | 1     | 5/16      | 25/32     |                 |       | 1/4     | 2-1/16  | 13/16  | 1-1/4  |      | 22.37:      |
| 7000002  | CS-36      | 1     | 7/16      | 7/8       |                 |       | 1/2     | 2-13/16 | 1-1/8  | 1-9/16 |      | 38.01:      |
| 7000012  | CS-48      | 1     | 1/2       | 1-15/32   |                 |       | 1/2     | 3-1/2   | 1-1/2  | 2-1/8  |      | 86.75:      |
| 7000015  | CS-5S      | 1     |           |           | Nos. 4, 5       |       | 1/4     | 1-1/2   | 17/64  | 5/8    |      | 7.43:       |
| 7000029  | CS-6S      | 1     |           |           | No. 6           |       | 1/4     | 1-1/2   | 19/64  | 5/8    |      | 7.84:       |
| 7000024  | CS-8S      | 1     |           |           | No. 8           |       | 1/4     | 1-5/8   | 11/32  | 3/4    |      | 8.35:       |
| 7000023  | CS-10S     | 1     |           |           | No. 10          |       | 1/4     | 1-5/8   | 25/64  | 3/4    |      | 9.80:       |
| 7000049  | CS-3SH     | 5     | 5/64      | 15/64     | Nos. 2, 3, 4    | Hex   | 1-27/32 | 1/4     |        |        |      | 8.35:       |
| 7000050  | CS-8SH     | 5     | 1/8       | 11/32     | Nos. 5, 6, 8    | Hex   | 2       | 11/32   | 3/4    |        |      | 8.35:       |
| 7000051  | CS-18H     | 5     | 3/16      | 17/32     | Nos. 10, 12, 14 | Hex   | 2-15/16 | 9/16    | 1-1/16 |        |      | 12.89:      |
| 7000035  | DB-4       | 3     | 1/64      | 11/64     |                 |       | 3/16    | 1-1/2   |        |        |      | 16.45:      |
| 7000036  | DB-6       | 3     | 1/16      | 11/64     |                 |       | 3/16    | 1-1/2   |        |        |      | 8.62:       |
| 7000022  | DB-8       | 3     | 1/8       | 15/64     |                 |       | 1/4     | 1-3/4   |        |        |      | 9.06:       |
| 7000017  | DB-14      | 1     | 5/32      | 13/32     |                 |       | 1/4     | 1-11/16 | 7/16   | 13/16  |      | 10.26:      |
| 7000027  | DB-18      | 1     | 3/16      | 17/32     |                 |       | 1/4     | 1-7/8   | 9/16   | 1      |      | 12.68:      |
| 7000006  | DB-26      | 1     | 5/16      | 25/32     |                 |       | 1/2     | 2-19/32 | 13/16  | 1-3/8  |      | 22.06:      |
| 7000030  | DB-26A     | 1     | 5/16      | 25/32     |                 |       | 1/4     | 2-1/32  | 13/16  | 1-5/32 |      | 22.06:      |
| 7000001  | DB-36      | 1     | 9/16      | 1-3/32    |                 |       | 1/2     | 2-13/16 | 1-1/8  | 1-9/16 |      | 37.65:      |
| 7000013  | DB-48      | 1     | 1/2       | 1-15/32   |                 |       | 1/2     | 3-1/2   | 1-1/2  | 2-1/8  |      | 86.82:      |
| 7000032  | DB-64      | 4     | 1-1/16    | 2         |                 |       |         |         | 2-1/8  | 7/8    |      | 152.92:     |
| 7000033  | DB-96      | 4     | 2         | 3         |                 |       |         |         | 3-1/8  | 1      |      | 202.61:     |
| 7000014  | CSA-8      | 1     | 3/32      | 1/4       |                 |       | 1/4     | 1-1/2   | 17/64  | 5/8    |      | 7.43:       |
| 7000016  | CSA-14     | 1     | 1/8       | 27/64     |                 |       | 1/4     | 1-11/16 | 7/16   | 13/16  |      | 10.30:      |
| 7000025  | CSA-18     | 1     | 3/16      | 35/64     |                 |       | 1/4     | 1-7/8   | 9/16   | 1      |      | 13.21:      |

### Solid Carbide Countersink Sets Single Flute/Six Flute

This set of countersinks includes 1/4", 1/2", 3/4", and 1" diameter tools. Sets are available with 60, 82, 90, 100, or 120° included angles. Tools are packaged in wood cases.



7000041

| Part No. | Vendor No. | Description  | Price /Each |
|----------|------------|--|-------------|
| 7000041  | 60DB       | This 60° set consists of six tools: DC-6, DC-8, DC-14, DC-18, DC-26, and DC-36                                 | \$108.86:   |
| 7000046  | 1C         | This 82° 1C set consists of nine tools: CS-5S, CS-6S, CS-8S, CS-10S, CS8-1, CS10-1, CS12-1, CS14-1, and CS16-1 | 150.00:     |
| 7000047  | 2C         | This 82° 2C set consists of nine tools: CS-5S, CS-6S, CS-8S, CS-10S, CS8-2, CS10-2, CS12-2, CS14-2, and CS16-2 | 155.85:     |
| 7000044  | WC-SET     | This 82° WC set consists of four tools: CS-5S, CS-6S, CS-8S, and CS-10S  | 35.60:      |
| 7000043  | GC-SET     | This 82° GC set consists of four tools: CS-6S, CS-8S, CS-10S, and CS-18  | 44.14:      |
| 7000045  | WCG-SET    | This 82° WCG set consists of five tools: CS-5S, CS-6S, CS-8S, CS-10S, and CS-18                                | 48.51:      |

### Quick Change Hex Shank Countersinks

- Quick Change Hex Shank - for all hand and power drills, milling machines, and drill presses.
- Countersink all materials - plastic, wood, and metal. Made in USA.



| Part No. | Vendor No. | Description  | Price /Each |
|----------|------------|--|-------------|
| 7000042  | CSH-SET    | This 82° set consists of three tools: CS-3SH, CS-8SH, and CS-18H | 29.59       |



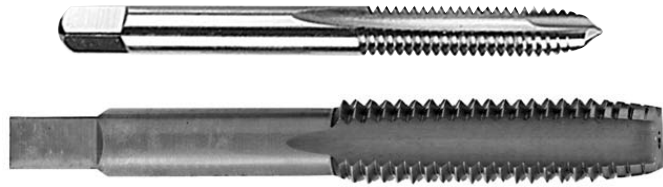
# TAPS

## Taps

# FASTENAL

### Fastenal Premium Taps (Standard)

- General Purpose tap used either by hand or on production machines
- Precision ground for a variety of applications
- Designed to provide sufficient chip room and cutting edges to handle most threading jobs



Cutting Tools

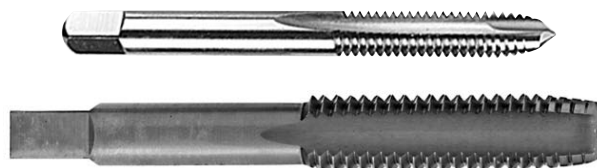
| Size     | Pkg. Qty. | Spiral Point Plug Style |         |        |        | Taper Style |         |        |        | Plug Style |         |        |        | Bottoming Style |         |        |        |
|----------|-----------|-------------------------|---------|--------|--------|-------------|---------|--------|--------|------------|---------|--------|--------|-----------------|---------|--------|--------|
|          |           | Part No.                | H Limit | Flutes | Price  | Part No.    | H Limit | Flutes | Price  | Part No.   | H Limit | Flutes | Price  | Part No.        | H Limit | Flutes | Price  |
| 0-80     | 1         | 0326649                 | H1      | 2      | \$9.00 | 0326684     | H1      | 2      | \$8.74 | 0326732    | H1      | 2      | \$8.74 | 0326780         | H1      | 2      | \$8.74 |
| 1-64     | 1         | 0326650                 | H1      | 2      | 8.91   | 0326685     | H1      | 2      | 8.63   | 0326733    | H1      | 2      | 8.63   | 0326781         | H1      | 2      | 8.63   |
| 1-72     | 1         | 0326651                 | H1      | 2      | 8.80   | 0326686     | H1      | 2      | 8.52   | 0326734    | H1      | 2      | 8.52   | 0326782         | H1      | 2      | 8.52   |
| 2-56     | 1         | 0326652                 | H2      | 3      | 8.47   | 0326687     | H2      | 3      | 8.19   | 0326735    | H2      | 3      | 8.19   | 0326783         | H2      | 3      | 8.19   |
| 2-64     | 1         | 0326653                 | H2      | 3      | 8.47   | 0326688     | H2      | 3      | 8.19   | 0326736    | H2      | 3      | 8.19   | 0326784         | H2      | 3      | 8.19   |
| 3-48     | 1         | 0326654                 | H2      | 3      | 7.92   | 0326689     | H2      | 3      | 7.65   | 0326737    | H2      | 3      | 7.65   | 0326785         | H2      | 3      | 7.65   |
| 3-56     | 1         | 0326655                 | H2      | 3      | 7.92   | 0326690     | H2      | 3      | 7.65   | 0326738    | H2      | 3      | 7.65   | 0326786         | H2      | 3      | 7.65   |
| 4-40     | 1         | 0326656                 | H2      | 2      | 7.38   | 0326691     | H2      | 3      | 7.11   | 0326739    | H2      | 3      | 7.11   | 0326787         | H2      | 3      | 7.11   |
| 4-48     | 1         | 0326657                 | H2      | 2      | 7.38   | 0326692     | H2      | 3      | 7.11   | 0326740    | H2      | 3      | 7.11   | 0326788         | H2      | 3      | 7.11   |
| 5-40     | 1         | 0326658                 | H2      | 2      | 7.11   | 0326693     | H2      | 3      | 6.83   | 0326741    | H2      | 3      | 6.83   | 0326789         | H2      | 3      | 6.83   |
| 5-44     | 1         | 0326659                 | H2      | 2      | 7.11   | 0326694     | H2      | 3      | 6.83   | 0326742    | H2      | 3      | 6.83   | 0326790         | H2      | 3      | 6.83   |
| 6-32     | 1         | 0326660                 | H3      | 2      | 4.31   | 0326695     | H3      | 3      | 4.22   | 0326743    | H3      | 3      | 4.22   | 0326791         | H3      | 3      | 4.22   |
| 6-40     | 1         | 0326661                 | H2      | 2      | 4.48   | 0326696     | H2      | 3      | 4.27   | 0326744    | H2      | 3      | 4.27   | 0326792         | H2      | 3      | 4.27   |
| 8-32     | 1         | 0326662                 | H3      | 2      | 4.40   | 0326697     | H3      | 4      | 4.32   | 0326745    | H3      | 4      | 4.32   | 0326793         | H3      | 4      | 4.32   |
| 8-36     | 1         | 0326663                 | H2      | 2      | 4.59   | 0326698     | H2      | 4      | 4.38   | 0326746    | H2      | 4      | 4.38   | 0326794         | H2      | 4      | 4.38   |
| 10-24    | 1         | 0326664                 | H3      | 2      | 4.51   | 0326699     | H3      | 4      | 4.44   | 0326747    | H3      | 4      | 4.44   | 0326795         | H3      | 4      | 4.44   |
| 10-32    | 1         | 0326665                 | H3      | 2      | 4.62   | 0326700     | H3      | 4      | 4.48   | 0326748    | H3      | 4      | 4.48   | 0326796         | H3      | 4      | 4.48   |
| 12-24    | 1         | 0326666                 | H3      | 2      | 4.76   | 0326701     | H3      | 4      | 4.55   | 0326749    | H3      | 4      | 4.55   | 0326797         | H3      | 4      | 4.55   |
| 12-28    | 1         | 0326667                 | H3      | 2      | 4.81   | 0326702     | H3      | 4      | 4.59   | 0326750    | H3      | 4      | 4.59   | 0326798         | H3      | 4      | 4.59   |
| 1/4"-20  | 1         | 0326668                 | H3      | 2      | 4.77   | 0326703     | H3      | 4      | 4.65   | 0326751    | H3      | 4      | 4.65   | 0326799         | H3      | 4      | 4.65   |
| 1/4"-28  | 1         | 0326669                 | H3      | 2      | 4.89   | 0326704     | H3      | 4      | 4.71   | 0326752    | H3      | 4      | 4.71   | 0326800         | H3      | 4      | 4.71   |
| 5/16"-18 | 1         | 0326670                 | H3      | 2      | 5.04   | 0326705     | H3      | 4      | 4.81   | 0326753    | H3      | 4      | 4.81   | 0326801         | H3      | 4      | 4.81   |
| 5/16"-24 | 1         | 0326671                 | H3      | 2      | 5.19   | 0326706     | H3      | 4      | 4.92   | 0326754    | H3      | 4      | 4.92   | 0326802         | H3      | 4      | 4.92   |
| 3/8"-16  | 1         | 0326672                 | H3      | 3      | 5.30   | 0326707     | H3      | 4      | 5.14   | 0326755    | H3      | 4      | 5.14   | 0326803         | H3      | 4      | 5.14   |
| 3/8"-24  | 1         | 0326673                 | H3      | 3      | 5.42   | 0326708     | H3      | 4      | 5.30   | 0326756    | H3      | 4      | 5.30   | 0326804         | H3      | 4      | 5.30   |
| 7/16"-14 | 1         | 0326674                 | H3      | 3      | 10.07  | 0326709     | H3      | 4      | 9.95   | 0326757    | H3      | 4      | 9.95   | 0326805         | H3      | 4      | 9.95   |
| 7/16"-20 | 1         | 0326675                 | H3      | 3      | 10.19  | 0326710     | H3      | 4      | 10.14  | 0326758    | H3      | 4      | 10.14  | 0326806         | H3      | 4      | 10.14  |
| 1/2"-13  | 1         | 0326676                 | H3      | 3      | 10.59  | 0326711     | H3      | 4      | 10.27  | 0326759    | H3      | 4      | 10.27  | 0326807         | H3      | 4      | 10.27  |
| 1/2"-20  | 1         | 0326677                 | H3      | 3      | 10.71  | 0326712     | H3      | 4      | 10.50  | 0326760    | H3      | 4      | 10.50  | 0326808         | H3      | 4      | 10.50  |
| 9/16-12  | 1         | 0326678                 | H3      | 3      | 15.62  | 0326713     | H3      | 4      | 15.13  | 0326761    | H3      | 4      | 15.13  | 0326809         | H3      | 4      | 15.13  |
| 9/16-18  | 1         | 0326679                 | H3      | 3      | 15.79  | 0326714     | H3      | 4      | 15.30  | 0326762    | H3      | 4      | 15.30  | 0326810         | H3      | 4      | 15.30  |
| 5/8-11   | 1         | 0326680                 | H3      | 3      | 18.84  | 0326715     | H3      | 4      | 17.19  | 0326763    | H3      | 4      | 17.19  | 0326811         | H3      | 4      | 17.19  |
| 5/8-18   | 1         | 0326681                 | H3      | 3      | 19.11  | 0326716     | H3      | 4      | 17.47  | 0326764    | H3      | 4      | 17.47  | 0326812         | H3      | 4      | 17.47  |
| 3/4-10   | 1         | 0326682                 | H3      | 3      | 25.66  | 0326717     | H3      | 4      | 24.02  | 0326765    | H3      | 4      | 24.02  | 0326813         | H3      | 4      | 24.02  |
| 3/4-16   | 1         | 0326683                 | H3      | 3      | 25.89  | 0326718     | H3      | 4      | 24.57  | 0326766    | H3      | 4      | 24.57  | 0326814         | H3      | 4      | 24.57  |
| 7/8-9    | 1         | 0326928                 | H3      | 3      | 42.24  | 0326719     | H4      | 4      | 32.66  | 0326767    | H4      | 4      | 32.66  | 0326815         | H4      | 4      | 32.66  |
| 7/8-14   | 1         | 0326929                 | H3      | 3      | 42.67  | 0326720     | H4      | 4      | 33.07  | 0326768    | H4      | 4      | 33.07  | 0326816         | H4      | 4      | 33.07  |
| 1-8      | 1         |                         |         |        |        | 0326721     | H4      | 4      | 43.13  | 0326769    | H4      | 4      | 43.13  | 0326817         | H4      | 4      | 43.13  |
| 1-12     | 1         |                         |         |        |        | 0326722     | H4      | 4      | 43.41  | 0326770    | H4      | 4      | 43.41  | 0326818         | H4      | 4      | 43.41  |
| 1-14     | 1         |                         |         |        |        | 0326723     | H4      | 4      | 43.57  | 0326771    | H4      | 4      | 43.57  | 0326819         | H4      | 4      | 43.57  |
| 1-1/8-7  | 1         |                         |         |        |        | 0326724     | H4      | 4      | 62.78  | 0326772    | H4      | 4      | 62.78  | 0326820         | H4      | 4      | 62.78  |
| 1-1/8-12 | 1         |                         |         |        |        | 0326725     | H4      | 4      | 63.39  | 0326773    | H4      | 4      | 63.39  | 0326821         | H4      | 4      | 63.39  |
| 1-1/4-7  | 1         |                         |         |        |        | 0326726     | H4      | 4      | 76.33  | 0326774    | H4      | 4      | 76.33  | 0326822         | H4      | 4      | 76.33  |
| 1-1/4-12 | 1         |                         |         |        |        | 0326727     | H4      | 6      | 76.97  | 0326775    | H4      | 6      | 76.97  | 0326823         | H4      | 6      | 76.97  |
| 1-3/8-6  | 1         |                         |         |        |        | 0326728     | H4      | 4      | 102.53 | 0326776    | H4      | 4      | 102.53 | 0326824         | H4      | 4      | 102.53 |
| 1-3/8-12 | 1         |                         |         |        |        | 0326729     | H4      | 6      | 103.09 | 0326777    | H4      | 6      | 103.09 | 0326825         | H4      | 6      | 103.09 |
| 1-1/2-6  | 1         |                         |         |        |        | 0326730     | H4      | 4      | 115.69 | 0326778    | H4      | 4      | 115.69 | 0326826         | H4      | 4      | 115.69 |
| 1-1/2-12 | 1         |                         |         |        |        | 0326731     | H4      | 6      | 116.59 | 0326779    | H4      | 6      | 116.59 | 0326827         | H4      | 6      | 116.59 |

## Taps Cont.

# FASTENAL

## Fastenal Premium Taps (Metric)

- General purpose tap used either by hand or on production machines
- Precision ground for a wide variety of applications
- Designed to provide sufficient chip room and cutting edges to handle most threading jobs

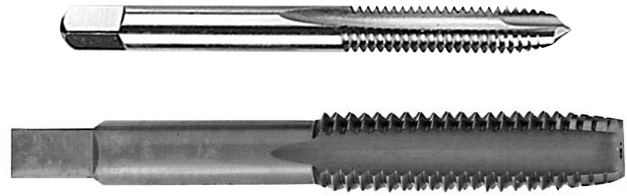


| Size     | Pkg. Qty. | Spiral Point Plug Style |         |        |             | Taper Style |         |        |             | Plug Style |         |        |             | Bottoming Style |         |        |             |
|----------|-----------|-------------------------|---------|--------|-------------|-------------|---------|--------|-------------|------------|---------|--------|-------------|-----------------|---------|--------|-------------|
|          |           | Part No.                | D Limit | Flutes | Price /Each | Part No.    | D Limit | Flutes | Price /Each | Part No.   | D Limit | Flutes | Price /Each | Part No.        | D Limit | Flutes | Price /Each |
| 3-0.5    | 1         | 0326828                 | D3      | 2      | \$7.39      | 0326850     | D3      | 3      | \$7.39      | 0326876    | D3      | 3      | \$7.39      | 0326902         | D3      | 3      | \$7.39      |
| 4-0.7    | 1         | 0326829                 | D4      | 2      | 7.16        | 0326851     | D4      | 4      | 7.16        | 0326877    | D4      | 4      | 7.16        | 0326903         | D4      | 4      | 7.16        |
| 4.5-0.75 | 1         | 0326830                 | D4      | 2      | 7.65        | 0326852     | D4      | 4      | 7.28        | 0326878    | D4      | 4      | 7.28        | 0326904         | D4      | 4      | 7.28        |
| 5-0.8    | 1         | 0326831                 | D4      | 2      | 7.10        | 0326853     | D4      | 4      | 7.24        | 0326879    | D4      | 4      | 7.24        | 0326905         | D4      | 4      | 7.24        |
| 5.5-0.9  | 1         | 0326832                 | D3      | 2      | 7.14        | 0326854     | D3      | 4      | 7.32        | 0326880    | D3      | 4      | 7.32        | 0326906         | D3      | 4      | 7.32        |
| 6-1.0    | 1         | 0326833                 | D3      | 2      | 7.28        | 0326855     | D5      | 4      | 7.41        | 0326881    | D5      | 4      | 7.41        | 0326907         | D5      | 4      | 7.41        |
| 7-1.0    | 1         | 0326834                 | D5      | 2      | 7.59        | 0326856     | D5      | 4      | 7.66        | 0326882    | D5      | 4      | 7.66        | 0326908         | D5      | 4      | 7.66        |
| 8-1.0    | 1         | 0326835                 | D5      | 2      | 8.19        | 0326857     | D5      | 4      | 8.19        | 0326883    | D5      | 4      | 8.19        | 0326909         | D5      | 4      | 8.19        |
| 8-1.25   | 1         | 0326836                 | D5      | 2      | 8.31        | 0326858     | D5      | 4      | 8.43        | 0326884    | D5      | 4      | 8.39        | 0326910         | D5      | 4      | 8.43        |
| 10-1.0   | 1         | 0326837                 | D5      | 2      | 8.87        | 0326859     | D5      | 4      | 10.10       | 0326885    | D5      | 4      | 9.00        | 0326911         | D5      | 4      | 9.00        |
| 10-1.25  | 1         | 0326838                 | D5      | 3      | 8.99        | 0326860     | D5      | 4      | 10.23       | 0326886    | D5      | 4      | 9.11        | 0326912         | D5      | 4      | 10.23       |
| 10-1.5   | 1         | 0326839                 | D6      | 3      | 9.34        | 0326861     | D6      | 4      | 10.36       | 0326887    | D6      | 4      | 9.22        | 0326913         | D6      | 4      | 10.36       |
| 12-1.25  | 1         | 0326840                 | D5      | 3      | 13.13       | 0326862     | D5      | 4      | 15.84       | 0326888    | D5      | 4      | 14.74       | 0326914         | D5      | 4      | 15.84       |
| 12-1.5   | 1         | 0326841                 | D5      | 3      | 13.28       | 0326863     | D5      | 4      | 15.98       | 0326889    | D5      | 4      | 14.86       | 0326915         | D5      | 4      | 15.98       |
| 12-1.75  | 1         | 0326842                 | D6      | 3      | 13.42       | 0326864     | D6      | 4      | 16.12       | 0326890    | D6      | 4      | 14.98       | 0326916         | D6      | 4      | 16.12       |
| 14-1.25  | 1         | 0326843                 | D5      | 3      | 15.69       | 0326865     | D5      | 4      | 18.45       | 0326891    | D5      | 4      | 18.45       | 0326917         | D5      | 4      | 18.45       |
| 14-1.5   | 1         | 0326844                 | D6      | 3      | 15.81       | 0326866     | D6      | 4      | 18.64       | 0326892    | D6      | 4      | 18.59       | 0326918         | D6      | 4      | 18.64       |
| 14-2.0   | 1         | 0326845                 | D7      | 3      | 15.93       | 0326867     | D7      | 4      | 18.83       | 0326893    | D7      | 4      | 18.74       | 0326919         | D7      | 4      | 18.83       |
| 16-1.5   | 1         | 0326846                 | D6      | 3      | 18.77       | 0326868     | D6      | 4      | 23.93       | 0326894    | D6      | 4      | 23.93       | 0326920         | D6      | 4      | 23.93       |
| 16-2.0   | 1         | 0326847                 | D7      | 3      | 18.98       | 0326869     | D7      | 4      | 24.23       | 0326895    | D7      | 4      | 24.19       | 0326921         | D7      | 4      | 24.23       |
| 18-1.0   | 1         | 0326848                 | D5      | 3      | 23.72       | 0326870     | D5      | 4      | 34.84       | 0326896    | D5      | 4      | 34.84       | 0326922         | D5      | 4      | 34.84       |
| 18-1.5   | 1         | 0326849                 | D6      | 3      | 23.99       | 0326871     | D6      | 4      | 35.11       | 0326897    | D6      | 4      | 35.05       | 0326923         | D6      | 4      | 35.11       |
| 18-2.5   | 1         |                         |         |        |             | 0326872     | D7      | 4      | 35.36       | 0326898    | D7      | 4      | 35.26       | 0326924         | D7      | 4      | 35.36       |
| 20-2.5   | 1         | 0326930                 | D7      | 3      | 35.37       | 0326873     | D7      | 4      | 38.76       | 0326899    | D7      | 4      | 38.76       | 0326925         | D7      | 4      | 38.76       |
| 22-2.5   | 1         | 0326931                 | D7      | 4      | 40.60       | 0326874     | D7      | 4      | 43.57       | 0326900    | D7      | 4      | 43.57       | 0326926         | D7      | 4      | 43.57       |
| 24-3.0   | 1         |                         |         |        |             | 0326875     | D8      | 4      | 46.40       | 0326901    | D8      | 4      | 46.40       | 0326927         | D8      | 4      | 46.40       |





**CLEVELAND  
TWIST DRILL**



### General Purpose Taps (Standard)

- General-purpose tap used either by hand or on production machines
- Precision ground for a wide variety of applications
- Proper number of flutes to provide sufficient chip room and cutting edges to handle most threading jobs

| Size     | Taper    |         |        |             | Plug     |         |        |             | Bottom   |         |        |             | Spiral Point Plug |         |        |             | Set      |         |        |             |
|----------|----------|---------|--------|-------------|----------|---------|--------|-------------|----------|---------|--------|-------------|-------------------|---------|--------|-------------|----------|---------|--------|-------------|
|          | Part No. | H Limit | Flutes | Price /Each | Part No. | H Limit | Flutes | Price /Each | Part No. | H Limit | Flutes | Price /Each | Part No.          | H Limit | Flutes | Price /Each | Part No. | H Limit | Flutes | Price /Each |
| 0-80     |          |         |        |             |          |         |        |             |          |         |        |             | 7002515           | H2      | 2      | \$15.73     |          |         |        |             |
| 1-64     |          |         |        |             |          |         |        |             |          |         |        |             | 7002519           | H2      | 2      | 14.22       |          |         |        |             |
| 1-72     |          |         |        |             |          |         |        |             |          |         |        |             | 7002521           | H2      | 2      | 14.22       |          |         |        |             |
| 2-56     |          |         |        |             |          |         |        |             |          |         |        |             | 7002524           | H2      | 2      | 12.08       |          |         |        |             |
| 2-64     |          |         |        |             |          |         |        |             |          |         |        |             | 7002525           | H2      | 2      | 13.63       |          |         |        |             |
| 3-48     | 7002237  | H2      | 3      | \$7.87      | 7002238  | H2      | 3      | \$7.87      | 7002239  | H2      | 3      | \$7.87      | 7002527           | H2      | 2      | 9.70        | 7002240  | H2      | 3      | \$23.91     |
| 3-56     | 7002241  | H2      | 3      | 8.85        | 7002242  | H2      | 3      | 8.85        | 7002243  | H2      | 3      | 8.85        | 7002529           | H2      | 2      | 10.78       | 7002244  | H2      | 3      | 26.73       |
| 4-40     | 7002252  | H2      | 3      | 6.46        | 7002253  | H2      | 3      | 6.46        | 7002254  | H2      | 3      | 6.46        | 7002533           | H2      | 2      | 7.76        | 7002255  | H2      | 3      | 19.57       |
| 6-32     | 7002264  | H3      | 3      | 5.00        | 7002265  | H3      | 3      | 5.00        | 7002266  | H3      | 3      | 5.00        | 7002536           | H3      | 2      | 6.53        | 7002267  | H3      | 3      | 15.08       |
| 8-32     | 7002275  | H3      | 4      | 5.24        | 7002276  | H3      | 4      | 5.24        | 7002277  | H3      | 4      | 5.15        | 7002538           | H3      | 2      | 6.53        | 7002278  | H3      | 4      | 15.51       |
| 10-24    | 7002286  | H3      | 4      | 5.24        | 7002287  | H3      | 4      | 5.24        | 7002288  | H3      | 4      | 5.24        | 7002540           | H3      | 2      | 6.53        | 7002289  | H3      | 4      | 15.91       |
| 10-32    | 7002294  | H3      | 4      | 5.24        | 7002295  | H3      | 4      | 5.24        | 7002296  | H3      | 4      | 5.24        | 7002541           | H3      | 2      | 6.53        | 7002297  | H3      | 4      | 15.91       |
| 12-24    | 7002301  | H3      | 4      | 6.07        | 7002302  | H3      | 4      | 5.58        | 7002303  | H3      | 4      | 5.58        | 7002543           | H3      | 2      | 7.40        | 7002304  | H3      | 4      | 16.81       |
| 12-28    | 7002305  | H3      | 4      | 6.07        | 7002306  | H3      | 4      | 6.07        | 7002307  | H3      | 4      | 6.07        | 7002544           | H3      | 2      | 7.40        | 7002308  | H3      | 4      | 18.41       |
| 1/4-20   | 7002312  | H3      | 4      | 5.70        | 7002313  | H3      | 4      | 5.70        | 7002314  | H3      | 4      | 5.70        | 7002547           | H3      | 3      | 8.42        | 7002319  | H3      | 4      | 17.15       |
| 1/4-28   | 7002320  | H3      | 4      | 5.70        | 7002321  | H3      | 4      | 5.70        | 7002322  | H3      | 4      | 5.70        | 7002548           | H3      | 2      | 6.53        | 7002327  | H3      | 4      | 17.15       |
| 5/16-18  | 7002331  | H3      | 4      | 6.95        | 7002332  | H3      | 4      | 6.95        | 7002333  | H3      | 4      | 6.95        | 7002551           | H3      | 3      | 9.27        | 7002338  | H3      | 4      | 21.06       |
| 5/16-24  | 7002339  | H3      | 4      | 6.95        | 7002340  | H3      | 4      | 6.95        | 7002341  | H3      | 4      | 6.95        | 7002552           | H3      | 2      | 7.07        | 7002344  | H3      | 4      | 21.06       |
| 3/8-16   | 7002351  | H3      | 4      | 7.88        | 7002352  | H3      | 4      | 7.88        | 7002353  | H3      | 4      | 7.88        | 7002555           | H3      | 3      | 8.39        | 7002356  | H3      | 4      | 23.88       |
| 3/8-24   | 7002357  | H3      | 4      | 7.88        | 7002358  | H3      | 4      | 7.88        | 7002359  | H3      | 4      | 7.88        | 7002556           | H3      | 3      | 8.98        | 7002362  | H3      | 4      | 23.88       |
| 7/16-24  | 7002369  | H3      | 4      | 13.52       | 7002370  | H3      | 4      | 13.52       | 7002371  | H3      | 4      | 13.52       | 7002559           | H3      | 3      | 14.15       | 7002373  | H3      | 4      | 44.73       |
| 7/16-20  | 7002374  | H3      | 4      | 13.52       | 7002375  | H3      | 4      | 13.52       | 7002376  | H3      | 4      | 13.52       | 7002560           | H3      | 3      | 14.15       | 7002378  | H3      | 4      | 44.73       |
| 1/2-13   | 7002385  | H3      | 4      | 14.16       | 7002386  | H3      | 4      | 14.16       | 7002387  | H3      | 4      | 14.16       | 7002563           | H3      | 3      | 14.44       | 7002390  | H3      | 4      | 42.82       |
| 1/2-20   | 7002391  | H3      | 4      | 15.98       | 7002392  | H3      | 4      | 15.98       | 7002393  | H3      | 4      | 15.98       | 7002564           | H3      | 3      | 16.88       | 7002395  | H3      | 4      | 48.34       |
| 9/16-12  | 7002402  | H3      | 4      | 24.14       | 7002403  | H3      | 4      | 24.14       | 7002404  | H3      | 4      | 24.14       |                   |         |        |             | 7002405  | H3      | 4      | 73.08       |
| 9/16-18  | 7002406  | H3      | 4      | 25.13       | 7002407  | H3      | 4      | 25.13       | 7002408  | H3      | 4      | 25.13       |                   |         |        |             | 7002409  | H3      | 4      | 76.10       |
| 5/8-11   | 7002410  | H3      | 4      | 28.91       | 7002411  | H3      | 4      | 28.91       | 7002412  | H3      | 4      | 28.91       | 7002567           | H3      | 3      | 32.72       | 7002413  | H3      | 4      | 87.60       |
| 5/8-18   | 7002414  | H3      | 4      | 28.91       | 7002415  | H3      | 4      | 28.91       | 7002416  | H3      | 4      | 28.91       |                   |         |        |             | 7002417  | H3      | 4      | 87.60       |
| 3/4-10   | 7002438  | H3      | 4      | 40.48       | 7002439  | H3      | 4      | 40.48       | 7002440  | H3      | 4      | 40.48       | 7002571           | H3      | 3      | 46.35       | 7002441  | H3      | 4      | 122.63      |
| 3/4-16   | 7002442  | H3      | 4      | 40.48       | 7002443  | H3      | 4      | 40.48       | 7002444  | H3      | 4      | 40.48       |                   |         |        |             | 7002445  | H3      | 4      | 122.63      |
| 7/8-14   | 7002452  | H4      | 4      | 56.43       | 7002453  | H4      | 4      | 56.43       | 7002454  | H4      | 4      | 56.43       |                   |         |        |             | 7002455  | H4      | 4      | 170.95      |
| 1-8      | 7002456  | H4      | 4      | 75.06       | 7002457  | H4      | 4      | 75.06       | 7002458  | H4      | 4      | 75.06       |                   |         |        |             | 7002459  | H4      | 4      | 227.41      |
| 1-12     | 7002460  | H4      | 4      | 77.47       | 7002461  | H4      | 4      | 77.47       | 7002462  | H4      | 4      | 77.47       |                   |         |        |             | 7002463  | H4      | 4      | 234.67      |
| 1-14     | 7002464  | H4      | 4      | 75.06       | 7002465  | H4      | 4      | 75.06       | 7002466  | H4      | 4      | 75.06       |                   |         |        |             | 7002467  | H4      | 4      | 227.41      |
| 1 1/8-7  | 7002468  | H4      | 4      | 121.44      | 7002469  | H4      | 4      | 121.44      | 7002470  | H4      | 4      | 121.44      |                   |         |        |             |          |         |        |             |
| 1 1/8-12 | 7002471  | H4      | 4      | 128.73      | 7002472  | H4      | 4      | 128.73      | 7002473  | H4      | 4      | 128.73      |                   |         |        |             |          |         |        |             |
| 1 1/4-7  | 7002474  | H4      | 4      | 159.42      | 7002475  | H4      | 4      | 159.42      | 7002476  | H4      | 4      | 159.42      |                   |         |        |             |          |         |        |             |
| 1 1/4-12 | 7002477  | H4      | 6      | 162.30      | 7002478  | H4      | 6      | 162.30      | 7002479  | H4      | 6      | 162.30      |                   |         |        |             |          |         |        |             |
| 1 3/8-6  | 7002480  | H4      | 4      | 200.32      | 7002481  | H4      | 4      | 200.32      | 7002482  | H4      | 4      | 200.32      |                   |         |        |             |          |         |        |             |
| 1 3/8-12 | 7002483  | H4      | 6      | 201.76      | 7002484  | H4      | 6      | 201.76      | 7002485  | H4      | 6      | 201.76      |                   |         |        |             |          |         |        |             |
| 1 1/2-6  | 7002486  | H4      | 4      | 231.37      | 7002487  | H4      | 4      | 231.37      | 7002488  | H4      | 4      | 231.37      |                   |         |        |             |          |         |        |             |
| 1 1/2-12 | 7002489  | H4      | 6      | 235.59      | 7002490  | H4      | 6      | 235.59      | 7002491  | H4      | 6      | 235.59      |                   |         |        |             |          |         |        |             |

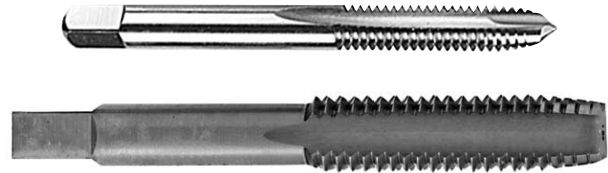
## Taps Cont.



**CLEVELAND  
TWIST DRILL**

### General Purpose Taps (Metric)

- General-purpose tap used either by hand or on production machines
- Precision ground for a wide variety of applications
- Proper number of flutes to provide sufficient chip room and cutting edges to handle most threading jobs



| Size      | Taper    |        |         |        | Plug     |        |         |        | Bottoming |        |         |        | Spiral Point Plug |        |         |        |
|-----------|----------|--------|---------|--------|----------|--------|---------|--------|-----------|--------|---------|--------|-------------------|--------|---------|--------|
|           | Part No. | Flutes | H Limit | Price  | Part No. | Flutes | H Limit | Price  | Part No.  | Flutes | H Limit | Price  | Part No.          | Flutes | H Limit | Price  |
| M3-0.5    | 7002256  | 3      | D3      | \$8.55 | 7002257  | 3      | D3      | \$8.55 | 7002258   | 3      | D3      | \$8.55 | 7002534           | 2      | D3      | \$9.90 |
| M4-0.7    | 7002268  | 4      | D4      | 7.09   | 7002269  | 4      | D4      | 7.09   | 7002270   | 4      | D4      | 7.09   | 7002537           | 2      | D4      | 8.55   |
| M4.5-0.75 | 7002279  | 4      | D4      | 8.50   | 7002280  | 4      | D4      | 7.51   | 7002281   | 4      | D4      | 8.50   | 7002539           | 2      | D4      | 9.14   |
| M5-0.8    | 7002298  | 4      | D4      | 8.50   | 7002299  | 4      | D4      | 7.51   | 7002300   | 4      | D4      | 8.50   | 7002542           | 2      | D4      | 8.55   |
| M6-1.0    | 7002309  | 4      | D5      | 7.47   | 7002310  | 4      | D5      | 7.47   | 7002311   | 4      | D5      | 7.47   | 7002545           | 2      | D5      | 8.55   |
| M7-1.0    | 7002328  | 4      | D5      | 16.41  | 7002329  | 4      | D5      | 8.69   | 7002330   | 4      | D5      | 8.69   | 7002549           | 2      | D5      | 9.90   |
| M8-1.0    | 7002345  | 4      | D5      | 8.08   | 7002346  | 4      | D5      | 8.08   | 7002347   | 4      | D5      | 8.08   | 7002553           | 2      | D5      | 9.90   |
| M8-1.25   | 7002348  | 4      | D5      | 8.24   | 7002349  | 4      | D5      | 8.24   | 7002350   | 4      | D5      | 8.24   | 7002554           | 2      | D5      | 9.90   |
| M10-1.25  | 7002363  | 4      | D5      | 15.37  | 7002364  | 4      | D5      | 15.37  | 7002365   | 4      | D5      | 15.37  | 7002557           | 3      | D5      | 16.35  |
| M10-1.5   | 7002366  | 4      | D6      | 15.37  | 7002367  | 4      | D6      | 10.76  | 7002368   | 4      | D6      | 10.76  | 7002558           | 3      | D6      | 10.84  |
| M12-1.25  | 7002379  | 4      | D5      | 18.36  | 7002380  | 4      | D5      | 18.36  | 7002381   | 4      | D5      | 18.36  | 7002561           | 3      | D5      | 29.97  |
| M12-1.75  | 7002382  | 4      | D6      | 18.16  | 7002383  | 4      | D6      | 18.16  | 7002384   | 4      | D6      | 18.16  | 7002562           | 3      | D6      | 21.51  |
| M14-1.5   | 7002396  | 4      | D6      | 27.41  | 7002397  | 4      | D6      | 27.41  | 7002398   | 4      | D6      | 27.41  | 7002565           | 3      | D6      | 30.17  |
| M14-2.0   | 7002399  | 4      | D7      | 27.41  | 7002400  | 4      | D7      | 27.41  | 7002401   | 4      | D7      | 27.41  | 7002566           | 3      | D7      | 30.17  |
| M16-1.5   | 7002418  | 4      | D6      | 33.71  | 7002419  | 4      | D6      | 33.71  | 7002420   | 4      | D6      | 33.71  | 7002568           | 3      | D6      | 35.43  |
| M16-2.0   | 7002421  | 4      | D7      | 33.71  | 7002422  | 4      | D7      | 33.71  | 7002423   | 4      | D7      | 33.71  | 7002569           | 3      | D7      | 35.43  |
| M18-1.5   | 7002432  | 4      | D6      | 45.32  | 7002433  | 4      | D6      | 45.32  | 7002434   | 4      | D6      | 45.32  |                   |        |         |        |
| M18-2.5   | 7002435  | 4      | D7      | 45.32  | 7002436  | 4      | D7      | 45.32  | 7002437   | 4      | D7      | 45.32  | 7002570           | 3      | D7      | 51.39  |
| M20-2.5   | 7002449  | 4      | D7      | 61.50  | 7002450  | 4      | D7      | 61.50  | 7002451   | 4      | D7      | 61.50  |                   |        |         |        |



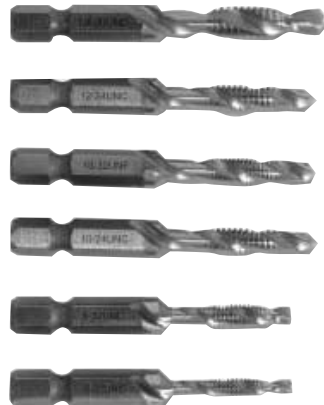
### Greenlee Combined Drill and Tap

#### Product Features

- Complete hole drilling and tapping in one operation with power drill saves labor and time
- Back taper beyond tap to prevent thread damage from over-drilling
- Deburr/Countersink also provided on bit beyond back taper
- Made from high-speed steel vs. carbon steel for longer life
- High quality hex shank to ensure strong connection to drill chuck
- Designed to tap up to 10 gauge metal

#### Specifications

- Material Thickness: 10 gauge
- Material Type: mild steel, copper, brass, aluminum
- Shank: 1/4" quick change hex
- Drill Material: high speed steel
- Drill Point: split point with web thinning



| Part No. | Size                         | Price /Each |
|----------|------------------------------|-------------|
| 0323450  | 6-32 to 1/4-20 Drill/Tap Set | \$41.91     |
| 0323451  | 6-32 NC                      | 8.11        |
| 0323452  | 8-32 NC                      | 8.38        |
| 0323453  | 10-24 NC                     | 9.29        |
| 0323454  | 10-32 NF                     | 9.47        |
| 0323455  | 12-24 NC                     | 9.72        |
| 0323456  | 1/4-20 NC                    | 10.27       |



### EM Gun Tap

- GTD EM-SS 8351 High Performance Spiral Point Taps
- Designed for through holes in stainless steel
- Spiral point flute geometry pushes chips ahead of taps
- CNC equipment neck design
- SH-50 black oxide treatment helps prevent galling



| Tap Size | Pitch  | Flutes | Thread |         |         | H Limit | Black Oxide |             | Bright   |             |
|----------|--------|--------|--------|---------|---------|---------|-------------|-------------|----------|-------------|
|          |        |        | Lgth.  | OaL     | Decimal |         | Part No.    | Price /Each | Part No. | Price /Each |
| M3       | 0.5mm  | 3      | .374   | 1-15/16 | .11811  | D3      | 7004291     | \$20.59     | 7004292  | \$20.59     |
| M3.5     | 0.6mm  | 3      | .413   | 2       | .137795 | D4      | 7004293     | 18.32       | 7004294  | 18.32       |
| M3.5     | 0.6mm  | 3      | .413   | 2       | .15748  | D4      | 7004295     | 18.32       | 7004296  | 18.32       |
| M5       | 0.8mm  | 3      | .531   | 2-3/8   | .27559  | D4      | 7004297     | 18.32       | 7004298  | 18.32       |
| M6       | 1mm    | 3      | .591   | 2-1/2   | .31496  | D5      | 7004299     | 18.32       | 7004300  | 18.32       |
| M7       | 1mm    | 3      | .669   | 2-23/32 | .3150   | D5      | 7004301     | 20.59       | 7004302  | 20.59       |
| M8       | 1mm    | 3      | .669   | 2-23/32 | .3937   | D5      | 7004303     | 20.59       | 7004304  | 20.59       |
| M8       | 1.25mm | 3      | .669   | 2-23/32 | .3937   | D5      | 7004305     | 20.59       | 7004306  | 20.59       |
| M10      | 1.25mm | 3      | .748   | 2-15/16 | .4724   | D5      | 7004307     | 28.60       | 7004308  | 28.60       |
| M10      | 1.5mm  | 3      | .748   | 2-15/16 | .4724   | D6      | 7004309     | 28.60       | 7004310  | 28.60       |
| M12      | 1.25mm | 3      | .984   | 3-3/8   | .5512   | D5      | 7004311     | 34.26       | 7004312  | 34.26       |
| M12      | 1.75mm | 3      | .984   | 3.38    | .5512   | D6      | 7004313     | 34.26       | 7004314  | 34.26       |
| M14      | 1.5mm  | 3      | .984   | 3-19/32 | .6299   | D6      | 7004315     | 47.41       | 7004316  | 47.41       |
| M14      | 2mm    | 3      | .984   | 3-19/32 | .6299   | D7      | 7004317     | 50.94       | 7004318  | 50.94       |
| M16      | 1.5mm  | 3      | 1.083  | 3-13/16 | .7087   | D6      | 7004319     | 61.79       | 7004320  | 61.79       |
| M16      | 2mm    | 3      | 1.083  | 3-13/16 | .7087   | D7      |             |             | 7004322  | 61.79       |
| M18      | 1.5mm  | 3      | 1.083  | 4-1/32  | .11811  | D6      | 7004323     | 86.72       |          |             |
| M18      | 2.5mm  | 3      | 1.083  | 4-1/32  | .11811  | D7      | 7004325     | 86.72       | 7004326  | 86.72       |
| M3       | 0.5mm  | 3      | .374   | 1-15/16 | .137795 | D3      | 7004327     | 29.68       |          |             |



# TAPS

## Taps Cont.



Cutting Tools

### Gun® Tap Titanium Nitride Coated

- GTD 2301 spiral point TiN coated taps are designed for through hole applications
- Spiral point flute geometry pushes chips ahead of the tap
- Titanium Nitride (TiN) coating increases the tap wear life, allows higher tapping speeds and improves product thread finish



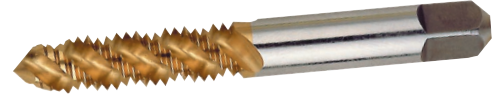
| Part No. | Tap Size | Pitch | Thread Lgth. | Type | Flutes | OaL     | Decimal | H Limit | Price /Each |
|----------|----------|-------|--------------|------|--------|---------|---------|---------|-------------|
| 7003439  | 0        | 80    | 5/16         | Plug | 2      | 1-5/8   | .060    | H2      | \$24.05     |
| 7003440  | 2        | 56    | 7/16         | Plug | 2      | 1-3/4   | .086    | H2      | 18.40       |
| 7003441  | 3        | 48    | 1/2          | Plug | 2      | 1-13/16 | .099    | H2      | 14.88       |
| 7003442  | 4        | 40    | 9/16         | Plug | 2      | 1-7/8   | .112    | H2      | 11.91       |
| 7003443  | 5        | 40    | 5/8          | Plug | 2      | 1-15/16 | .125    | H2      | 11.91       |
| 7003444  | 6        | 32    | 3/8          | Plug | 2      | 1-11/16 | .138    | H2      | 10.02       |
| 7003445  | 6        | 32    | 11/16        | Plug | 2      | 2       | .138    | H3      | 10.02       |
| 7003446  | 6        | 40    | 11/16        | Plug | 2      | 2       | .138    | H2      | 11.39       |
| 7003447  | 8        | 32    | 3/4          | Plug | 2      | 2-1/8   | .164    | H2      | 10.02       |
| 7003448  | 8        | 32    | 3/4          | Plug | 2      | 2-1/8   | .164    | H3      | 10.02       |
| 7003449  | 10       | 24    | 7/8          | Plug | 2      | 2-3/8   | .190    | H3      | 10.02       |
| 7003450  | 10       | 32    | 7/8          | Plug | 2      | 2-3/8   | .190    | H2      | 10.02       |
| 7003451  | 10       | 32    | 7/8          | Plug | 2      | 2-3/8   | .190    | H3      | 10.02       |
| 7003452  | 12       | 24    | 15/16        | Plug | 2      | 2-3/8   | .216    | H3      | 11.39       |
| 7003453  | 1/4      | 20    | 1            | Plug | 2      | 2-1/2   | .250    | H2      | 11.39       |
| 7003454  | 1/4      | 20    | 1            | Plug | 3      | 2-1/2   | .250    | H3      | 12.45       |
| 7003455  | 1/4      | 20    | 1            | Plug | 2      | 2-1/2   | .250    | H5      | 11.39       |
| 7003456  | 1/4      | 28    | 1            | Plug | 2      | 2-1/2   | .250    | H3      | 10.02       |
| 7003457  | 5/16     | 18    | 1-1/8        | Plug | 2      | 2-23/32 | .3125   | H3      | 10.78       |
| 7003458  | 5/16     | 24    | 1-1/8        | Plug | 2      | 2-23/32 | .3125   | H3      | 10.78       |
| 7003459  | 3/8      | 16    | 1-1/4        | Plug | 3      | 2-15/16 | .375    | H3      | 12.85       |
| 7003460  | 3/8      | 24    | 1-1/4        | Plug | 3      | 2-15/16 | .375    | H3      | 13.75       |
| 7003461  | 7/16     | 14    | 1-7/16       | Plug | 3      | 3-5/32  | .4375   | H3      | 21.94       |
| 7003462  | 7/16     | 20    | 1-7/16       | Plug | 3      | 3-5/32  | .4375   | H3      | 21.94       |
| 7003463  | 1/2      | 13    | 1-21/32      | Plug | 3      | 3-3/8   | .500    | H3      | 22.26       |
| 7003464  | 1/2      | 20    | 1-21/32      | Plug | 3      | 3-3/8   | .500    | H3      | 25.99       |
| 7003465  | 5/8      | 11    | 1-13/16      | Plug | 3      | 3-13/16 | .625    | H3      | 49.53       |
| 7003466  | 3/4      | 10    | 2            | Plug | 3      | 4-1/4   | .7500   | H3      | 70.16       |

#### Metric

|         |         |        |      |   |         |       |    |     |       |
|---------|---------|--------|------|---|---------|-------|----|-----|-------|
| 7003493 | 5/8     | 0.5mm  | Plug | 2 | 1-15/16 | .1181 | D3 | M3  | 14.90 |
| 7003494 | 3/4     | 0.7mm  | Plug | 2 | 2-1/8   | .1574 | D4 | M4  | 12.87 |
| 7003495 | 7/8     | 0.8mm  | Plug | 2 | 2-3/8   | .1968 | D4 | M5  | 12.87 |
| 7003496 | 1       | 1mm    | Plug | 2 | 2-1/2   | .2362 | D5 | M6  | 12.87 |
| 7003497 | 1-1/8   | 1.25mm | Plug | 2 | 2       | .3149 | D5 | M8  | 14.90 |
| 7003498 | 1-1/4   | 1.5mm  | Plug | 3 | 2-15/16 | .3937 | D6 | M10 | 24.75 |
| 7003499 | 1-21/32 | 1.75mm | Plug | 3 | 3-3/8   | .4724 | D6 | M12 | 30.29 |

### Fast Spiral Fluted Tap - Titanium Nitride Coated

- GTD 2314 fast spiral fluted taps have excellent results in deep blind holes
- Fast spiral flutes improve chip lifting action
- Plug chamfers have 3-5 pitches
- Bottoming chamfers have 1-2 pitches
- Work well in stainless steel
- Titanium Nitride (TiN) coating increases tap wear life and allows higher tapping speeds.



| Part No. | Tap Size | Pitch | Thread Lgth. | Type | Flutes | OaL     | Decimal | H Limit | Price /Each |
|----------|----------|-------|--------------|------|--------|---------|---------|---------|-------------|
| 7003467  | 4        | 40    | 5/16         | Plug | 2      | 1-7/8   | .112    | H2      | \$20.91     |
| 7003468  | 4        | 40    | 5/16         | Btm  | 2      | 1-7/8   | .112    | H2      | 20.91       |
| 7003469  | 6        | 32    | 3/8          | Plug | 2      | 2       | .138    | H3      | 16.99       |
| 7003470  | 6        | 32    | 3/8          | Btm  | 2      | 2       | .138    | H3      | 16.99       |
| 7003471  | 8        | 32    | 3/8          | Plug | 3      | 2-1/8   | .164    | H3      | 16.99       |
| 7003472  | 8        | 32    | 3/8          | Btm  | 3      | 2-1/8   | .164    | H3      | 16.99       |
| 7003473  | 10       | 32    | 1/2          | Plug | 3      | 2-3/8   | .190    | H3      | 16.99       |
| 7003474  | 10       | 24    | 1/2          | Plug | 3      | 2-3/8   | .190    | H3      | 16.99       |
| 7003475  | 10       | 24    | 1/2          | Btm  | 3      | 2-3/8   | .190    | H3      | 16.99       |
| 7003476  | 10       | 32    | 1/2          | Btm  | 3      | 2-3/8   | .190    | H3      | 16.99       |
| 7003477  | 1/4      | 20    | 5/8          | Plug | 3      | 2-1/2   | .250    | H3      | 18.50       |
| 7003478  | 1/4      | 20    | 5/8          | Btm  | 3      | 2-1/2   | .250    | H3      | 18.50       |
| 7003479  | 1/4      | 28    | 5/8          | Plug | 3      | 2-1/2   | .250    | H3      | 18.50       |
| 7003480  | 1/4      | 28    | 5/8          | Btm  | 3      | 2-1/2   | .250    | H3      | 18.50       |
| 7003481  | 5/16     | 18    | 11/16        | Plug | 3      | 2-23/32 | .3125   | H3      | 22.86       |
| 7003482  | 5/16     | 18    | 11/16        | Btm  | 3      | 2-23/32 | .3125   | H3      | 22.86       |
| 7003483  | 5/16     | 24    | 11/16        | Plug | 3      | 2-23/32 | .3125   | H3      | 22.86       |
| 7003484  | 5/16     | 24    | 11/16        | Btm  | 3      | 2-23/32 | .3125   | H3      | 22.86       |
| 7003485  | 3/8      | 16    | 3/4          | Plug | 3      | 2-15/16 | .375    | H3      | 26.44       |
| 7003486  | 3/8      | 16    | 3/4          | Btm  | 3      | 2-15/16 | .375    | H3      | 26.44       |
| 7003487  | 3/8      | 24    | 3/4          | Plug | 3      | 2-15/16 | .375    | H3      | 26.44       |
| 7003488  | 3/8      | 24    | 3/4          | Btm  | 3      | 2-15/16 | .375    | H3      | 26.44       |
| 7003489  | 7/16     | 14    | 7/8          | Plug | 3      | 3-5/32  | .4375   | H3      | 39.37       |
| 7003490  | 7/16     | 14    | 7/8          | Btm  | 3      | 3-5/32  | .4375   | H3      | 39.37       |
| 7003491  | 1/2      | 13    | 15/16        | Plug | 3      | 3-3/8   | .500    | H3      | 46.31       |
| 7003492  | 1/2      | 13    | 15/16        | Btm  | 3      | 3-3/8   | .500    | H3      | 46.31       |



### Production Hand Taps

- GTD 5303 production hand taps are manufactured from select HSS for increased wear life
- Straight flute design
- May be used by hand or for tapping under power
- For use in through hole or blind hole tapping

| Part No. | Tap Size | Pitch | Type   | Flutes | H Limit | Thread Lgth. | OaL     | Decimal | Price /Each |
|----------|----------|-------|--------|--------|---------|--------------|---------|---------|-------------|
| 7003668  | 0        | 80    | Plug   | 2      | H2      | 5/16         | 1-5/8   | .060    | \$13.82     |
| 7003669  | 0        | 80    | Bottom | 2      | H2      | 5/16         | 1-5/8   | .060    | 13.82       |
| 7003670  | 1        | 64    | Plug   | 2      | H2      | 3/8          | 1-11/16 | .073    | 12.80       |
| 7003671  | 1        | 72    | Plug   | 2      | H2      | 3/8          | 1-11/16 | .073    | 12.80       |
| 7003672  | 1        | 72    | Bottom | 2      | H2      | 3/8          | 1-11/16 | .073    | 12.80       |
| 7003673  | 2        | 56    | Taper  | 3      | H2      | 7/16         | 1-3/4   | .086    | 11.02       |
| 7003674  | 2        | 56    | Plug   | 3      | H2      | 7/16         | 1-3/4   | .086    | 11.02       |
| 7003675  | 2        | 56    | Bottom | 3      | H2      | 7/16         | 1-3/4   | .086    | 11.02       |
| 7003676  | 2        | 56    | Set    | 3      | H2      | 7/16         | 1-3/4   | .086    | 33.03       |
| 7003677  | 2        | 64    | Taper  | 3      | H2      | 7/16         | 1-3/4   | .086    | 11.88       |

## Taps Cont.



### Production Hand Taps Cont.

| Part No. | Tap Size | Pitch | Type   | Flutes | H Limit | Thread Lgth. | OaL     | Decimal | Price /Each |
|----------|----------|-------|--------|--------|---------|--------------|---------|---------|-------------|
| 7003678  | 2        | 64    | Plug   | 3      | H2      | 7/16         | 1-3/4   | .086    | \$11.88     |
| 7003679  | 2        | 64    | Bottom | 3      | H2      | 7/16         | 1-3/4   | .086    | 11.88       |
| 7003680  | 2        | 64    | Set    | 3      | H2      | 7/16         | 1-3/4   | .086    | 35.71       |
| 7003681  | 3        | 48    | Taper  | 3      | H2      | 1/2          | 1-13/16 | .099    | 8.49        |
| 7003682  | 3        | 48    | Plug   | 3      | H2      | 1/2          | 1-13/16 | .099    | 8.49        |
| 7003683  | 3        | 48    | Bottom | 3      | H2      | 1/2          | 1-13/16 | .099    | 8.49        |
| 7003684  | 3        | 48    | Set    | 3      | H2      | 1/2          | 1-13/16 | .099    | 25.41       |
| 7003685  | 3        | 56    | Taper  | 3      | H2      | 1/2          | 1-13/16 | .099    | 9.48        |
| 7003686  | 3        | 56    | Plug   | 3      | H2      | 1/2          | 1-13/16 | .099    | 9.48        |
| 7003687  | 3        | 56    | Bottom | 3      | H2      | 1/2          | 1-13/16 | .099    | 9.48        |
| 7003688  | 3        | 56    | Set    | 3      | H2      | 1/2          | 1-13/16 | .099    | 28.42       |
| 7003689  | 4        | 36    | Taper  | 3      | H2      | 9/16         | 1-7/8   | .112    | 8.08        |
| 7003690  | 4        | 36    | Plug   | 3      | H2      | 9/16         | 1-7/8   | .112    | 8.08        |
| 7003691  | 4        | 36    | Bottom | 3      | H2      | 9/16         | 1-7/8   | .112    | 8.08        |
| 7003692  | 4        | 36    | Set    | 3      | H2      | 9/16         | 1-7/8   | .112    | 24.22       |
| 7003693  | 4        | 40    | Taper  | 3      | H2      | 9/16         | 1-7/8   | .112    | 6.95        |
| 7003694  | 4        | 40    | Plug   | 3      | H2      | 9/16         | 1-7/8   | .112    | 6.95        |
| 7003695  | 4        | 40    | Bottom | 3      | H2      | 9/16         | 1-7/8   | .112    | 6.95        |
| 7003696  | 4        | 40    | Set    | 3      | H2      | 9/16         | 1-7/8   | .112    | 20.86       |
| 7003697  | 4        | 48    | Taper  | 3      | H2      | 9/16         | 1-7/8   | .112    | 7.48        |
| 7003698  | 4        | 48    | Plug   | 3      | H2      | 9/16         | 1-7/8   | .112    | 7.48        |
| 7003699  | 4        | 48    | Bottom | 3      | H2      | 9/16         | 1-7/8   | .112    | 7.48        |
| 7003700  | 4        | 48    | Set    | 3      | H2      | 9/16         | 1-7/8   | .112    | 22.44       |
| 7003701  | 5        | 40    | Taper  | 3      | H2      | 5/8          | 1-15/16 | .125    | 6.95        |
| 7003702  | 5        | 40    | Plug   | 3      | H2      | 5/8          | 1-15/16 | .125    | 6.95        |
| 7003703  | 5        | 40    | Bottom | 3      | H2      | 5/8          | 1-15/16 | .125    | 6.95        |
| 7003704  | 5        | 40    | Set    | 3      | H2      | 5/8          | 1-15/16 | .125    | 20.86       |
| 7003705  | 5        | 44    | Taper  | 3      | H2      | 5/8          | 1-15/16 | .125    | 7.48        |
| 7003706  | 5        | 44    | Plug   | 3      | H2      | 5/8          | 1-15/16 | .125    | 7.48        |
| 7003707  | 5        | 44    | Bottom | 3      | H2      | 5/8          | 1-15/16 | .125    | 7.48        |
| 7003708  | 5        | 44    | Set    | 3      | H2      | 5/8          | 1-15/16 | .125    | 22.44       |
| 7003709  | 6        | 32    | Taper  | 3      | H3      | 11/16        | 2       | .138    | 5.26        |
| 7003710  | 6        | 32    | Plug   | 3      | H3      | 11/16        | 2       | .138    | 5.26        |
| 7003711  | 6        | 32    | Bottom | 3      | H3      | 11/16        | 2       | .138    | 5.26        |
| 7003712  | 6        | 32    | Set    | 3      | H3      | 11/16        | 2       | .138    | 15.82       |
| 7003713  | 8        | 32    | Taper  | 4      | H3      | 3/4          | 2-1/8   | .164    | 5.46        |
| 7003714  | 8        | 32    | Plug   | 4      | H3      | 3/4          | 2-1/8   | .164    | 5.46        |
| 7003715  | 8        | 32    | Bottom | 4      | H3      | 3/4          | 2-1/8   | .164    | 5.46        |
| 7003716  | 8        | 32    | Set    | 4      | H3      | 3/4          | 2-1/8   | .164    | 16.47       |
| 7003717  | 10       | 24    | Taper  | 4      | H3      | 7/8          | 2-3/8   | .190    | 5.61        |
| 7003718  | 10       | 24    | Plug   | 4      | H3      | 7/8          | 2-3/8   | .190    | 5.61        |
| 7003719  | 10       | 24    | Bottom | 4      | H3      | 7/8          | 2-3/8   | .190    | 5.61        |
| 7003720  | 10       | 24    | Set    | 4      | H3      | 7/8          | 2-3/8   | .190    | 16.85       |
| 7003721  | 10       | 32    | Taper  | 4      | H3      | 7/8          | 2-3/8   | .190    | 5.61        |
| 7003722  | 10       | 32    | Plug   | 4      | H3      | 7/8          | 2-3/8   | .190    | 5.61        |
| 7003723  | 10       | 32    | Bottom | 4      | H3      | 7/8          | 2-3/8   | .190    | 5.61        |
| 7003724  | 10       | 32    | Set    | 4      | H3      | 7/8          | 2-3/8   | .190    | 16.85       |
| 7003725  | 12       | 24    | Taper  | 4      | H3      | 15/16        | 2-3/8   | .216    | 5.96        |
| 7003726  | 12       | 24    | Plug   | 4      | H3      | 15/16        | 2-3/8   | .216    | 5.96        |
| 7003727  | 12       | 24    | Bottom | 4      | H3      | 15/16        | 2-3/8   | .216    | 5.96        |
| 7003728  | 12       | 24    | Set    | 4      | H3      | 15/16        | 2-3/8   | .216    | 17.91       |
| 7003729  | 12       | 28    | Taper  | 4      | H3      | 15/16        | 2-3/8   | .216    | 6.53        |
| 7003730  | 12       | 28    | Plug   | 4      | H3      | 15/16        | 2-3/8   | .216    | 6.53        |
| 7003731  | 12       | 28    | Bottom | 4      | H3      | 15/16        | 2-3/8   | .216    | 6.53        |
| 7003732  | 12       | 28    | Set    | 4      | H3      | 15/16        | 2-3/8   | .216    | 19.58       |
| 7003533  | 1/4      | 20    | Taper  | 4      | H3      | 1.00         | 2-1/2   | .2500   | 6.05        |
| 7003534  | 1/4      | 20    | Plug   | 4      | H3      | 1.00         | 2-1/2   | .2500   | 6.05        |
| 7003535  | 1/4      | 20    | Bottom | 4      | H3      | 1.00         | 2-1/2   | .2500   | 6.05        |
| 7003536  | 1/4      | 28    | Taper  | 4      | H3      | 1.00         | 2-1/2   | .2500   | 6.05        |
| 7003537  | 1/4      | 28    | Plug   | 4      | H3      | 1.00         | 2-1/2   | .2500   | 6.05        |
| 7003538  | 1/4      | 28    | Bottom | 4      | H3      | 1.00         | 2-1/2   | .2500   | 6.05        |
| 7003539  | 1/4      | 28    | Set    | 4      | H3      | 1.00         | 2-1/2   | .2500   | 18.16       |
| 7003540  | 5/16     | 18    | Taper  | 4      | H3      | 1-1/8        | 2-23/32 | .3125   | 7.48        |
| 7003541  | 5/16     | 18    | Plug   | 4      | H3      | 1-1/8        | 2-23/32 | .3125   | 7.48        |

| Part No. | Tap Size | Pitch | Type   | Flutes | H Limit | Thread Lgth. | OaL     | Decimal | Price /Each |
|----------|----------|-------|--------|--------|---------|--------------|---------|---------|-------------|
| 7003542  | 5/16     | 18    | Bottom | 4      | H3      | 1-1/8        | 2-23/32 | .3125   | \$7.48      |
| 7003543  | 5/16     | 18    | Set    | 4      | H3      | 1-1/8        | 2-23/32 | .3125   | 22.44       |
| 7003544  | 5/16     | 24    | Taper  | 4      | H3      | 1-1/8        | 2-23/32 | .3125   | 7.48        |
| 7003545  | 5/16     | 24    | Plug   | 4      | H3      | 1-1/8        | 2-23/32 | .3125   | 7.48        |
| 7003546  | 5/16     | 24    | Bottom | 4      | H3      | 1-1/8        | 2-23/32 | .3125   | 7.48        |
| 7003547  | 5/16     | 24    | Set    | 4      | H3      | 1-1/8        | 2-23/32 | .3125   | 22.44       |
| 7003548  | 3/8      | 16    | Taper  | 4      | H3      | 1-1/4        | 2-15/16 | .3750   | 8.43        |
| 7003549  | 3/8      | 16    | Plug   | 4      | H3      | 1-1/4        | 2-15/16 | .3750   | 8.43        |
| 7003550  | 3/8      | 16    | Bottom | 4      | H3      | 1-1/4        | 2-15/16 | .3750   | 8.43        |
| 7003551  | 3/8      | 16    | Set    | 4      | H3      | 1-1/4        | 2-15/16 | .3750   | 25.34       |
| 7003552  | 3/8      | 24    | Taper  | 4      | H3      | 1-1/4        | 2-15/16 | .3750   | 8.43        |
| 7003553  | 3/8      | 24    | Plug   | 4      | H3      | 1-1/4        | 2-15/16 | .3750   | 8.43        |
| 7003554  | 3/8      | 24    | Bottom | 4      | H3      | 1-1/4        | 2-15/16 | .3750   | 8.43        |
| 7003555  | 3/8      | 24    | Set    | 4      | H3      | 1-1/4        | 2-15/16 | .3750   | 25.34       |
| 7003556  | 7/16     | 14    | Taper  | 4      | H3      | 1-7/16       | 3-5/32  | .4375   | 14.37       |
| 7003557  | 7/16     | 14    | Plug   | 4      | H3      | 1-7/16       | 3-5/32  | .4375   | 14.37       |
| 7003558  | 7/16     | 14    | Bottom | 4      | H3      | 1-7/16       | 3-5/32  | .4375   | 14.37       |
| 7003559  | 7/16     | 14    | Set    | 4      | H3      | 1-7/16       | 3-5/32  | .4375   | 43.16       |
| 7003560  | 7/16     | 20    | Taper  | 4      | H3      | 1-7/16       | 3-5/32  | .4375   | 14.37       |
| 7003561  | 7/16     | 20    | Plug   | 4      | H3      | 1-7/16       | 3-5/32  | .4375   | 14.37       |
| 7003562  | 7/16     | 20    | Bottom | 4      | H3      | 1-7/16       | 3-5/32  | .4375   | 14.37       |
| 7003563  | 7/16     | 20    | Set    | 4      | H3      | 1-7/16       | 3-5/32  | .4375   | 43.16       |
| 7003564  | 1/2      | 13    | Taper  | 4      | H3      | 1-21/32      | 3-3/8   | .5000   | 15.31       |
| 7003565  | 1/2      | 13    | Plug   | 4      | H3      | 1-21/32      | 3-3/8   | .5000   | 15.31       |
| 7003566  | 1/2      | 13    | Bottom | 4      | H3      | 1-21/32      | 3-3/8   | .5000   | 15.31       |
| 7003567  | 1/2      | 13    | Set    | 4      | H3      | 1-21/32      | 3-3/8   | .5000   | 45.90       |
| 7003568  | 1/2      | 20    | Taper  | 4      | H3      | 1-21/32      | 3-3/8   | .5000   | 17.10       |
| 7003569  | 1/2      | 20    | Plug   | 4      | H3      | 1-21/32      | 3-3/8   | .5000   | 17.10       |
| 7003570  | 1/2      | 20    | Bottom | 4      | H3      | 1-21/32      | 3-3/8   | .5000   | 17.10       |
| 7003571  | 1/2      | 20    | Set    | 4      | H3      | 1-21/32      | 3-3/8   | .5000   | 51.33       |
| 7003572  | 9/16     | 12    | Taper  | 4      | H3      | 1-21/32      | 3-19/32 | .5625   | 26.02       |
| 7003573  | 9/16     | 12    | Plug   | 4      | H3      | 1-21/32      | 3-19/32 | .5625   | 26.02       |
| 7003574  | 9/16     | 12    | Bottom | 4      | H3      | 1-21/32      | 3-19/32 | .5625   | 26.02       |
| 7003575  | 9/16     | 12    | Set    | 4      | H3      | 1-21/32      | 3-19/32 | .5625   | 78.05       |
| 7003576  | 9/16     | 18    | Taper  | 4      | H3      | 1-21/32      | 3-19/32 | .5625   | 26.02       |
| 7003577  | 9/16     | 18    | Plug   | 4      | H3      | 1-21/32      | 3-19/32 | .5625   | 26.02       |
| 7003578  | 9/16     | 18    | Bottom | 4      | H3      | 1-21/32      | 3-19/32 | .5625   | 26.02       |
| 7003579  | 9/16     | 18    | Set    | 4      | H3      | 1-21/32      | 3-19/32 | .5625   | 78.05       |
| 7003580  | 5/8      | 11    | Taper  | 4      | H3      | 1-13/16      | 3-13/16 | .6250   | 31.10       |
| 7003581  | 5/8      | 11    | Plug   | 4      | H3      | 1-13/16      | 3-13/16 | .6250   | 31.10       |
| 7003582  | 5/8      | 11    | Bottom | 4      | H3      | 1-13/16      | 3-13/16 | .6250   | 31.10       |
| 7003583  | 5/8      | 11    | Set    | 4      | H3      | 1-13/16      | 3-13/16 | .6250   | 93.29       |
| 7003584  | 5/8      | 18    | Taper  | 4      | H3      | 1-13/16      | 3-13/16 | .6250   | 31.10       |
| 7003585  | 5/8      | 18    | Plug   | 4      | H3      | 1-13/16      | 3-13/16 | .6250   | 31.10       |
| 7003586  | 5/8      | 18    | Bottom | 4      | H3      | 1-13/16      | 3-13/16 | .6250   | 31.10       |
| 7003587  | 5/8      | 18    | Set    | 4      | H3      | 1-13/16      | 3-13/16 | .6250   | 93.29       |
| 7003596  | 3/4      | 10    | Taper  | 4      | H3      | 2            | 4-1/4   | .7500   | 43.44       |
| 7003597  | 3/4      | 10    | Plug   | 4      | H3      | 2            | 4-1/4   | .7500   | 43.44       |
| 7003598  | 3/4      | 10    | Bottom | 4      | H3      | 2            | 4-1/4   | .7500   | 43.44       |
| 7003599  | 3/4      | 1     | Set    | 4      | H3      | 2            | 4-1/4   | .7500   | 130.37      |
| 7003600  | 3/4      | 16    | Taper  | 4      | H3      | 2            | 4-1/4   | .7500   | 43.44       |
| 7003601  | 3/4      | 16    | Plug   | 4      | H3      | 2            | 4-1/4   | .7500   | 43.44       |
| 7003602  | 3/4      | 16    | Bottom | 4      | H3      | 2            | 4-1/4   | .7500   | 43.44       |
| 7003603  | 3/4      | 16    | Set    | 4      | H3      | 2            | 4-1/4   | .7500   | 130.37      |
| 7003604  | 7/8      | 9     | Taper  | 4      | H4      | 2-7/32       | 4-11/16 | .8750   | 60.66       |
| 7003605  | 7/8      | 9     | Plug   | 4      | H4      | 2-7/32       | 4-11/16 | .8750   | 60.66       |
| 7003606  | 7/8      | 9     | Bottom | 4      | H4      | 2-7/32       | 4-11/16 | .8750   | 60.66       |
| 7003607  | 7/8      | 9     | Set    | 4      | H4      | 2-7/32       | 4-11/16 | .8750   | 182.03      |
| 7003608  | 7/8      | 14    | Taper  | 4      | H4      | 2-7/32       | 4-11/16 | .8750   | 60.66       |
| 7003609  | 7/8      | 14    | Plug   | 4      | H4      | 2-7/32       | 4-11/16 | .8750   | 60.66       |
| 7003610  | 7/8      | 14    | Bottom | 4      | H4      | 2-7/32       | 4-11/16 | .8750   | 60.66       |
| 7003611  | 7/8      | 14    | Set    | 4      | H4      | 2-7/32       | 4-11/16 | .8750   | 182.03      |
| 7003612  | 1        | 8     | Taper  | 4      | H4      | 2-1/2        | 5-1/8   | 1.000   | 80.78       |
| 7003613  | 1        | 8     | Plug   | 4      | H4      | 2-1/2        | 5-1/8   | 1.000   | 80.78       |
| 7003614  | 1        | 8     | Bottom | 4      | H4      | 2-1/2        | 5-1/8   | 1.000   | 80.78       |
| 7003615  | 1        | 8     | Set    | 4      | H4      | 2-1/2        | 5-1/8   | 1.000   | 243.23      |
| 7003616  | 1        | 12    | Taper  | 4      | H4      | 2-1/2        | 5-1/8   | 1.000   | 83.32       |
| 7003617  | 1        | 12    | Plug   | 4      | H4      | 2-1/2        | 5-1/8   | 1.000   | 83.32       |
| 7003618  | 1        | 12    | Bottom | 4      | H4      | 2-1/2        | 5-1/8   | 1.000   | 83.32       |
| 7003619  | 1        | 12    | Set    | 4      | H4      | 2-1/2        | 5-1/8   | 1.000   | 249.98      |
| 7003620  | 1        | 14    | Taper  | 4      | H4      | 2-1/2        | 5-1/8   | 1.000   | 80.78       |
| 7003621  | 1        | 14    | Plug   | 4      | H4      | 2-1/2        | 5-1/8   | 1.0     |             |



### Production Hand Taps Cont.

| Part No. | Tap Size | Pitch | Type   | Flutes | H Limit | Thread Lgth. | OaL    | Decimal | Price /Each |
|----------|----------|-------|--------|--------|---------|--------------|--------|---------|-------------|
| 7003623  | 1        | 14    | Set    | 4      | H4      | 2-1/2        | 5-1/8  | 1.000   | \$242.37    |
| 7003624  | 1-1/8    | 7     | Taper  | 4      | H4      | 2-9/16       | 5-7/16 | 1.125   | 130.59      |
| 7003625  | 1-1/8    | 7     | Plug   | 4      | H4      | 2-9/16       | 5-7/16 | 1.125   | 130.59      |
| 7003626  | 1-1/8    | 7     | Bottom | 4      | H4      | 2-9/16       | 5-7/16 | 1.125   | 130.59      |
| 7003627  | 1-1/8    | 7     | Set    | 4      | H4      | 2-9/16       | 5-7/16 | 1.125   | 391.79      |
| 7003628  | 1-1/8    | 12    | Taper  | 4      | H4      | 2-9/16       | 5-7/16 | 1.125   | 138.72      |
| 7003629  | 1-1/8    | 12    | Plug   | 4      | H4      | 2-9/16       | 5-7/16 | 1.125   | 138.72      |
| 7003630  | 1-1/8    | 12    | Bottom | 4      | H4      | 2-9/16       | 5-7/16 | 1.125   | 138.72      |
| 7003631  | 1-1/8    | 12    | Set    | 4      | H4      | 2-9/16       | 5-7/16 | 1.125   | 416.04      |
| 7003632  | 1-1/4    | 7     | Taper  | 4      | H4      | 2-9/16       | 5-3/4  | 1.250   | 171.05      |
| 7003633  | 1-1/4    | 7     | Plug   | 4      | H4      | 2-9/16       | 5-3/4  | 1.250   | 171.05      |
| 7003634  | 1-1/4    | 7     | Bottom | 4      | H4      | 2-9/16       | 5-3/4  | 1.250   | 171.05      |
| 7003635  | 1-1/4    | 7     | Set    | 4      | H4      | 2-9/16       | 5-3/4  | 1.250   | 513.14      |
| 7003636  | 1-1/4    | 12    | Taper  | 6      | H4      | 2-9/16       | 5-3/4  | 1.250   | 174.51      |
| 7003637  | 1-1/4    | 12    | Plug   | 6      | H4      | 2-9/16       | 5-3/4  | 1.250   | 174.51      |
| 7003638  | 1-1/4    | 12    | Bottom | 6      | H4      | 2-9/16       | 5-3/4  | 1.250   | 174.51      |
| 7003639  | 1-1/4    | 12    | Set    | 6      | H4      | 2-9/16       | 5-3/4  | 1.250   | 523.56      |
| 7003640  | 1-3/8    | 6     | Taper  | 4      | H4      | 3            | 6-1/16 | 1.375   | 216.13      |
| 7003641  | 1-3/8    | 6     | Plug   | 4      | H4      | 3            | 6-1/16 | 1.375   | 216.13      |
| 7003642  | 1-3/8    | 6     | Bottom | 4      | H4      | 3            | 6-1/16 | 1.375   | 216.13      |
| 7003643  | 1-3/8    | 6     | Set    | 4      | H4      | 3            | 6-1/16 | 1.375   | 648.36      |
| 7003644  | 1-3/8    | 12    | Taper  | 6      | H4      | 3            | 6-1/16 | 1.375   | 217.27      |
| 7003645  | 1-3/8    | 12    | Plug   | 6      | H4      | 3            | 6-1/16 | 1.375   | 217.27      |
| 7003646  | 1-3/8    | 12    | Bottom | 6      | H4      | 3            | 6-1/16 | 1.375   | 217.27      |
| 7003647  | 1-3/8    | 12    | Set    | 6      | H4      | 3            | 6-1/16 | 1.375   | 651.83      |
| 7003648  | 1-1/2    | 6     | Taper  | 4      | H4      | 3            | 6-3/8  | 1.500   | 248.47      |
| 7003649  | 1-1/2    | 6     | Plug   | 4      | H4      | 3            | 6-3/8  | 1.500   | 248.47      |
| 7003650  | 1-1/2    | 6     | Bottom | 4      | H4      | 3            | 6-3/8  | 1.500   | 248.47      |
| 7003651  | 1-1/2    | 6     | Set    | 4      | H4      | 3            | 6-3/8  | 1.500   | 745.40      |
| 7003652  | 1-1/2    | 12    | Taper  | 6      | H4      | 3            | 6-3/8  | 1.500   | 253.11      |
| 7003653  | 1-1/2    | 12    | Plug   | 6      | H4      | 3            | 6-3/8  | 1.500   | 253.11      |
| 7003654  | 1-1/2    | 12    | Bottom | 6      | H4      | 3            | 6-3/8  | 1.500   | 253.11      |
| 7003655  | 1-1/2    | 12    | Set    | 6      | H4      | 3            | 6-3/8  | 1.500   | 759.29      |

### 6" Extension Hand Tap

- GTD 5305 6" extension hand taps are designed for long reach applications
- Straight flute design
- For use in most production materials



| Part No. | Tap Size | Pitch | Type   | Flutes | H Limit | Thread Lgth. | OaL   | Decimal | Price /Each |
|----------|----------|-------|--------|--------|---------|--------------|-------|---------|-------------|
| 7003656  | 1/4      | 20    | Plug   | 4      | H3      | 1            | 6     | .250    | \$39.76     |
| 7003657  | 1/4      | 20    | Bottom | 4      | H3      | 1            | 6     | .250    | 39.76       |
| 7003658  | 1/4      | 28    | Plug   | 4      | H3      | 1            | 6     | .250    | 39.76       |
| 7003659  | 1/4      | 28    | Bottom | 4      | H3      | 1            | 6     | .250    | 39.76       |
| 7003660  | 5/16     | 18    | Plug   | 4      | H3      | 1-1/8        | 6     | .3125   | 41.38       |
| 7003661  | 5/16     | 18    | Bottom | 4      | H3      | 1-1/8        | 6     | .3125   | 41.38       |
| 7003662  | 5/16     | 24    | Plug   | 4      | H3      | 1-1/8        | 6     | .3125   | 41.38       |
| 7003663  | 5/16     | 24    | Bottom | 4      | H3      | 1-1/8        | 6     | .3125   | 41.38       |
| 7003664  | 3/8      | 16    | Plug   | 4      | H3      | 1-1/4        | 6     | .375    | 46.55       |
| 7003665  | 3/8      | 16    | Bottom | 4      | H3      | 1-1/4        | 6     | .375    | 46.55       |
| 7003666  | 3/8      | 24    | Plug   | 4      | H3      | 1-1/4        | 6     | .375    | 46.55       |
| 7003667  | 3/8      | 24    | Bottom | 4      | H3      | 1-1/4        | 6     | .375    | 46.55       |
| 7003733  | 6        | 32    | Plug   | 3      | H3      | 11/16        | 2     | .138    | 46.55       |
| 7003734  | 6        | 32    | Bottom | 3      | H3      | 11/16        | 2     | .138    | 46.55       |
| 7003735  | 8        | 32    | Plug   | 4      | H3      | 3/4          | 2-1/8 | .164    | 46.55       |
| 7003736  | 8        | 32    | Bottom | 4      | H3      | 3/4          | 2-1/8 | .164    | 46.55       |
| 7003737  | 10       | 24    | Plug   | 4      | H3      | 7/8          | 2-3/8 | .190    | 41.38       |
| 7003738  | 10       | 24    | Bottom | 4      | H3      | 7/8          | 2-3/8 | .190    | 41.38       |
| 7003739  | 10       | 32    | Plug   | 4      | H3      | 7/8          | 2-3/8 | .190    | 41.38       |
| 7003740  | 10       | 32    | Bottom | 4      | H3      | 7/8          | 2-3/8 | .190    | 41.38       |

### Metric Hand Tap



| Tap Size | Pitch   | Thread Flutes | Lgth.   | OaL     | Decimal | Taper    |             | Plug     |             | Bottoming |             | Set      |             |
|----------|---------|---------------|---------|---------|---------|----------|-------------|----------|-------------|-----------|-------------|----------|-------------|
|          |         |               |         |         |         | Part No. | Price /Each | Part No. | Price /Each | Part No.  | Price /Each | Part No. | Price /Each |
| M2       | 0.4 mm  | 3             | 7/16    | 1-3/4   | .07874  | 7003855  | \$17.49     | 7003856  | \$17.49     | 7003857   | \$17.49     | 7003858  | \$52.47     |
| M2.5     | 0.45 mm | 3             | 1/2     | 1-13/16 | .098425 | 7003859  | 10.78       |          |             |           |             |          |             |
| M3       | 0.5 mm  | 3             | 5/8     | 1-15/16 | .11811  | 7003860  | 8.98        | 7003861  | 8.98        | 7003862   | 8.98        | 7003863  | 26.91       |
| M3.5     | 0.6 mm  | 3             | 11/16   | 2       | .137795 | 7003864  | 7.39        |          |             |           |             |          |             |
| M4       | 0.7 mm  | 4             | 3/4     | 2-1/8   | .15748  | 7003866  | 7.39        | 7003867  | 7.39        | 7003868   | 7.39        | 7003869  | 22.16       |
| M4.5     | 0.75 mm | 4             | 7/8     | 2-3/8   | .177165 | 7003870  | 7.39        |          |             |           |             |          |             |
| M5       | 0.8 mm  | 4             | 7/8     | 2-3/8   | .19685  | 7003871  | 7.39        | 7003872  | 7.39        | 7003873   | 7.39        | 7003874  | 22.16       |
| M6       | 1 mm    | 4             | 1       | 2-1/2   | .23622  | 7003875  | 7.81        | 7003876  | 7.81        | 7003877   | 7.81        | 7003878  | 23.43       |
| M7       | 1 mm    | 4             | 1-1/8   | 2-23/32 | .27559  | 7003880  | 8.52        | 7003881  | 8.52        | 7003882   | 8.52        | 7003883  | 25.61       |
| M8       | 1.25 mm | 4             | 1-1/8   | 2-23/32 | .31496  | 7003884  | 8.52        | 7003885  | 8.52        | 7003886   | 8.52        | 7003887  | 25.61       |
| M10      | 1.5 mm  | 4             | 1-1/4   | 2-15/16 | .3937   | 7003889  | 10.58       | 7003890  | 10.58       | 7003891   | 10.58       | 7003892  | 31.70       |
| M12      | 1.75 mm | 4             | 1-21/32 | 3-3/8   | .47244  | 7003894  | 18.92       | 7003895  | 18.92       |           |             |          |             |
| M14      | 1.25 mm | 4             | 1-21/32 | 3-19/32 | .5112   | 7003899  | 28.26       |          |             |           |             |          |             |
| M14      | 2 mm    | 4             | 1-21/32 | 3-19/32 | .55118  | 7003900  | 28.27       | 7003901  | 28.27       | 7003902   | 28.27       | 7003903  | 84.81       |
| M16      | 2 mm    | 4             | 1-13/16 | 3-13/16 | .62992  | 7003904  | 34.43       | 7003905  | 34.43       | 7003906   | 34.43       | 7003907  | 103.30      |
| M18      | 1.5 mm  | 4             | 1-13/16 | 4-1/32  | .70866  | 7003908  | 46.31       |          |             |           |             |          |             |
| M18      | 2.5 mm  | 4             | 1-13/16 | 4-1/32  | .70866  | 7003909  | 46.31       | 7003910  | 46.31       | 7003911   | 46.31       | 7003912  | 138.93      |
| M20      | 2.5 mm  | 4             | 2       | 4-15/32 | .86614  | 7003913  | 63.05       | 7003914  | 63.05       | 7003915   | 63.05       | 7003916  | 189.11      |
| M24      | 3 mm    | 4             | 2-7/32  | 4-29/32 | .94488  | 7003917  | 87.69       | 7003918  | 87.69       | 7003919   | 87.69       | 7003920  | 263.03      |
| M30      | 3.5 mm  | 4             | 2-9/16  | 5-7/16  | 1.1811  | 7003921  | 193.60      | 7003922  | 193.60      | 7003923   | 193.60      | 7003924  | 580.84      |
| M36      | 4 mm    | 4             | 3       | 6-1/16  | 1.41732 | 7003925  | 245.32      | 7003926  | 245.32      | 7003927   | 245.32      | 7003928  | 735.93      |

## Taps Cont.



### EM-SS Spiral Fluted

- GTD EM-SS 8304 high performance spiral fluted taps are designed for stainless steel.
- Unique flute geometry, for blind hole tapping, pulls stringy chips up and out of the hole
- SH-50 black oxide surface treatment helps prevent galling.



| Part No. | Tap Size | Pitch | Type            | Thread Flutes | Lgth. | OaL     | Decimal | H Limit | Price /Each |
|----------|----------|-------|-----------------|---------------|-------|---------|---------|---------|-------------|
| 7004165  | 4        | 40    | Modified Bottom | 2             | .236  | 1-7/8   | .112    | H2      | \$22.50     |
| 7004166  | 4        | 48    | Modified Bottom | 2             | .236  | 1-7/8   | .112    | H2      | 22.50       |
| 7004167  | 5        | 40    | Bottom          | 3             | .236  | 1-15/16 | .125    | H2      | 22.50       |
| 7004168  | 5        | 40    | Modified Bottom | 3             | .236  | 1-15/16 | .125    | H2      | 22.50       |
| 7004169  | 6        | 32    | Bottom          | 3             | .276  | 2       | .138    | H3      | 17.89       |
| 7004170  | 6        | 40    | Bottom          | 3             | .276  | 2       | .138    | H3      | 17.89       |
| 7004171  | 6        | 32    | Modified Bottom | 3             | .276  | 2       | .138    | H3      | 17.89       |
| 7004172  | 6        | 40    | Modified Bottom | 3             | .276  | 2       | .138    | H3      | 17.89       |
| 7004173  | 8        | 32    | Bottom          | 3             | .276  | 2-1/8   | .164    | H3      | 17.89       |
| 7004174  | 8        | 32    | Modified Bottom | 3             | .276  | 2-1/8   | .164    | H3      | 17.89       |
| 7004175  | 8        | 36    | Modified Bottom | 3             | .276  | 2-1/8   | .164    | H3      | 17.89       |
| 7004176  | 10       | 24    | Bottom          | 3             | .354  | 2-3/8   | .190    | H3      | 18.32       |
| 7004177  | 10       | 32    | Bottom          | 3             | .276  | 2-3/8   | .190    | H3      | 18.32       |
| 7004178  | 10       | 24    | Modified Bottom | 3             | .354  | 2-3/8   | .190    | H3      | 18.32       |
| 7004179  | 10       | 32    | Modified Bottom | 3             | .276  | 2-3/8   | .190    | H3      | 18.32       |
| 7004180  | 12       | 24    | Modified Bottom | 3             | .354  | 2-3/8   | .216    | H3      | 20.18       |
| 7004181  | 12       | 28    | Modified Bottom | 3             | .276  | 2-3/8   | .216    | H3      | 20.18       |
| 7004182  | 1/4      | 20    | Bottom          | 3             | .433  | 2-1/2   | .250    | H3      | 20.18       |
| 7004183  | 1/4      | 28    | Bottom          | 3             | .354  | 2-1/2   | .250    | H3      | 20.18       |
| 7004184  | 1/4      | 20    | Modified Bottom | 3             | .433  | 2-1/2   | .250    | H3      | 20.18       |
| 7004185  | 1/4      | 28    | Modified Bottom | 3             | .354  | 2-1/2   | .250    | H3      | 20.18       |
| 7004186  | 5/16     | 18    | Bottom          | 3             | .472  | 2-23/32 | .3125   | H3      | 22.50       |
| 7004187  | 5/16     | 24    | Bottom          | 3             | .394  | 2-23/32 | .3125   | H3      | 22.50       |
| 7004188  | 5/16     | 18    | Modified Bottom | 3             | .472  | 2-23/32 | .3125   | H3      | 22.50       |
| 7004189  | 5/16     | 24    | Modified Bottom | 3             | .394  | 2-23/32 | .3125   | H3      | 22.50       |
| 7004190  | 3/8      | 16    | Bottom          | 3             | .551  | 2-15/16 | .375    | H3      | 25.06       |
| 7004191  | 3/8      | 24    | Bottom          | 3             | .394  | 2-15/16 | .375    | H3      | 25.06       |
| 7004192  | 3/8      | 16    | Modified Bottom | 3             | .551  | 2-15/16 | .375    | H3      | 25.06       |
| 7004193  | 3/8      | 24    | Modified Bottom | 3             | .394  | 2-15/16 | .375    | H3      | 25.06       |
| 7004194  | 7/16     | 14    | Bottom          | 3             | .591  | 3-5/32  | .4375   | H3      | 36.59       |
| 7004195  | 7/16     | 20    | Bottom          | 3             | .472  | 3-5/32  | .4375   | H3      | 36.59       |
| 7004196  | 7/16     | 14    | Modified Bottom | 3             | .591  | 3-5/32  | .4375   | H3      | 36.59       |
| 7004197  | 7/16     | 20    | Modified Bottom | 3             | .472  | 3-5/32  | .4375   | H3      | 36.59       |
| 7004198  | 1/2      | 13    | Bottom          | 3             | .630  | 3-3/8   | .500    | H3      | 44.57       |
| 7004199  | 1/2      | 20    | Bottom          | 3             | .472  | 3-3/8   | .500    | H3      | 44.57       |
| 7004200  | 1/2      | 13    | Modified Bottom | 3             | .630  | 3-3/8   | .500    | H3      | 44.57       |
| 7004201  | 1/2      | 20    | Modified Bottom | 3             | .472  | 3-3/8   | .500    | H3      | 44.57       |
| 7004202  | 9/16     | 12    | Bottom          | 3             | .709  | 3-19/32 | .5625   | H3      | 67.61       |
| 7004203  | 9/16     | 18    | Bottom          | 3             | .512  | 3-19/32 | .5625   | H3      | 67.61       |
| 7004204  | 9/16     | 12    | Modified Bottom | 3             | .709  | 3-19/32 | .5625   | H3      | 67.61       |
| 7004205  | 9/16     | 18    | Modified Bottom | 3             | .512  | 3-19/32 | .5625   | H3      | 67.61       |
| 7004206  | 5/8      | 11    | Bottom          | 3             | .748  | 3-13/16 | .625    | H3      | 74.25       |
| 7004207  | 5/8      | 18    | Bottom          | 3             | .512  | 3-13/16 | .625    | H3      | 74.25       |
| 7004208  | 5/8      | 11    | Modified Bottom | 3             | .748  | 3-13/16 | .625    | H3      | 74.25       |
| 7004209  | 5/8      | 18    | Modified Bottom | 3             | .512  | 3-13/16 | .625    | H3      | 74.25       |

## EM-SS Spiral Fluted Cont.

| Part No. | Tap Size | Pitch | Type            | Thread Flutes | Lgth. | OaL     | Decimal | H Limit | Price /Each |
|----------|----------|-------|-----------------|---------------|-------|---------|---------|---------|-------------|
| 7004210  | 3/4      | 10    | Bottom          | 4             | .827  | 4-1/4   | .7500   | H3      | \$95.94     |
| 7004211  | 3/4      | 16    | Bottom          | 4             | .591  | 4-1/4   | .7500   | H3      | 95.94       |
| 7004212  | 3/4      | 10    | Modified Bottom | 4             | .827  | 4-1/4   | .7500   | H3      | 95.94       |
| 7004213  | 3/4      | 16    | Modified Bottom | 4             | .591  | 4-1/4   | .7500   | H3      | 95.94       |
| 7004214  | 7/8      | 9     | Modified Bottom | 4             | .827  | 4-11/16 | .8750   | H4      | 142.27      |
| 7004215  | 7/8      | 14    | Modified Bottom | 4             | .709  | 4-11/16 | .8750   | H4      | 142.27      |
| 7004216  | 1        | 12    | Modified Bottom | 4             | .984  | 5-1/8   | 1.00    | H4      | 186.71      |
| 7004217  | 1        | 8     | Modified Bottom | 4             | .984  | 5-1/8   | 1.00    | H4      | 186.71      |
| 7004218  | 2        | 4-1/2 | Modified Bottom | 4             | 1.969 | 7-5/8   | 2.00    | H3      | 904.86      |
| 7004219  | 4        | 40    | Modified Bottom | 2             | .236  | 1-7/8   | .112    | H2      | 30.16       |
| 7004220  | 5        | 40    | Modified Bottom | 3             | .236  | 1-15/16 | .125    | H2      | 30.16       |
| 7004221  | 6        | 32    | Modified Bottom | 3             | .276  | 2       | .138    | H3      | 23.98       |
| 7004222  | 8        | 32    | Modified Bottom | 3             | .276  | 2-1/8   | .164    | H3      | 23.98       |
| 7004223  | 10       | 24    | Modified Bottom | 3             | .531  | 2-3/8   | .190    | H3      | 24.55       |
| 7004224  | 10       | 32    | Modified Bottom | 3             | .276  | 2-3/8   | .190    | H3      | 24.55       |
| 7004225  | 1/4      | 20    | Modified Bottom | 3             | .433  | 2-1/2   | .250    | H3      | 27.06       |
| 7004226  | 1/4      | 28    | Modified Bottom | 3             | .354  | 2-1/2   | .250    | H3      | 27.06       |
| 7004227  | 5/16     | 18    | Modified Bottom | 3             | .472  | 2-23/32 | .3125   | H3      | 30.16       |
| 7004228  | 5/16     | 24    | Modified Bottom | 3             | .394  | 2-23/32 | .3125   | H3      | 30.16       |
| 7004229  | 3/8      | 16    | Modified Bottom | 3             | .551  | 2-15/16 | .375    | H3      | 33.60       |
| 7004230  | 3/8      | 24    | Modified Bottom | 3             | .394  | 2-15/16 | .375    | H3      | 33.60       |
| 7004231  | 7/16     | 14    | Modified Bottom | 3             | .591  | 3-5/32  | .4375   | H3      | 49.02       |
| 7004232  | 7/16     | 20    | Modified Bottom | 3             | .472  | 3-16    | .4375   | H3      | 49.02       |
| 7004233  | 1/2      | 13    | Modified Bottom | 3             | .630  | 3-38    | .500    | H3      | 59.71       |
| 7004234  | 1/2      | 20    | Modified Bottom | 3             | .472  | 3-38    | .500    | H3      | 59.71       |
| 7004235  | 9/16     | 12    | Modified Bottom | 3             | .709  | 3-19/32 | .5625   | H3      | 90.59       |
| 7004236  | 9/16     | 18    | Modified Bottom | 3             | .512  | 3-19/32 | .5625   | H3      | 90.59       |
| 7004237  | 5/8      | 11    | Modified Bottom | 3             | .748  | 3-13/16 | .625    | H3      | 99.47       |
| 7004238  | 5/8      | 18    | Modified Bottom | 3             | .512  | 3-13/16 | .625    | H3      | 99.47       |
| 7004239  | 3/4      | 10    | Modified Bottom | 4             | .827  | 4-1/4   | .750    | H3      | 128.54      |
| 7004240  | 3/4      | 16    | Modified Bottom | 4             | .591  | 4-1/4   | .750    | H3      | 128.54      |
| 7004241  | 7/8      | 9     | Modified Bottom | 4             | .827  | 4-11/16 | .875    | H4      | 190.63      |
| 7004242  | 7/8      | 14    | Modified Bottom | 4             | .709  | 4-11/16 | .875    | H4      | 190.63      |
| 7004243  | 1.0      | 8 8   | Modified Bottom | 4             | .984  | 5-1/8   | 1.00    | H4      | 250.16      |

### High Hook Taper Taps

- GTD 5820 production, high hook, taper taps are ground thread and have a hook designed for use in ductile materials that produce long chips.
- NPT requires the use of a sealer while th NPTF provide a pressure tight joint.



| Tap Size | Pitch | Thread Flutes | Thread Lgth. | OaL    | Decimal | NPT      |             | NPTF     |             |
|----------|-------|---------------|--------------|--------|---------|----------|-------------|----------|-------------|
|          |       |               |              |        |         | Part No. | Price /Each | Part No. | Price /Each |
| 1/8      | 27    | 4             | 3/4          | 2-1/8  | .405    | 7004015  | \$25.50     | 7004016  | \$25.50     |
| 1/4      | 18    | 4             | 1-1/16       | 2-7/16 | .540    | 7004017  | 28.11       | 7004018  | 28.11       |
| 3/8      | 18    | 4             | 1-1/16       | 2-9/16 | .675    | 7004019  | 37.14       | 7004020  | 37.14       |
| 1/2      | 14    | 4             | 1-3/8        | 3-1/8  | .840    | 7004021  | 58.82       | 7004022  | 58.82       |
| 3/4      | 14    | 5             | 1-3/8        | 3-1/4  | 1.050   | 7004023  | 82.35       | 7004024  | 82.35       |





## Spiral Fluted Tap NEW CNC Neck Design

- GTD 5314 spiral fluted taps are designed for blind hole tapping
- Fast spiral flutes improve chip lifting action
- Plug chamfer taps have 3-5 pitches
- Bottoming chamfer taps have 1-2 pitches



| Part No.                 | Tap Size | Pitch | Flutes | Thread Lgth. | OaL     | Decimal | H Limit | Price /Each |
|--------------------------|----------|-------|--------|--------------|---------|---------|---------|-------------|
| <b>Plug Chamfer</b>      |          |       |        |              |         |         |         |             |
| 7003741                  | 4        | 40    | 2      | 9/16         | 1-7/8   | .112    | H2      | \$15.31     |
| 7003743                  | 5        | 40    | 2      | 5/8          | 1-15/16 | .125    | H2      | 15.31       |
| 7003745                  | 6        | 32    | 2      | 3/8          | 2       | .138    | H3      | 12.45       |
| 7003747                  | 8        | 32    | 3      | 3/8          | 2-1/8   | .164    | H3      | 12.45       |
| 7003749                  | 10       | 24    | 3      | 1/2          | 2-3/8   | .190    | H3      | 12.45       |
| 7003751                  | 10       | 32    | 3      | 1/2          | 2-3/8   | .190    | H3      | 12.45       |
| 7003753                  | 12       | 24    | 3      | 1/2          | 2-3/8   | .216    | H3      | 13.53       |
| 7003755                  | 1/4      | 20    | 3      | 5/8          | 2-1/2   | .250    | H3      | 13.53       |
| 7003757                  | 1/4      | 28    | 3      | 5/8          | 2-1/2   | .250    | H3      | 13.53       |
| 7003759                  | 5/16     | 18    | 3      | 11/16        | 2-23/32 | .3125   | H3      | 16.74       |
| 7003761                  | 5/16     | 24    | 3      | 11/16        | 2-23/32 | .3125   | H3      | 16.74       |
| 7003763                  | 3/8      | 16    | 3      | 3/4          | 2-15/16 | .375    | H3      | 19.36       |
| 7003765                  | 3/8      | 24    | 3      | 3/4          | 2-15/16 | .375    | H3      | 19.36       |
| 7003767                  | 7/16     | 14    | 3      | 7/8          | 3-5/32  | .4375   | H3      | 28.82       |
| 7003769                  | 7/16     | 20    | 3      | 7/8          | 3-5/32  | .4375   | H3      | 28.82       |
| 7003771                  | 1/2      | 13    | 3      | 15/16        | 3-3/8   | .500    | H3      | 33.88       |
| <b>Bottoming Chamfer</b> |          |       |        |              |         |         |         |             |
| 7003742                  | 4        | 40    | 2      | 9/16         | 1-7/8   | .112    | H2      | \$15.31     |
| 7003744                  | 5        | 40    | 2      | 5/8          | 1-15/16 | .125    | H2      | 15.31       |
| 7003746                  | 6        | 32    | 2      | 3/8          | 2       | .138    | H3      | 12.45       |
| 7003748                  | 8        | 32    | 3      | 3/8          | 2-1/8   | .164    | H3      | 12.45       |
| 7003750                  | 10       | 24    | 3      | 1/2          | 2-3/8   | .190    | H3      | 12.45       |
| 7003752                  | 10       | 32    | 3      | 1/2          | 2-3/8   | .190    | H3      | 12.45       |
| 7003754                  | 12       | 24    | 3      | 1/2          | 2-3/8   | .216    | H3      | 13.53       |
| 7003756                  | 1/4      | 20    | 3      | 5/8          | 2-1/2   | .250    | H3      | 13.53       |
| 7003758                  | 1/4      | 28    | 3      | 5/8          | 2-1/2   | .250    | H3      | 13.53       |
| 7003760                  | 5/16     | 18    | 3      | 11/16        | 2-23/32 | .3125   | H3      | 16.74       |
| 7003762                  | 5/16     | 24    | 3      | 11/16        | 2-23/32 | .3125   | H3      | 16.74       |
| 7003764                  | 3/8      | 16    | 3      | 3/4          | 2-15/16 | .375    | H3      | 19.36       |
| 7003766                  | 3/8      | 24    | 3      | 3/4          | 2-15/16 | .375    | H3      | 19.36       |
| 7003768                  | 7/16     | 14    | 3      | 7/8          | 3-5/32  | .4375   | H3      | 28.82       |
| 7003770                  | 7/16     | 20    | 3      | 7/8          | 3-5/32  | .4375   | H3      | 28.82       |
| 7003772                  | 1/2      | 13    | 3      | 15/16        | 3-3/8   | .500    | H3      | 33.88       |
| 7003773                  | 1/2      | 20    | 3      | 15/16        | 3-3/8   | .500    | H3      | 33.88       |
| 7003775                  | 5/8      | 11    | 4      | 1-3/32       | 3-13/16 | .625    | H3      | 59.74       |
| 7003777                  | 3/4      | 10    | 4      | 1-7/32       | 4-1/4   | .7500   | H3      | 77.02       |
| 7003774                  | 1/2      | 20    | 3      | 15/16        | 3-3/8   | .500    | H3      | 33.88       |
| 7003776                  | 5/8      | 11    | 4      | 1-3/32       | 3-13/16 | .625    | H3      | 59.74       |
| 7003778                  | 3/4      | 10    | 4      | 1-7/32       | 4-1/4   | .7500   | H3      | 77.02       |

## Spiral Point Production Taps

- GTD 5301 spiral point production taps are for through hole applications
- Spiral point flute geometry "shoot" chips ahead of the cutting action, reducing loading and clogging
- Design for through holes in general machining applications



| Part No.      | Tap Size | Pitch  | Flutes | Thread Lgth. | OaL     | Decimal | H Limit | Price /Each |
|---------------|----------|--------|--------|--------------|---------|---------|---------|-------------|
| 7003500       | 0        | 80     | 2      | 5/16         | 1-5/8   | .060    | H2      | \$16.90     |
| 7003501       | 1        | 64     | 2      | 3/8          | 1-11/16 | .073    | H2      | 15.42       |
| 7003502       | 1        | 72     | 2      | 3/8          | 1-11/16 | .073    | H2      | 15.42       |
| 7003503       | 2        | 56     | 2      | 7/16         | 1-3/4   | .086    | H2      | 12.92       |
| 7003504       | 2        | 64     | 2      | 7/16         | 1-3/4   | .086    | H2      | 14.72       |
| 7003505       | 3        | 48     | 2      | 1/2          | 1-13/16 | .099    | H2      | 10.45       |
| 7003506       | 3        | 56     | 2      | 1/2          | 1-13/16 | .099    | H2      | 11.57       |
| 7003507       | 4        | 36     | 2      | 9/16         | 1-7/8   | .112    | H2      | 10.45       |
| 7003508       | 4        | 40     | 2      | 9/16         | 1-7/8   | .112    | H2      | 8.38        |
| 7003509       | 4        | 48     | 2      | 9/16         | 1-7/8   | .112    | H2      | 9.66        |
| 7003510       | 5        | 40     | 2      | 5/8          | 1-15/16 | .125    | H2      | 8.38        |
| 7003511       | 5        | 44     | 2      | 5/8          | 1-15/16 | .125    | H2      | 9.66        |
| 7003512       | 6        | 32     | 2      | 11/16        | 2       | .138    | H3      | 7.02        |
| 7003513       | 8        | 32     | 2      | 3/4          | 2-1/8   | .164    | H3      | 7.02        |
| 7003514       | 10       | 24     | 2      | 7/8          | 2-3/8   | .190    | H3      | 7.02        |
| 7003515       | 10       | 32     | 2      | 7/8          | 2-3/8   | .190    | H3      | 7.02        |
| 7003516       | 12       | 24     | 2      | 15/16        | 2-3/8   | .216    | H3      | 8.01        |
| 7003517       | 12       | 28     | 2      | 15/16        | 2-3/8   | .216    | H3      | 8.01        |
| 7003518       | 1/4      | 20     | 2      | 1            | 2-1/2   | .250    | H3      | 7.02        |
| 7003519       | 1/4      | 20     | 3      | 1            | 2-1/2   | .250    | H3      | 8.73        |
| 7003520       | 1/4      | 28     | 2      | 1            | 2-1/2   | .250    | H3      | 7.02        |
| 7003521       | 5/16     | 18     | 2      | 1-1/8        | 2-23/32 | .3125   | H3      | 7.59        |
| 7003522       | 5/16     | 18     | 3      | 1-1/8        | 2-23/32 | .3125   | H3      | 10.01       |
| 7003523       | 5/16     | 24     | 2      | 1-1/8        | 2-23/32 | .3125   | H3      | 7.59        |
| 7003524       | 3/8      | 16     | 3      | 1-1/4        | 2-15/16 | .375    | H3      | 9.02        |
| 7003525       | 3/8      | 24     | 3      | 1-1/4        | 2-15/16 | .375    | H3      | 9.66        |
| 7003526       | 7/16     | 14     | 3      | 1-7/16       | 3-5/32  | .4375   | H3      | 15.42       |
| 7003527       | 7/16     | 20     | 3      | 1-7/16       | 3-5/32  | .4375   | H3      | 15.42       |
| 7003528       | 1/2      | 13     | 3      | 1-21/32      | 3-3/8   | .500    | H3      | 15.64       |
| 7003529       | 1/2      | 20     | 3      | 1-21/32      | 3-3/8   | .500    | H3      | 18.24       |
| 7003530       | 5/8      | 11     | 3      | 1-13/16      | 3-13/16 | .625    | H3      | 35.49       |
| 7003531       | 5/8      | 18     | 3      | 1-13/16      | 3-13/16 | .625    | H3      | 35.49       |
| 7003532       | 3/4      | 10     | 3      | 2            | 4-1/4   | .7500   | H3      | 50.27       |
| <b>Metric</b> |          |        |        |              |         |         |         |             |
| 7003836       | M1.6     | 0.35mm | 2      | 5/16         | 1-5/8   | .062992 | D3      | \$19.47     |
| 7003837       | M2       | 0.4mm  | 2      | 7/16         | 1-3/4   | .07874  | D3      | 18.04       |
| 7003838       | M2.5     | 0.45mm | 2      | 1/2          | 1-13/16 | .098425 | D3      | 12.98       |
| 7003839       | M3       | 0.5mm  | 2      | 5/8          | 1-15/16 | .11811  | D3      | 10.38       |
| 7003840       | M3.5     | 0.6mm  | 2      | 11/16        | 2       | .137795 | D4      | 8.98        |
| 7003841       | M4       | 0.7mm  | 2      | 3/4          | 2-1/8   | .15748  | D4      | 8.98        |
| 7003842       | M4.5     | 0.75mm | 2      | 7/8          | 2-3/8   | .177165 | D4      | 8.98        |
| 7003843       | M5       | 0.8mm  | 2      | 7/8          | 2-3/8   | .19685  | D4      | 8.98        |
| 7003844       | M6       | 1mm    | 2      | 1            | 2-1/2   | .23622  | D5      | 8.98        |
| 7003847       | M8       | 1.25mm | 2      | 1-1/8        | 2-23/32 | .31496  | D5      | 10.38       |
| 7003848       | M10      | 1.5mm  | 3      | 1-1/4        | 2-15/16 | .3937   | D6      | 10.65       |
| 7003849       | M12      | 1.75mm | 3      | 1-21/32      | 3-3/8   | .47244  | D6      | 21.13       |
| 7003850       | M14      | 2mm    | 3      | 1-21/32      | 3-19/32 | .55118  | D7      | 31.24       |
| 7003851       | M16      | 2mm    | 3      | 1-13/16      | 3-13/16 | .62992  | D7      | 36.52       |
| 7003852       | M18      | 2.5mm  | 3      | 1-13/16      | 4-1/32  | .70866  | D7      | 53.04       |
| 7003853       | M20      | 2.5mm  | 4      | 2            | 4-15/32 | .86614  | D7      | 70.07       |

## Taps Cont.



### EM-MS Mold Hand Taps

- GTD EM-MS 8330 mold hand taps have a plug chamfer.
- Special geometry improves toughness in mold steel (30-45Rc).
- Manufactured from premium cobalt HSS.



| Part No. | Tap Size | Pitch | Flutes | Thread Lgth. | OaL     | Decimal | H Limit | Price /Each |
|----------|----------|-------|--------|--------------|---------|---------|---------|-------------|
| 7004271  | 4        | 40    | 3      | 9/16         | 1-7/8   | .112    | H2      | \$16.00     |
| 7004272  | 5        | 40    | 3      | 5/8          | 1-15/16 | .125    | H2      | 16.00       |
| 7004273  | 6        | 32    | 3      | 11/16        | 2       | .138    | H3      | 13.12       |
| 7004274  | 8        | 32    | 3      | 3/4          | 2-1/8   | .164    | H3      | 13.12       |
| 7004275  | 10       | 24    | 3      | 7/8          | 2-3/8   | .190    | H3      | 13.12       |
| 7004276  | 10       | 32    | 3      | 7/8          | 2-3/8   | .190    | H3      | 13.12       |
| 7004277  | 1/4      | 20    | 3      | 1            | 2-1/2   | .250    | H3      | 14.46       |
| 7004278  | 1/4      | 28    | 3      | 1            | 2-1/2   | .250    | H3      | 14.46       |
| 7004279  | 5/16     | 18    | 4      | 1-1/8        | 2-23/32 | .3125   | H3      | 16.59       |
| 7004280  | 5/16     | 24    | 4      | 1-1/8        | 2-23/32 | .3125   | H3      | 16.59       |
| 7004281  | 3/8      | 16    | 4      | 1-1/4        | 2-15/16 | .375    | H3      | 18.68       |
| 7004282  | 3/8      | 24    | 4      | 1-1/4        | 2-15/16 | .375    | H3      | 18.68       |
| 7004283  | 7/16     | 14    | 4      | 1-7/16       | 3-5/32  | .4375   | H3      | 24.95       |
| 7004284  | 7/16     | 20    | 4      | 1-7/16       | 3-5/32  | .4375   | H3      | 24.95       |
| 7004285  | 1/2      | 13    | 4      | 1-21/32      | 3-3/8   | .500    | H3      | 27.02       |
| 7004286  | 1/2      | 20    | 4      | 1-21/32      | 3-3/8   | .500    | H3      | 27.02       |
| 7004287  | 5/8      | 11    | 4      | 1-13/16      | 3-13/16 | .625    | H3      | 54.07       |
| 7004288  | 5/8      | 18    | 4      | 1-13/16      | 3-13/16 | .625    | H3      | 54.07       |
| 7004289  | 3/4      | 10    | 4      | 2            | 4-1/4   | .7500   | H3      | 74.82       |
| 7004290  | 3/4      | 16    | 4      | 2            | 4-1/4   | .7500   | H3      | 74.82       |

### Tru Lede® Thread Forming Taps Plugs

- GTD 5500 thread forming taps displace metal as opposed to removing metal so there are no chips to clog the threaded hole.
- Tapping speeds can double conventional cutting.
- Normally used in softer metals.



| Part No.            | Tap Size | Pitch | Thread Lgth. | OaL     | Decimal | H Limit | Price /Each |
|---------------------|----------|-------|--------------|---------|---------|---------|-------------|
| <b>Plug Chamfer</b> |          |       |              |         |         |         |             |
| 7003929             | 4        | 40    | 9/16         | 1-7/8   | .112    | H3      | \$15.97     |
| 7003930             | 4        | 40    | 9/16         | 1-7/8   | .112    | H5      | 15.97       |
| 7003932             | 5        | 40    | 5/8          | 1-15/16 | .125    | H3      | 15.97       |
| 7003933             | 6        | 32    | 3/8          | 2       | .138    | H3      | 13.14       |
| 7003934             | 6        | 32    | 3/8          | 2       | .138    | H5      | 13.14       |
| 7003935             | 6        | 40    | 3/8          | 2       | .138    | H3      | 13.14       |
| 7003936             | 6        | 40    | 3/8          | 2       | .138    | H5      | 13.14       |
| 7003937             | 8        | 32    | 3/8          | 2-1/8   | .164    | H3      | 13.14       |
| 7003938             | 8        | 32    | 3/8          | 2-1/8   | .164    | H5      | 13.14       |
| 7003939             | 10       | 24    | 1/2          | 2-3/8   | .190    | H4      | 13.14       |

## Tru Lede® Thread Forming Taps Cont.

| Part No. | Tap Size | Pitch   | Thread Lgth. | OaL     | Decimal | H Limit | Price /Each |
|----------|----------|---------|--------------|---------|---------|---------|-------------|
| 7003940  | 10       | 24      | 1/2          | 2-3/8   | .190    | H6      | \$13.14     |
| 7003941  | 10       | 32      | 7/16         | 2-3/8   | .190    | H4      | 13.14       |
| 7003942  | 10       | 32      | 7/16         | 2-3/8   | .190    | H6      | 13.14       |
| 7003943  | 12       | 24      | 5/8          | 2-3/8   | .216    | H4      | 13.95       |
| 7003944  | 12       | 24      | 5/8          | 2-3/8   | .216    | H6      | 13.95       |
| 7003945  | 1/4      | 20      | 5/8          | 2-1/2   | .250    | H4      | 13.95       |
| 7003946  | 1/4      | 20      | 5/8          | 2-1/2   | .250    | H6      | 13.95       |
| 7003947  | 1/4      | 28      | 11/16        | 2-1/2   | .250    | H4      | 13.95       |
| 7003948  | 1/4      | 28      | 11/16        | 2-1/2   | .250    | H6      | 13.95       |
| 7003949  | 5/16     | 18      | 11/16        | 2-23/32 | .3125   | H5      | 15.51       |
| 7003950  | 5/16     | 18      | 11/16        | 2-23/32 | .3125   | H7      | 15.51       |
| 7003951  | 5/16     | 24      | 3/4          | 2-23/32 | .3125   | H5      | 15.51       |
| 7003952  | 5/16     | 24      | 3/4          | 2-23/32 | .3125   | H7      | 15.51       |
| 7003953  | 3/8      | 16      | 3/4          | 2-15/16 | .375    | H5      | 17.69       |
| 7003954  | 3/8      | 16      | 3/4          | 2-15/16 | .375    | H7      | 17.69       |
| 7003955  | 3/8      | 24      | 1-1/4        | 2-15/16 | .375    | H5      | 17.69       |
| 7003956  | 7/16     | 14      | 7/8          | 3-5/32  | .4375   | H8      | 18.37       |
| 7003957  | 1/2      | 13      | 1-21/32      | 3-3/8   | .500    | H5      | 30.12       |
| 7003958  | 1/2      | 13      | 1-21/32      | 3-3/8   | .500    | H8      | 30.12       |
| 7003959  | 1/2      | 1-21/32 | 20           | 3-3/8   | .500    | H5      | 30.12       |
| 7003960  | 5/8      | 1-13/16 | 11           | 3-13/16 | .625    | H7      | 42.93       |
| 7003961  | 5/8      | 1-13/16 | 18           | 3-13/16 | .625    | H7      | 42.93       |
| 7003962  | 3/4      | 2       | 10           | 4-1/4   | .7500   | H7      | 55.86       |
| 7003963  | 3/4      | 2       | 16           | 4-1/4   | .7500   | H7      | 55.86       |

### Bottoming Chamfer

|         |      |    |         |         |       |    |         |
|---------|------|----|---------|---------|-------|----|---------|
| 7003964 | 0    | 80 | 5/16    | 1-5/8   | .060  | H2 | \$17.80 |
| 7003965 | 0    | 80 | 5/16    | 1-5/8   | .060  | H3 | 17.80   |
| 7003966 | 1    | 64 | 3/8     | 1-11/16 | .073  | H2 | 17.80   |
| 7003967 | 1    | 72 | 3/8     | 1-11/16 | .073  | H2 | 17.80   |
| 7003968 | 1    | 72 | 3/8     | 1-11/16 | .073  | H3 | 17.80   |
| 7003969 | 2    | 56 | 7/16    | 1-3/4   | .086  | H2 | 17.69   |
| 7003970 | 2    | 56 | 7/16    | 1-3/4   | .086  | H3 | 17.69   |
| 7003973 | 3    | 48 | 1/2     | 1-13/16 | .099  | H2 | 17.69   |
| 7003974 | 3    | 48 | 1/2     | 1-13/16 | .099  | H3 | 17.69   |
| 7003975 | 3    | 56 | 1/2     | 1-13/16 | .099  | H3 | 17.69   |
| 7003976 | 4    | 40 | 9/16    | 1-7/8   | .112  | H3 | 15.97   |
| 7003977 | 4    | 40 | 9/16    | 1-7/8   | .112  | H5 | 15.97   |
| 7003980 | 5    | 40 | 5/8     | 1-15/16 | .125  | H3 | 15.97   |
| 7003981 | 5    | 40 | 5/8     | 1-15/16 | .125  | H5 | 15.97   |
| 7003982 | 6    | 32 | 3/8     | 2       | .138  | H3 | 13.14   |
| 7003983 | 6    | 32 | 3/8     | 2       | .138  | H5 | 13.14   |
| 7003986 | 8    | 32 | 3/8     | 2-1/8   | .164  | H3 | 13.14   |
| 7003987 | 8    | 32 | 3/8     | 2-1/8   | .164  | H5 | 13.14   |
| 7003990 | 10   | 24 | 7/16    | 2-3/8   | .190  | H4 | 13.14   |
| 7003991 | 10   | 24 | 7/16    | 2-3/8   | .190  | H6 | 13.14   |
| 7003992 | 10   | 32 | 5/8     | 2-3/8   | .190  | H4 | 13.14   |
| 7003993 | 10   | 32 | 5/8     | 2-3/8   | .190  | H6 | 13.14   |
| 7003994 | 12   | 24 | 5/8     | 2-3/8   | .216  | H4 | 13.95   |
| 7003995 | 12   | 24 | 5/8     | 2-3/8   | .216  | H6 | 13.95   |
| 7003996 | 1/4  | 20 | 11/16   | 2-1/2   | .250  | H4 | 13.95   |
| 7003997 | 1/4  | 20 | 11/16   | 2-1/2   | .250  | H6 | 13.95   |
| 7003998 | 1/4  | 28 | 11/16   | 2-1/2   | .250  | H4 | 13.95   |
| 7003999 | 1/4  | 28 | 11/16   | 2-1/2   | .250  | H6 | 13.95   |
| 7004000 | 5/16 | 18 | 3/4     | 2-23/32 | .3125 | H5 | 15.51   |
| 7004001 | 5/16 | 18 | 3/4     | 2-23/32 | .3125 | H7 | 15.51   |
| 7004002 | 5/16 | 24 | 3/4     | 2-23/32 | .3125 | H5 | 15.51   |
| 7004003 | 5/16 | 24 | 3/4     | 2-23/32 | .3125 | H7 | 15.51   |
| 7004004 | 3/8  | 16 | 1-1/4   | 2-15/16 | .375  | H5 | 17.69   |
| 7004005 | 3/8  | 16 | 1-1/4   | 2-15/16 | .375  | H7 | 17.69   |
| 7004006 | 3/8  | 24 | 1-1/4   | 2-15/16 | .375  | H5 | 17.69   |
| 7004008 | 1/2  | 13 | 1-21/32 | 3-3/8   | .500  | H5 | 30.12   |
| 7004009 | 1/2  | 13 | 1-21/32 | 3-3/8   | .500  | H8 | 30.12   |
| 7004010 | 1/2  | 20 | 1-21/32 | 3-3/8   | .500  | H5 | 30.12   |
| 7004012 | 5/8  | 18 | 1-13/16 | 3-13/16 | .625  | H7 | 42.93   |

# TAPS

## Taps Cont.



Cutting Tools

### Taps

| M/M Size | Spiral Point Plug Style |         |        |             | Taper Style |         |        |             | Plug Style |         |        |             | Bottoming Style |         |        |             |
|----------|-------------------------|---------|--------|-------------|-------------|---------|--------|-------------|------------|---------|--------|-------------|-----------------|---------|--------|-------------|
|          | Part No.                | D Limit | Flutes | Price /Each | Part No.    | D Limit | Flutes | Price /Each | Part No.   | D Limit | Flutes | Price /Each | Part No.        | D Limit | Flutes | Price /Each |
| 3-0.5    | 55605                   | D3      | 2      | \$9.10      | 55602       | D3      | 3      | \$9.28      | 55603      | D3      | 3      | \$9.28      | 55604           | D3      | 3      | \$9.28      |
| 4-0.7    | 55610                   | D4      | 2      | 9.10        | 55607       | D4      | 4      | 7.35        | 55608      | D4      | 4      | 7.35        | 55609           | D4      | 4      | 7.35        |
| 4.5-0.75 |                         |         |        |             | 55612       | D4      | 4      | 7.35        | 55613      | D4      | 4      | 7.35        | 55614           | D4      | 4      | 7.35        |
| 5-0.8    | 55620                   | D4      | 2      | 9.10        | 55617       | D4      | 4      | 7.35        | 55618      | D4      | 4      | 7.35        | 55619           | D4      | 4      | 7.35        |
| 5.5-0.9  | 55625                   | D3      | 2      | 68.16       | 55622       | D3      | 4      | 69.80       | 55623      | D3      | 4      | 69.80       | 55624           | D3      | 4      | 69.80       |
| 6-1.0    | 55630                   | D5      | 2      | 9.10        | 55627       | D5      | 4      | 7.35        | 55628      | D5      | 4      | 7.35        | 55629           | D5      | 4      | 7.35        |
| 7-1.0    | 55635                   | D5      | 2      | 10.15       | 55632       | D5      | 4      | 9.10        | 55633      | D5      | 4      | 9.10        | 55634           | D5      | 4      | 9.10        |
| 8-1.0    | 55640                   | D5      | 2      | 15.23       | 55637       | D5      | 4      | 9.10        | 55638      | D5      | 4      | 9.10        | 55639           | D5      | 4      | 9.10        |
| 8-1.25   | 55645                   | D5      | 2      | 8.40        | 55642       | D5      | 4      | 10.50       | 55643      | D5      | 4      | 10.50       | 55644           | D5      | 4      | 10.50       |
| 10-1.0   | 55650                   | D5      | 3      | 24.00       | 55647       | D5      | 4      | 24.00       | 55648      | D5      | 4      | 24.00       | 55649           | D5      | 4      | 24.00       |
| 10-1.25  | 55655                   | D5      | 3      | 23.63       | 55652       | D5      | 4      | 12.60       | 55653      | D5      | 4      | 12.60       | 55654           | D5      | 4      | 12.60       |
| 10-1.5   | 55660                   | D6      | 3      | 14.88       | 55657       | D6      | 4      | 12.25       | 55658      | D6      | 4      | 12.25       | 55659           | D6      | 4      | 12.25       |
| 12-1.25  | 55665                   | D5      | 3      | 26.25       | 55662       | D5      | 4      | 16.28       | 55663      | D5      | 4      | 16.28       | 55664           | D5      | 4      | 16.28       |
| 12-1.5   | 55670                   | D5      | 3      | 33.90       | 55667       | D5      | 4      | 33.90       | 55668      | D5      | 4      | 33.90       | 55669           | D5      | 4      | 33.90       |
| 12-1.75  | 55675                   | D6      | 3      | 15.75       | 55672       | D6      | 4      | 16.28       | 55673      | D6      | 4      | 16.28       | 55674           | D6      | 4      | 16.28       |
| 14-1.25  | 55680                   | D5      | 3      | 41.38       | 55677       | D5      | 4      | 41.38       | 55678      | D5      | 4      | 41.38       | 55679           | D5      | 4      | 41.38       |
| 14-1.5   | 55685                   | D6      | 3      | 26.25       | 55682       | D6      | 4      | 25.38       | 55683      | D6      | 4      | 25.38       | 55684           | D6      | 4      | 25.38       |
| 14-2.0   | 55690                   | D7      | 3      | 26.25       | 55687       | D7      | 4      | 25.38       | 55688      | D7      | 4      | 25.38       | 55689           | D7      | 4      | 25.38       |
| 16-1.5   | 55695                   | D6      | 3      | 29.75       | 55692       | D6      | 4      | 28.88       | 55693      | D6      | 4      | 28.88       | 55694           | D6      | 4      | 28.88       |
| 16-2.0   | 55700                   | D7      | 3      | 29.75       | 55697       | D7      | 4      | 28.88       | 55698      | D7      | 4      | 28.88       | 55699           | D7      | 4      | 28.88       |
| 18-1.0   | 55710                   | D5      | 3      | 78.00       | 55702       | D5      | 4      | 35.00       | 55703      | D5      | 4      | 35.00       | 55704           | D5      | 4      | 35.00       |
| 18-1.5   |                         |         |        |             | 55707       | D6      | 4      | 41.48       | 55708      | D6      | 4      | 41.48       | 55709           | D6      | 4      | 41.48       |
| 18-2.5   | 55715                   | D7      | 3      | 73.50       | 55712       | D7      | 4      | 41.48       | 55713      | D7      | 4      | 41.48       | 55714           | D7      | 4      | 41.48       |
| 20-2.5   | 55720                   | D7      | 3      | 91.00       | 55717       | D7      | 4      | 54.25       | 55718      | D7      | 4      | 54.25       | 55719           | D7      | 4      | 54.25       |
| 22-2.5   |                         |         |        |             | 55722       | D7      | 4      | 62.13       | 55723      | D7      | 4      | 62.13       | 55724           | D7      | 4      | 62.13       |
| 24-3.0   |                         |         |        |             | 55727       | D8      | 4      | 62.13       | 55728      | D8      | 4      | 62.13       | 55729           | D8      | 4      | 62.13       |

# REGAL CUTTING TOOLS

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## Pipe Taps



### Straight Pipe Tap

- GTD 5321 straight pipe taps are manufactured from select HSS.
- NPS threads are for tapping holes or couplings when used with a sealer.

| Tap Size | Pitch  | Flutes | Thread Lgth. | NPS    |         |          | NPSF        |          |             |
|----------|--------|--------|--------------|--------|---------|----------|-------------|----------|-------------|
|          |        |        |              | OaL    | Decimal | Part No. | Price /Each | Part No. | Price /Each |
| 1/8      | 27     | 4      | 3/4          | 2-1/8  | .405    | 7003801  | \$27.54     | 7003803  | \$27.54     |
| 1/8      | 27     | 4      | 3/4          | 2-1/8  | .405    | 7003802  | 27.54       | 7003804  | 27.54       |
| 1/4      | 18     | 4      | 1-1/16       | 2-7/16 | .540    | 7003805  | 30.58       | 7003806  | 30.58       |
| 3/8      | 18     | 4      | 1-1/16       | 2-9/16 | .675    | 7003807  | 40.01       | 7003808  | 40.01       |
| 1/2      | 14     | 4      | 1-3/8        | 3-1/8  | .840    | 7003809  | 63.79       | 7003810  | 63.79       |
| 3/4      | 14     | 5      | 1-3/8        | 3-1/4  | 1.050   | 7003811  | 89.50       | 7003812  | 89.50       |
| 1        | 11-1/2 | 5      | 1-3/4        | 3-3/4  | 1.315   | 7003813  | 136.00      |          |             |

### EM-SS Spiral Fluted Pipe Taps

- GTD EM-SS 8321 spiral fluted taps have slow spiral flute geometry which improves thread finish when tapping stainless steels.
- High performance taps for tapping in stainless steel > 30Rc.
- The SH50 black oxide treatment helps prevent galling.
- NPT threads require a sealer.



| Part No. | Tap Size | Pitch  | Style | Thread Flutes | Lgth.  | OaL    | Decimal | H Limit | Price   |
|----------|----------|--------|-------|---------------|--------|--------|---------|---------|---------|
|          |          |        |       |               |        |        |         |         | /Each   |
| 7004249  | 1/16     | 27     | NPT   | 4             | 11/16  | 2-1/8  | .3125   | N/A     | \$34.08 |
| 7004250  | 1/16     | 27     | NPTF  | 4             | 11/16  | 2-1/8  | .3125   | N/A     | 34.08   |
| 7004251  | 1/8      | 27     | NPT   | 4             | 3/4    | 2-1/8  | .405    | N/A     | 36.23   |
| 7004252  | 1/8      | 27     | NPT   | 4             | 3/4    | 2-1/8  | .405    | N/A     | 34.08   |
| 7004253  | 1/8      | 27     | NPTF  | 4             | 3/4    | 2-1/8  | .405    | N/A     | 36.23   |
| 7004254  | 1/8      | 27     | NPTF  | 4             | 3/4    | 2-1/8  | .405    | N/A     | 34.08   |
| 7004255  | 1/4      | 18     | NPT   | 4             | 1-1/16 | 2-7/16 | .540    | N/A     | 37.51   |
| 7004256  | 1/4      | 18     | NPTF  | 4             | 1-1/16 | 2-7/16 | .540    | N/A     | 37.51   |
| 7004257  | 3/8      | 18     | NPT   | 4             | 1-1/16 | 2-9/16 | .675    | N/A     | 49.50   |
| 7004258  | 3/8      | 18     | NPTF  | 4             | 1-1/16 | 2-9/16 | .675    | N/A     | 49.50   |
| 7004259  | 1/2      | 14     | NPT   | 4             | 1-3/8  | 3-1/8  | .840    | N/A     | 78.81   |
| 7004260  | 1/2      | 14     | NPTF  | 4             | 1-3/8  | 3-1/8  | .840    | N/A     | 78.81   |
| 7004261  | 3/4      | 14     | NPT   | 4             | 1-3/8  | 3-1/4  | 1.050   | N/A     | 110.03  |
| 7004262  | 3/4      | 14     | NPTF  | 4             | 1-3/8  | 3-1/4  | 1.050   | N/A     | 110.03  |
| 7004263  | 1        | 11-1/2 | NPT   | 4             | 1-3/4  | 3-3/4  | 1.315   | N/A     | 167.33  |
| 7004264  | 1        | 11-1/2 | NPTF  | 4             | 1-3/4  | 3-3/4  | 1.315   | N/A     | 167.33  |
| 7004265  | 1-1/4    | 11-1/2 | NPT   | 5             | 1-3/4  | 4      | 1.660   | N/A     | 165.33  |
| 7004266  | 1-1/4    | 11-1/2 | NPTF  | 5             | 1-3/4  | 4      | 1.660   | N/A     | 165.33  |
| 7004267  | 1-1/2    | 11-1/2 | NPT   | 7             | 1-3/4  | 4-1/4  | 1.900   | N/A     | 220.44  |
| 7004268  | 1-1/2    | 11-1/2 | NPTF  | 7             | 1-3/4  | 4-1/4  | 1.900   | N/A     | 220.44  |
| 7004269  | 2        | 11-1/2 | NPT   | 7             | 1-3/4  | 4-1/2  | 2.375   | N/A     | 300.19  |
| 7004270  | 2        | 11-1/2 | NPTF  | 7             | 1-3/4  | 4-1/2  | 2.375   | N/A     | 300.19  |

### EM-MS NPT Pipe Taps

- GTD EM-MS 8320 NPT Taper pipe taps are for tapping in mold steels.
- Special geometry and materials improve tap toughness.
- Manufactured from premium cobalt HSS.



| Part No. | Tap Size | Pitch | Flutes | Thread Lgth. | OaL    | Decimal | H Limit | Price   |
|----------|----------|-------|--------|--------------|--------|---------|---------|---------|
|          |          |       |        |              |        |         |         | /Each   |
| 7004244  | 1/8      | 27    | 4      | 3/4          | 2-1/8  | .405    | N/A     | \$45.68 |
| 7004245  | 1/4      | 18    | 4      | 1-1/16       | 2-7/16 | .540    | N/A     | 49.86   |
| 7004246  | 3/8      | 18    | 4      | 1-1/16       | 2-9/16 | .675    | N/A     | 66.62   |
| 7004247  | 1/2      | 14    | 4      | 1-3/8        | 3-1/8  | .840    | N/A     | 103.75  |
| 7004248  | 3/4      | 14    | 5      | 1-3/8        | 3-1/4  | 1.050   | N/A     | 145.26  |
| 7004249  | 1/16     | 27    | 4      | 11/16        | 2-1/8  | .3125   | N/A     | 34.08   |

### NPT Taper Pipe Taps

- HSS and carbon pipe taps
- Spiral flute design for stringy chip applications



**FASTENAL**

**norseman**  
DRILL & TOOL

| Size         | Flutes | Fastenal Premium |         | Norseman Carbon Taps |        |
|--------------|--------|------------------|---------|----------------------|--------|
|              |        | Part No.         | Price   | Part No.             | Price  |
| 1/16-27      | 4      | 0326932          | \$17.06 |                      |        |
| 1/8-27       | 4      | 0326933          | 17.60   | 55283                | \$6.16 |
| 1/4-18       | 4      | 0326934          | 19.45   | 55284                | 7.98   |
| 3/8-18       | 4      | 0326935          | 23.12   | 55285                | 9.96   |
| 1/2-14       | 4      | 0326936          | 31.49   | 55286                | 21.05  |
| 3/4-14       | 5      | 0326937          | 48.34   | 55287                | 22.47  |
| 1-11-1/2     | 5      | 0326938          | 71.34   | 55288                | 39.62  |
| 1-1/4-11-1/2 | 5      | 0326939          | 113.97  | 55289                | 62.97  |
| 1-1/2-11-1/2 | 7      | 0326940          | 155.60  | 55290                | 85.04  |
| 2-11-1/2     | 7      | 0326941          | 254.16  | 55291                | 166.04 |

### Taper Pipe Tap, NPT, NPTF

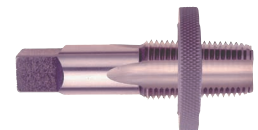
- GTD 5320 taper pipe taps are manufactured from select HSS.
- NPT threads require the use of a sealer while the NPTF threads provide a pressure tight joint.



| Tap Size | Pitch  | Flutes | Thread Lgth. | OaL    | Decimal | NPT      |             | NPTF     |             |
|----------|--------|--------|--------------|--------|---------|----------|-------------|----------|-------------|
|          |        |        |              |        |         | Part No. | Price /Each | Part No. | Price /Each |
| 1/16     | 27     | 4      | 11/16        | 2-1/8  | .3125   | 7003779  | \$25.50     | 7003780  | \$25.50     |
| 1/8      | 27     | 4      | 3/4          | 2-1/8  | .405    | 7003781  | 25.50       | 7003783  | 25.50       |
| 1/8      | 27     | 4      | 3/4          | 2-1/8  | .405    | 7003782  | 25.50       | 7003784  | 25.50       |
| 1/4      | 18     | 4      | 1-1/16       | 2-7/16 | .540    | 7003785  | 28.11       | 7003786  | 28.11       |
| 3/8      | 18     | 4      | 1-1/16       | 2-9/16 | .675    | 7003787  | 37.14       | 7003788  | 37.14       |
| 1/2      | 14     | 4      | 1-3/8        | 3-1/8  | .840    | 7003789  | 58.82       | 7003790  | 58.82       |
| 3/4      | 14     | 5      | 1-3/8        | 3-1/4  | 1.050   | 7003791  | 82.35       | 7003792  | 82.35       |
| 1        | 11-1/2 | 5      | 1-3/4        | 3-3/4  | 1.315   | 7003793  | 124.65      | 7003794  | 124.65      |
| 1-1/4    | 11-1/2 | 5      | 1-3/4        | 4      | 1.660   | 7003795  | 179.03      | 7003796  | 179.03      |
| 1-1/2    | 11-1/2 | 7      | 1-3/4        | 4-1/4  | 1.900   | 7003797  | 240.22      | 7003798  | 240.22      |
| 2        | 11-1/2 | 7      | 1-3/4        | 4-1/2  | 2.375   | 7003799  | 325.20      | 7003800  | 325.20      |

### Short Projection Taper Pipe Taps

- GTD 5329PTF short projection taps are used when the depth of tapping is limited, as in a bend in a pipe.
- Image denotes gage which does not come with the tap.



| Part No. | Tap Size | Pitch  | Flutes | Thread Lgth. | OaL    | Decimal | Price   |
|----------|----------|--------|--------|--------------|--------|---------|---------|
|          |          |        |        |              |        |         | /Each   |
| 7003814  | 1/16     | 27     | 4      | 11/16        | 2-1/8  | .3125   | \$26.80 |
| 7003815  | 1/8      | 27     | 4      | 3/4          | 2-1/8  | .405    | 26.80   |
| 7003816  | 1/4      | 18     | 4      | 1-1/16       | 2-7/16 | .540    | 29.50   |
| 7003817  | 3/8      | 18     | 4      | 1-1/16       | 2-9/16 | .675    | 39.02   |
| 7003818  | 1/2      | 14     | 4      | 1-3/8        | 3-1/8  | .840    | 61.74   |
| 7003819  | 3/4      | 14     | 5      | 1-3/8        | 3-1/4  | 1.050   | 86.49   |
| 7003820  | 1        | 11-1/2 | 5      | 1-3/4        | 3-3/4  | 1.315   | 130.88  |
| 7003821  | 1-1/4    | 11-1/2 | 5      | 1-3/4        | 4      | 1.660   | 187.99  |
| 7003822  | 1-1/2    | 11-1/2 | 7      | 1-3/4        | 4-1/4  | 1.900   | 252.21  |
| 7003823  | 2        | 11-1/2 | 7      | 1-3/4        | 4-1/2  | 2.375   | 341.44  |
| 7003824  | 1/8      | 27     | 4      | 3/4          | 2-1/8  | .405    | 26.80   |
| 7003825  | 1/4      | 18     | 4      | 1-1/16       | 2-7/16 | .540    | 29.50   |
| 7003826  | 3/8      | 18     | 4      | 1-1/16       | 2-9/16 | .675    | 39.02   |
| 7003827  | 1/2      | 14     | 4      | 1-3/8        | 3-1/8  | .840    | 61.74   |
| 7003828  | 3/4      | 14     | 5      | 1-3/8        | 3-1/4  | 1.050   | 86.49   |
| 7003829  | 1        | 11-1/2 | 5      | 1-3/4        | 3-3/4  | 1.315   | 130.88  |
| 7003830  | 1/8      | 27     | 4      | 3/4          | 2-1/8  | .405    | 26.80   |
| 7003831  | 1/4      | 18     | 4      | 1-1/16       | 2-7/16 | .540    | 29.50   |
| 7003832  | 3/8      | 18     | 4      | 1-1/16       | 2-9/16 | .675    | 39.02   |
| 7003833  | 1/2      | 14     | 4      | 1-3/8        | 3-1/8  | .840    | 61.74   |
| 7003834  | 3/4      | 14     | 5      | 1-3/8        | 3-1/4  | 1.050   | 86.49   |
| 7003835  | 1        | 11-1/2 | 5      | 1-3/4        | 3-3/4  | 1.315   | 130.88  |



# TAPS AND DRILL SETS & TAP WRENCHES

Cutting Tools

## Tap and Drill Sets



### Magnum Super Premium Tap & Drill Set

- Special Hi-Tungsten and Hi-Molybdenum tool steel
- Gold surface treated for maximum lubricity



#### NC

- 190-AG heavy-duty drill sizes: # 36, 29,25, 21, 7, F, 5/16, U and 27/64
- Gun tap sizes: 6-32,8-32,10-24,10-32, 1/4-20, 5/16-18, 3/8-16,7/16-14,1/2-13

| Part No. | Price /Each |
|----------|-------------|
| 53844    | \$136.39    |

#### NF

- 190-AG Drill Sizes: #33, 29, 25, 21, 3, 1, Q, 25/64 & 29/64
- 20-AG Tap Sizes: 6-40, 8-36, 10-24, 10-32, 1/4-28, 5/16-24, 3/8-24, 7/16-20 & 1/2-20

| Part No. | Price /Each |
|----------|-------------|
| 53846    | \$190.08    |

#### METRIC

- 170-AG Drill Sizes: 2.05, 2.50, 2.90, 3.30, 4.20, 5.00, 6.70, 8.50 and 10.20
- 21-AG Tap Sizes: 2.5-45, 3.0-50, 3.5-60, 4.0-70, 5.0-80, 6.0-1.00, 8.0-1.25, 10.0-1.50 and 12.0-1.75

| Part No. | Price /Each |
|----------|-------------|
| 53845    | \$214.40    |

## Tap Wrenches



### Type 725 Tap Wrenches

- Hardened steel jaws
- Adjusts easily by turning handles



| Part No. | Tap Size        | Price /Each |
|----------|-----------------|-------------|
| 0312220  | 1/4-3/4         | \$34.50     |
| 0312221  | LG-WRN1/2-1-1/8 | 95.47       |

### Type 727 T-Handle Tap Wrenches

- Sliding T-handle with spring tension to hold handles in place



| Part No. | Tap Size        | Price /Each |
|----------|-----------------|-------------|
| 0312222  | 0-1/4           | \$10.37     |
| 0312223  | 3/16-1/2        | 15.39       |
| 0312224  | SQ. DR.3/16-1/2 | 17.42       |

## Starrett®

### Starrett T-Handle Tap Wrenches

- Holds taps, drills, reamers and small tools to be turned by hand
- For use on lathe centers or upright drilling machines to start tap straight
- Designed to hold square shanks



| Part No. | Description                        | Price /Each |
|----------|------------------------------------|-------------|
| 0324745  | 2" Length, 1/16-3/16" Tap Size     | \$40.21     |
| 0324724  | 2-1/2" Length, 7/32-7/16" Tap Size | 45.52       |
| 0324711  | 3-1/2" Length, 1/4-1/2" Tap Size   | 58.03       |
| 0324786  | 6" Length, 1/16-3/16" Tap Size     | 56.94       |
| 0325101  | 10" Length, 7/32-7/16" Tap Size    | 48.00       |
| 0324723  | 13" Length, 1/4-1/2" Tap Size      | 77.72       |

### Tap Wrenches

- Strong and well proportioned
- Nicely finished with properly tempered gripping surfaces
- Will firmly hold square or round shanks
- Plunger operated by knurled sleeve



| Part No. | Description                    | Price /Each |
|----------|--------------------------------|-------------|
| 0324710  | 6" Length, 1/16-1/4" Tap Size  | \$56.80     |
| 0324736  | 9" Length, 3/16-1/2" Tap Size  | 83.17       |
| 0324773  | 12" Length, 1/4-5/8" Tap Size  | 134.69      |
| 0324948  | 16" Length, 5/16-3/4" Tap Size | 179.85      |

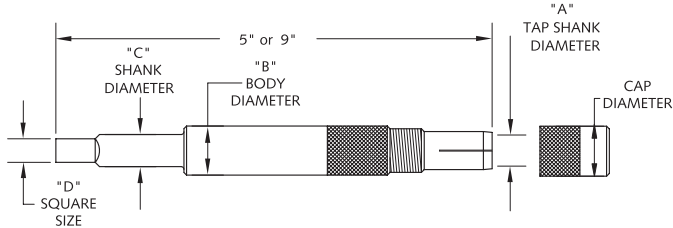
## Tap Extensions



### Tap Extensions

#### Hand Tap

- Made from tool steel, slim profile allows you to get into tight spaces
- Internal square drive for positive tap drive
- Compressive cap for easy tightening, no wrench required



| Part No.  | Tap Size  | Metric Size | Shank Dia. | Square Size | Depth Tap Enters | "B" Diameter | Price /Each |
|-----------|---|-------------|------------|-------------|------------------|--------------|-------------|
| <b>5"</b> |   |             |            |             |                  |              |             |
| 7013743   | #0 - #6   | M1.6 - M3.5 | 0.194"     | 0.152"      | 7/8"             | 1/4"         | \$44.60     |
| 7013744   | #8  | M4          | 0.194"     | 0.152"      | 7/8"             | 5/16"        | 44.60       |
| 7013745   | #10   | M4.5 - M5   | 0.194"     | 0.152"      | 1"               | 3/8"         | 44.60       |
| 7013746   | #12   |             | 0.220"     | 0.152"      | 1"               | 3/8"         | 44.60       |
| 7013747   | 1/4"  | M6 - M6.3   | 0.255"     | 0.191"      | 1"               | 7/16"        | 44.60       |
| 7013748   | 5/16"   | M7 and M8   | 0.318"     | 0.238"      | 1-1/16"          | 1/2"         | 54.71       |
| 7013749   | 3/8"  | M10         | 0.381"     | 0.286"      | 1-1/8"           | 9/16"        | 54.71       |
| 7013750   | 7/16"   |             | 0.323"     | 0.242"      | 1-1/16"          | 1/2"         | 54.71       |
| 7013751   | 1/2"  | M12         | 0.367"     | 0.275"      | 1-1/8"           | 9/16"        | 54.71       |
| 7013752   | 1/16 and 1/8 RS NPT   |             | 0.312"     | 0.234"      | 1"               | 1/2"         | 54.71       |
| 7013753   | 5" Tap Extension Set w/ Case - 9 pcs. #7013743 thru 7013762 |             |            |             |                  |              | 416.11      |

| Part No.                              | Tap Size  | Metric Size | Shank Dia. | Square Size | Depth Tap Enters | "B" Diameter | Price /Each |
|---------------------------------------|---|-------------|------------|-------------|------------------|--------------|-------------|
| <b>9"</b>                             |   |             |            |             |                  |              |             |
| 7013754                               | #0 - #6   | M1.6 - M3.5 | 0.194"     | 0.152"      | 7/8"             | 1/4"         | \$46.98     |
| 7013755                               | #8  | M4          | 0.194"     | 0.152"      | 7/8"             | 5/16"        | 46.98       |
| 7013756                               | #10   | M4.5 - M5   | 0.194"     | 0.152"      | 1"               | 3/8"         | 46.98       |
| 7013757                               | #12   |             | 0.220"     | 0.152"      | 1"               | 3/8"         | 46.98       |
| 7013758                               | 1/4"  | M6 - M6.3   | 0.255"     | 0.191"      | 1"               | 7/16"        | 46.98       |
| 7013759                               | 5/16"   | M7 and M8   | 0.318"     | 0.238"      | 1-1/16"          | 1/2"         | 57.72       |
| 7013760                               | 3/8"  | M10         | 0.381"     | 0.286"      | 1-1/8"           | 9/16"        | 57.72       |
| 7013761                               | 7/16"   |             | 0.323"     | 0.242"      | 1-1/16"          | 1/2"         | 57.72       |
| 7013762                               | 1/2"  | M12         | 0.367"     | 0.275"      | 1-1/8"           | 9/16"        | 57.72       |
| 7013763                               | 1/16" and 1/8" RS NPT                               |             | 0.312"     | 0.234"      | 1"               | 1/2"         | 57.72       |
| 7013764                               | 9" Tap Extension Set - 9 pcs. #7013754 thru 7013762 |             |            |             |                  |              | 433.94      |
| <b>6" (For taps larger than 1/2")</b> |   |             |            |             |                  |              |             |
| 7013765                               | 9/16"   |             | 0.429"     | 0.320"      | 1-1/4"           | 3/4"         | \$81.80     |
| 7013766                               | 1/8" NPT  |             | 0.437"     | 0.328"      | 1"               | 3/4"         | 81.80       |
| 7013767                               | 5/8"  |             | 0.480"     | 0.360"      | 1-1/4"           | 3/4"         | 81.80       |
| 7013768                               | 11/16"  |             | 0.542"     | 0.406"      | 1-1/4"           | 7/8"         | 93.54       |
| 7013769                               | 1/4" NPT  |             | 0.562"     | 0.420"      | 1"               | 7/8"         | 102.21      |
| 7013770                               | 3/4"  |             | 0.590"     | 0.440"      | 1-3/8"           | 7/8"         | 93.54       |
| 7013771                               | 7/8"  |             | 0.697"     | 0.520"      | 1-3/8"           | 1"           | 93.54       |
| 7013772                               | 3/8" NPT  |             | 0.700"     | 0.530"      | 1-3/16"          | 1"           | 93.54       |
| 7013773                               | 1/2" NPT  |             | 0.687"     | 0.515"      | 1-1/4"           | 1"           | 93.54       |
| 7013774                               | 1"  |             | 0.800"     | 0.600"      | 1-1/2"           | 1"           | 93.54       |

# QUALITY CONTROL

- Our in-house independent test lab has been A2LA accredited since May of 1999
- ISO registration to the new revision (9001:2000) took place in April 2001 as we continually focus on our customer's needs of a stringent quality management system

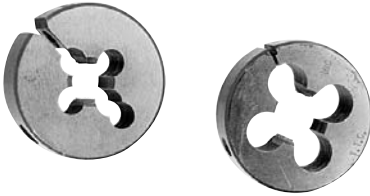


# DIES AND DIE STOCK

## Dies and Die Stock

### HSS Adjustable Dies

- Used for general purpose external threading
- Round split design
- Adjusting screw forces side apart for different class fit



Cutting Tools

| Size    | 1" O.D.  |             | 2" O.D.  |             |
|---------|----------|-------------|----------|-------------|
|         | Part No. | Price /Each | Part No. | Price /Each |
| 1/4-20  | 55422    | \$18.96     | 55452    | \$47.54     |
| 1/4-28  | 55423    | 18.96       | 55453    | 47.54       |
| 5/16-18 | 55424    | 18.96       | 55454    | 47.54       |
| 5/16-24 | 55425    | 18.96       | 55455    | 47.54       |
| 3/8-16  | 55426    | 18.96       | 55456    | 47.54       |
| 3/8-24  | 55427    | 18.96       | 55457    | 47.54       |
| 7/16-14 | 55428    | 18.96       | 55458    | 47.54       |
| 7/16-20 | 55429    | 17.88       | 55459    | 47.54       |
| 1/2-13  | 55430    | 18.96       | 55460    | 47.54       |
| 1/2-20  | 55431    | 18.96       | 55461    | 47.54       |
| 9/16-12 |          |             | 55462    | 47.54       |
| 9/16-18 |          |             | 55463    | 47.54       |
| 5/8-11  |          |             | 55464    | 47.54       |
| 5/8-18  |          |             | 55465    | 47.54       |
| 3/4-10  |          |             | 55466    | 47.54       |
| 3/4-16  |          |             | 55467    | 47.54       |
| 7/8-9   |          |             | 55468    | 47.54       |
| 7/8-14  |          |             | 55469    | 47.54       |
| 1-8     |          |             | 55470    | 47.54       |
| 1-12    |          |             | 55471    | 44.84       |
| 1-14    |          |             | 55472    | 47.54       |



### HSS Round Adjustable Dies

- Will produce (UN) thread form
- Chamfer on both sides to extend life
- Can be used for close to shoulder work
- Adjustable for wear and size



| Part No. | Size | Pitch | Decimal | Thread Designation | O.D.  | Price /Each |
|----------|------|-------|---------|--------------------|-------|-------------|
| 7011455  | 5    | 40    | .1250   | UNC                | 13/16 | \$25.91     |
| 7011456  | 5    | 44    | .1250   | UNF                | 13/16 | 25.91       |
| 7011457  | 6    | 32    | .1380   | UNC                | 13/16 | 25.91       |
| 7011458  | 6    | 40    | .1380   | UNF                | 13/16 | 25.91       |
| 7011459  | 8    | 32    | .1640   | UNC                | 13/16 | 25.91       |
| 7011460  | 8    | 36    | .1640   | UNF                | 13/16 | 25.91       |
| 7011461  | 10   | 24    | .1900   | UNC                | 13/16 | 25.91       |
| 7011462  | 10   | 32    | .1900   | UNF                | 13/16 | 25.91       |
| 7011463  | 12   | 24    | .2160   | UNC                | 13/16 | 25.91       |
| 7011464  | 12   | 28    | .2160   | UNF                | 13/16 | 25.91       |
| 7011465  | 1/4  | 20    | .2500   | UNC                | 13/16 | 25.91       |
| 7011466  | 1/4  | 28    | .2500   | UNF                | 13/16 | 25.91       |
| 7011467  | 5/16 | 18    | .3125   | UNC                | 13/16 | 25.91       |
| 7011468  | 5/16 | 24    | .3125   | UNF                | 13/16 | 25.91       |
| 7011469  | 6    | 32    | .1380   | UNC                | 1     | 29.96       |
| 7011470  | 8    | 32    | .1640   | UNC                | 1     | 29.96       |
| 7011471  | 10   | 24    | .1900   | UNC                | 1     | 29.96       |
| 7011472  | 10   | 32    | .1900   | UNF                | 1     | 29.96       |
| 7011473  | 12   | 24    | .2160   | UNC                | 1     | 29.96       |
| 7011474  | 1/4  | 20    | .2500   | UNC                | 1     | 29.96       |
| 7011475  | 1/4  | 28    | .2500   | UNF                | 1     | 29.96       |
| 7011476  | 5/16 | 18    | .3125   | UNC                | 1     | 29.96       |
| 7011477  | 5/16 | 24    | .3125   | UNF                | 1     | 29.96       |
| 7011478  | 3/8  | 16    | .3750   | UNC                | 1     | 29.96       |
| 7011479  | 3/8  | 24    | .3750   | UNF                | 1     | 29.96       |
| 7011480  | 7/16 | 14    | .4375   | UNC                | 1     | 29.96       |
| 7011481  | 7/16 | 20    | .4375   | UNF                | 1     | 29.96       |
| 7011482  | 1/4  | 20    | .2500   | UNC                | 1-1/2 | 51.48       |
| 7011483  | 1/4  | 28    | .2500   | UNF                | 1-1/2 | 51.48       |
| 7011484  | 5/16 | 18    | .3125   | UNC                | 1-1/2 | 51.48       |
| 7011485  | 5/16 | 24    | .3125   | UNF                | 1-1/2 | 51.48       |
| 7011486  | 3/8  | 16    | .3750   | UNC                | 1-1/2 | 51.48       |
| 7011487  | 3/8  | 24    | .3750   | UNF                | 1-1/2 | 51.48       |
| 7011488  | 7/16 | 14    | .4375   | UNC                | 1-1/2 | 51.48       |
| 7011489  | 7/16 | 20    | .4375   | UNF                | 1-1/2 | 51.48       |
| 7011490  | 1/2  | 13    | .5000   | UNC                | 1-1/2 | 51.48       |
| 7011491  | 1/2  | 20    | .5000   | UNF                | 1-1/2 | 51.48       |
| 7011492  | 9/16 | 12    | .5625   | UNC                | 1-1/2 | 51.48       |
| 7011493  | 9/16 | 18    | .5625   | UNF                | 1-1/2 | 51.48       |
| 7011494  | 5/8  | 11    | .6250   | UNC                | 1-1/2 | 51.48       |
| 7011495  | 5/8  | 18    | .6250   | UNF                | 1-1/2 | 51.48       |
| 7011496  | 5/8  | 11    | .6250   | UNC                | 2     | 74.88       |
| 7011497  | 5/8  | 18    | .6250   | UNF                | 2     | 74.88       |
| 7011498  | 3/4  | 10    | .7500   | UNC                | 2     | 74.88       |
| 7011499  | 3/4  | 16    | .7500   | UNF                | 2     | 74.88       |
| 7011500  | 7/8  | 9     | .8750   | UNC                | 2     | 74.88       |
| 7011501  | 7/8  | 14    | .8750   | UNF                | 2     | 74.88       |

### HSS Round Adjustable Dies - Metric Sizes

| Part No. | Size | Pitch  | Decimal | O.D.  | Price /Each |
|----------|------|--------|---------|-------|-------------|
| 7011502  | M3.5 | 0.60mm | .1378   | 13/16 | \$25.91     |
| 7011503  | M4   | 0.70mm | .1575   | 13/16 | 25.91       |
| 7011504  | M4   | 0.75mm | .1772   | 13/16 | 25.91       |
| 7011505  | M5   | 0.80mm | .1969   | 13/16 | 25.91       |
| 7011506  | M6   | 1.00mm | .2362   | 13/16 | 25.91       |
| 7011507  | M6   | 1.00mm | .2362   | 1     | 29.96       |
| 7011508  | M7   | 1.00mm | .2756   | 1     | 29.96       |
| 7011509  | M8   | 1.25mm | .3150   | 1     | 29.96       |
| 7011510  | M10  | 1.50mm | .3937   | 1     | 29.96       |
| 7011511  | M12  | 1.75mm | .4724   | 1     | 29.96       |
| 7011512  | M14  | 2.00mm | .5512   | 1-1/2 | 51.48       |
| 7011513  | M16  | 2.00mm | .6300   | 1-1/2 | 51.48       |
| 7011514  | M20  | 2.50mm | .7874   | 1-1/2 | 51.48       |

### Hexagon Rethreading Die

- Used in repair work for dressing over bruised and rusty threads
- Can be used in free machining materials



| Part No. | Size  | Pitch | Thread Designation | Across Flats | Price /Each |
|----------|-------|-------|--------------------|--------------|-------------|
| 7011424  | 1/4   | 20    | UNC                | 19/32        | \$17.10     |
| 7011425  | 1/4   | 28    | UNF                | 19/32        | 17.10       |
| 7011426  | 5/16  | 18    | UNC                | 11/16        | 19.07       |
| 7011427  | 5/16  | 24    | UNF                | 11/16        | 19.07       |
| 7011428  | 3/8   | 16    | UNC                | 25/32        | 19.99       |
| 7011429  | 3/8   | 24    | UNF                | 25/32        | 19.99       |
| 7011430  | 7/16  | 14    | UNC                | 7/8          | 20.82       |
| 7011431  | 7/16  | 20    | UNF                | 7/8          | 20.82       |
| 7011432  | 1/2   | 13    | UNC                | 1-1/16       | 23.89       |
| 7011433  | 1/2   | 20    | UNF                | 1-1/16       | 23.89       |
| 7011434  | 9/16  | 12    | UNC                | 1-1/16       | 24.81       |
| 7011435  | 9/16  | 18    | UNF                | 1-1/16       | 24.81       |
| 7011436  | 5/8   | 11    | UNC                | 1-1/4        | 27.48       |
| 7011437  | 5/8   | 18    | UNF                | 1-1/4        | 27.48       |
| 7011438  | 11/16 | 11    | NS                 | 1-7/16       | 32.48       |
| 7011439  | 11/16 | 16    | NS                 | 1-7/16       | 32.48       |
| 7011440  | 3/4   | 10    | UNC                | 1-7/16       | 33.50       |
| 7011441  | 3/4   | 16    | UNF                | 1-7/16       | 33.50       |
| 7011442  | 7/8   | 9     | UNC                | 1-5/8        | 37.46       |
| 7011443  | 7/8   | 14    | UNF                | 1-5/8        | 37.46       |
| 7011444  | 1     | 8     | UNC                | 1-13/16      | 47.46       |
| 7011445  | 1     | 12    | UNF                | 1-13/16      | 47.46       |
| 7011446  | 1     | 14    | NS                 | 1-13/16      | 47.46       |
| 7011447  | 1-1/8 | 7     | UNC                | 2            | 51.70       |
| 7011448  | 1-1/8 | 12    | UNF                | 2            | 51.70       |
| 7011449  | 1-1/4 | 7     | UNC                | 2-3/16       | 55.87       |
| 7011450  | 1-1/4 | 12    | UNF                | 2-3/16       | 55.87       |
| 7011451  | 1-3/8 | 6     | UNC                | 2-3/8        | 62.03       |
| 7011452  | 1-3/8 | 12    | UNF                | 2-3/8        | 62.03       |
| 7011453  | 1-1/2 | 6     | UNC                | 2-9/16       | 64.85       |
| 7011454  | 1-1/2 | 12    | UNF                | 2-9/16       | 64.85       |



## Dies and Die Stock Cont.



### Carbon Steel Round Adjustable Dies

- Will cut external threads when held in a die stock
- Will produce (UN) thread form
- Adjustable for wear and size
- Chamfer on both sides to extend life

| Part No. | Decimal | Pitch | Thread Designation | O.D.  | Price /Each |
|----------|---------|-------|--------------------|-------|-------------|
| 7011350  | .0600   | 80    | UNF                | 13/16 | \$15.42     |
| 7011351  | .0860   | 56    | UNC                | 13/16 | 15.42       |
| 7011352  | .0990   | 48    | UNC                | 13/16 | 15.42       |
| 7011353  | .1120   | 40    | UNC                | 13/16 | 15.03       |
| 7011354  | .1120   | 48    | UNF                | 13/16 | 15.03       |
| 7011355  | .1250   | 40    | UNC                | 13/16 | 15.42       |
| 7011356  | .1380   | 32    | UNC                | 13/16 | 15.42       |
| 7011357  | .1640   | 32    | UNC                | 13/16 | 15.42       |
| 7011358  | .1900   | 24    | UNC                | 13/16 | 15.42       |
| 7011359  | .1900   | 32    | UNF                | 13/16 | 15.42       |
| 7011360  | .2500   | 20    | UNC                | 13/16 | 15.42       |
| 7011361  | .1380   | 32    | UNC                | 1     | 18.70       |
| 7011362  | .1640   | 32    | UNC                | 1     | 18.70       |
| 7011363  | .1900   | 24    | UNC                | 1     | 18.70       |
| 7011364  | .1900   | 32    | UNF                | 1     | 18.70       |
| 7011365  | .2160   | 24    | UNC                | 1     | 18.70       |
| 7011366  | .2500   | 20    | UNC                | 1     | 18.70       |
| 7011367  | .2500   | 28    | UNF                | 1     | 18.70       |
| 7011368  | .3125   | 18    | UNC                | 1     | 18.70       |
| 7011369  | .3125   | 24    | UNF                | 1     | 18.70       |
| 7011370  | .3750   | 16    | UNC                | 1     | 18.91       |
| 7011371  | .3750   | 24    | UNF                | 1     | 18.91       |
| 7011372  | .4375   | 14    | UNC                | 1     | 18.91       |
| 7011373  | .4375   | 20    | UNF                | 1     | 18.91       |
| 7011374  | .2500   | 20    | UNC                | 1-1/2 | 28.17       |
| 7011375  | .2500   | 28    | UNF                | 1-1/2 | 28.17       |
| 7011376  | .3125   | 18    | UNC                | 1-1/2 | 28.17       |
| 7011377  | .3125   | 24    | UNF                | 1-1/2 | 28.17       |
| 7011378  | .3750   | 16    | UNC                | 1-1/2 | 28.17       |
| 7011379  | .3750   | 24    | UNF                | 1-1/2 | 28.17       |
| 7011380  | .4375   | 14    | UNC                | 1-1/2 | 28.17       |
| 7011381  | .4375   | 20    | UNF                | 1-1/2 | 28.17       |
| 7011382  | .5000   | 13    | UNC                | 1-1/2 | 28.17       |
| 7011383  | .5000   | 20    | UNF                | 1-1/2 | 28.17       |
| 7011384  | .5625   | 12    | UNC                | 1-1/2 | 28.73       |
| 7011385  | .5625   | 18    | UNF                | 1-1/2 | 28.73       |
| 7011386  | .6250   | 11    | UNC                | 1-1/2 | 28.73       |
| 7011387  | .6250   | 18    | UNF                | 1-1/2 | 28.73       |
| 7011388  | .2500   | 20    | UNC                | 2     | 45.79       |
| 7011389  | .2500   | 28    | UNF                | 2     | 45.79       |
| 7011390  | .3125   | 18    | UNC                | 2     | 45.79       |
| 7011391  | .3125   | 24    | UNF                | 2     | 45.79       |
| 7011392  | .3750   | 16    | UNC                | 2     | 45.79       |
| 7011393  | .3750   | 24    | UNF                | 2     | 45.79       |
| 7011394  | .4375   | 14    | UNC                | 2     | 45.79       |
| 7011395  | .4375   | 20    | UNF                | 2     | 45.79       |
| 7011396  | .5000   | 13    | UNC                | 2     | 45.79       |
| 7011397  | .5000   | 20    | UNF                | 2     | 45.79       |
| 7011398  | .5625   | 12    | UNC                | 2     | 45.79       |
| 7011399  | .5625   | 18    | UNF                | 2     | 45.79       |
| 7011400  | .6250   | 11    | UNC                | 2     | 45.79       |

| Part No. | Decimal | Pitch | Thread Designation | O.D.  | Price /Each |
|----------|---------|-------|--------------------|-------|-------------|
| 7011401  | .6250   | 18    | UNF                | 2     | \$45.79     |
| 7011402  | .7500   | 10    | UNC                | 2     | 45.79       |
| 7011403  | .7500   | 16    | UNF                | 2     | 45.79       |
| 7011404  | .8750   | 9     | UNC                | 2     | 45.79       |
| 7011405  | .8750   | 14    | UNF                | 2     | 45.79       |
| 7011406  | 1.0000  | 8     | UNC                | 2     | 45.79       |
| 7011407  | 1.0000  | 12    | UNF                | 2     | 45.79       |
| 7011408  | .6250   | 11    | UNC                | 2-1/2 | 70.28       |
| 7011409  | .7500   | 10    | UNC                | 2-1/2 | 70.28       |
| 7011410  | .7500   | 16    | UNF                | 2-1/2 | 70.28       |
| 7011411  | .8750   | 9     | UNC                | 2-1/2 | 70.28       |
| 7011412  | .8750   | 14    | UNF                | 2-1/2 | 70.28       |
| 7011413  | 1.0000  | 8     | UNC                | 2-1/2 | 70.28       |
| 7011414  | 1.0000  | 12    | UNF                | 2-1/2 | 70.28       |
| 7011415  | 1.0000  | 8     | UNC                | 3     | 116.55      |
| 7011416  | 1.1250  | 7     | UNC                | 3     | 116.55      |
| 7011417  | 1.1250  | 12    | UNF                | 3     | 116.55      |
| 7011418  | 1.2500  | 7     | UNC                | 3     | 116.55      |
| 7011419  | 1.2500  | 12    | UNF                | 3     | 116.55      |
| 7011420  | 1.5000  | 6     | UNC                | 3     | 118.64      |
| 7011421  | 1.5000  | 12    | UNF                | 3     | 123.63      |
| 7011422  | .5000   | 13    | UNC                | 1     | 18.75       |
| 7011423  | .5000   | 20    | UNF                | 1     | 18.75       |



### Carbon Steel Dies Hex Rethread

- Used for rethreading rusty or damaged threads
- Used with most type of wrenches



| Size    | Across Flats | Part No. | Price /Each |
|---------|--------------|----------|-------------|
| 1/4-20  | 1            | 55502    | \$4.46      |
| 1/4-28  | 1            | 55503    | 4.46        |
| 5/16-18 | 1            | 55504    | 4.46        |
| 5/16-24 | 1            | 55505    | 4.46        |
| 3/8-16  | 1            | 55506    | 4.46        |
| 3/8-24  | 1            | 55507    | 4.46        |
| 7/16-14 | 1            | 55508    | 4.46        |
| 7/16-20 | 1            | 55509    | 4.46        |
| 1/2-13  | 1            | 55510    | 4.46        |
| 1/2-20  | 1            | 55511    | 4.46        |
| 9/16-12 | 1-7/16       | 55512    | 11.64       |
| 9/16-18 | 1-7/16       | 55513    | 11.64       |
| 5/8-11  | 1-7/16       | 55514    | 11.64       |
| 5/8-18  | 1-7/16       | 55515    | 11.64       |
| 3/4-10  | 1-7/16       | 55516    | 11.64       |
| 3/4-16  | 1-7/16       | 55517    | 11.64       |
| 7/8-9   | 1-5/8        | 55518    | 23.52       |
| 7/8-14  | 1-5/8        | 55519    | 23.52       |
| 1-8     | 1-13/16      | 55520    | 26.28       |
| 1-14    | 1-13/16      | 55521    | 26.28       |
| 1-12    | 1-13/16      | 55522    | 26.28       |



### Type 728 Carded Economy Die Stock

- Designed to hold either 1" round or hex dies



| Part No. | Die Size    | Price /Each |
|----------|-------------|-------------|
| 0312225  | 1 Hex or RD | \$9.46      |

### Type 729 Professional Die Stock

- 0312226 = 3-jaw self centering adjustable guides



| Part No. | Die Size      | Price /Each |
|----------|---------------|-------------|
| 0312226  | 1-1/2 Rd, Hex | \$35.13     |
| 0312227  | 1-7/8 Hex     | 56.90       |

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# REAMERS

Reamers



Cutting Tools

## High-Speed Steel - Straight Shank Straight Flute - Right-Hand Cut

- Used to produce accurate holes in a variety of materials
- Round shanks for use with chucks and collets
- Cutting fluid is recommended for most reaming



| Size    | Part No.      | Decimal | Shank Dia.  | Overall Lgth. | Flute Lgth. | No. of Flutes | Price /Each |
|---------|---------------|---------|-------------|---------------|-------------|---------------|-------------|
| 1/32    | 360003-131588 | 0.0312  | .0290-.0280 | 2-1/2         | 1/2         | 4             | \$11.63     |
| 3/64    | 360016-131588 | 0.0469  | .0455-.0445 | 2-1/2         | 1/2         | 4             | 12.97       |
| 1/16    | 360020-131588 | 0.0625  | .0585-.0575 | 2-1/2         | 1/2         | 4             | 10.51       |
| 5/64    | 360026-131588 | 0.0781  | .0720-.0710 | 3             | 3/4         | 4             | 9.38        |
| 3/32    | 360033-131588 | 0.0938  | .0880-.0870 | 3             | 3/4         | 4             | 9.44        |
| 7/64    | 360040-131588 | 0.1094  | .1030-.1020 | 3-1/2         | 7/8         | 4             | 9.38        |
| #32     | 360044-131588 | 0.1160  | .1120-.1110 | 3-1/2         | 7/8         | 4             | 9.38        |
| #31     | 360045-131588 | 0.1200  | .1120-.1110 | 3-1/2         | 7/8         | 4             | 9.38        |
| 1/8     | 360046-131588 | 0.1250  | .1190-.1180 | 3-1/2         | 7/8         | 4             | 8.84        |
| #30     | 360047-131588 | 0.1285  | .1190-.1180 | 3-1/2         | 7/8         | 4             | 9.38        |
| #29     | 360048-131588 | 0.1360  | .1275-.1265 | 4             | 1           | 4             | 11.85       |
| #28     | 360049-131588 | 0.1405  | .1350-.1340 | 4             | 1           | 4             | 11.85       |
| 9/64    | 360050-131588 | 0.1406  | .1350-.1340 | 4             | 1           | 4             | 11.85       |
| #27     | 360051-131588 | 0.1440  | .1350-.1340 | 4             | 1           | 4             | 11.85       |
| #26     | 360052-131588 | 0.1470  | .1430-.1420 | 4             | 1           | 4             | 11.85       |
| #25     | 360053-131588 | 0.1495  | .1430-.1420 | 4             | 1           | 4             | 11.85       |
| #24     | 360054-131588 | 0.1520  | .1460-.1450 | 4             | 1           | 4             | 11.85       |
| #23     | 360055-131588 | 0.1540  | .1460-.1450 | 4             | 1           | 4             | 11.85       |
| 5/32    | 360056-131588 | 0.1562  | .1510-.1500 | 4             | 1           | 6             | 12.65       |
| #22     | 360057-131588 | 0.1570  | .1510-.1500 | 4             | 1           | 6             | 11.20       |
| #21     | 360058-131588 | 0.1590  | .1530-.1520 | 4-1/2         | 1-1/8       | 6             | 12.49       |
| #20     | 360059-131588 | 0.1610  | .1530-.1520 | 4-1/2         | 1-1/8       | 6             | 12.49       |
| #19     | 360060-131588 | 0.1660  | .1595-.1585 | 4-1/2         | 1-1/8       | 6             | 12.49       |
| #18     | 360061-131588 | 0.1695  | .1595-.1585 | 4-1/2         | 1-1/8       | 6             | 12.49       |
| 11/64   | 360062-131588 | 0.1719  | .1645-.1635 | 4-1/2         | 1-1/8       | 6             | 14.73       |
| #17     | 360063-131588 | 0.1730  | .1645-.1635 | 4-1/2         | 1-1/8       | 6             | 12.49       |
| #16     | 360064-131588 | 0.1770  | .1704-.1694 | 4-1/2         | 1-1/8       | 6             | 12.49       |
| #15     | 360065-131588 | 0.1800  | .1755-.1745 | 4-1/2         | 1-1/8       | 6             | 12.49       |
| #14     | 360066-131588 | 0.1820  | .1755-.1745 | 4-1/2         | 1-1/8       | 6             | 12.49       |
| #13     | 360067-131588 | 0.1850  | .1805-.1795 | 4-1/2         | 1-1/8       | 6             | 12.49       |
| 3/16    | 360068-131588 | 0.1875  | .1805-.1795 | 4-1/2         | 1-1/8       | 6             | 11.79       |
| #12     | 360069-131588 | 0.1890  | .1805-.1795 | 4-1/2         | 1-1/8       | 6             | 12.49       |
| #11     | 360070-131588 | 0.1910  | .1860-.1850 | 5             | 1-1/4       | 6             | 14.15       |
| #10     | 360071-131588 | 0.1935  | .1860-.1850 | 5             | 1-1/4       | 6             | 14.15       |
| #9      | 360072-131588 | 0.1960  | .1895-.1885 | 5             | 1-1/4       | 6             | 14.15       |
| #8      | 360073-131588 | 0.1990  | .1895-.1885 | 5             | 1-1/4       | 6             | 14.15       |
| #7      | 360074-131588 | 0.2010  | .1945-.1935 | 5             | 1-1/4       | 6             | 14.15       |
| 13/64   | 360075-131588 | 0.2031  | .1945-.1935 | 5             | 1-1/4       | 6             | 14.15       |
| #6      | 360076-131588 | 0.2040  | .1945-.1935 | 5             | 1-1/4       | 6             | 14.15       |
| #5      | 360077-131588 | 0.2055  | .2016-.2006 | 5             | 1-1/4       | 6             | 14.15       |
| #4      | 360078-131588 | 0.2090  | .2016-.2006 | 5             | 1-1/4       | 6             | 14.15       |
| #3      | 360079-131588 | 0.2130  | .2025-.2065 | 5             | 1-1/4       | 6             | 14.15       |
| 7/32    | 360080-131588 | 0.2188  | .2075-.2065 | 5             | 1-1/4       | 6             | 14.15       |
| #2      | 360081-131588 | 0.2210  | .2173-.2163 | 6             | 1-1/2       | 6             | 13.88       |
| #1      | 360082-131588 | 0.2280  | .2173-.2163 | 6             | 1-1/2       | 6             | 13.88       |
| A       | 360083-131588 | 0.2340  | .2265-.2255 | 6             | 1-1/2       | 6             | 13.88       |
| 15/64   | 360084-131588 | 0.2344  | .2265-.2255 | 6             | 1-1/2       | 6             | 13.88       |
| B       | 360085-131588 | 0.2380  | .2329-.2319 | 6             | 1-1/2       | 6             | 16.02       |
| C       | 360086-131588 | 0.2420  | .2329-.2319 | 6             | 1-1/2       | 6             | 16.02       |
| D       | 360087-131588 | 0.2460  | .2329-.2319 | 6             | 1-1/2       | 6             | 16.02       |
| 1/4 (E) | 360088-131588 | 0.2500  | .2405-.2395 | 6             | 1-1/2       | 6             | 14.58       |
| F       | 360089-131588 | 0.2570  | .2405-.2395 | 6             | 1-1/2       | 6             | 15.92       |
| G       | 360090-131588 | 0.2610  | .2485-.2475 | 6             | 1-1/2       | 6             | 15.97       |
| 17/64   | 360091-131588 | 0.2656  | .2485-.2475 | 6             | 1-1/2       | 6             | 16.67       |
| H       | 360092-131588 | 0.2660  | .2485-.2475 | 6             | 1-1/2       | 6             | 16.67       |
| I       | 360093-131588 | 0.2720  | .2485-.2475 | 6             | 1-1/2       | 6             | 16.67       |
| J       | 360094-131588 | 0.2770  | .2485-.2475 | 6             | 1-1/2       | 6             | 16.67       |
| K       | 360095-131588 | 0.2810  | .2485-.2475 | 6             | 1-1/2       | 6             | 16.67       |
| 9/32    | 360096-131588 | 0.2812  | .2485-.2475 | 6             | 1-1/2       | 6             | 16.67       |
| L       | 360097-131588 | 0.2900  | .2792-.2782 | 6             | 1-1/2       | 6             | 16.67       |
| M       | 360098-131588 | 0.2950  | .2792-.2782 | 6             | 1-1/2       | 6             | 16.67       |

| Size   | Part No.      | Decimal | Shank Dia.    | Overall Lgth. | Flute Lgth. | No. of Flutes | Price /Each |
|--------|---------------|---------|---------------|---------------|-------------|---------------|-------------|
| 19/64  | 360099-131588 | 0.2969  | .2792-.2782   | 6             | 1-1/2       | 6             | \$16.67     |
| N      | 360100-131588 | 0.3020  | .2792-.2782   | 6             | 1-1/2       | 6             | 16.67       |
| 5/16   | 360101-131588 | 0.3125  | .2792-.2782   | 6             | 1-1/2       | 6             | 16.56       |
| O      | 360102-131588 | 0.3160  | .2792-.2782   | 6             | 1-1/2       | 6             | 16.67       |
| P      | 360103-131588 | 0.3230  | .2792-.2782   | 6             | 1-1/2       | 6             | 19.02       |
| 21/64  | 360104-131588 | 0.3281  | .2792-.2782   | 6             | 1-1/2       | 6             | 19.02       |
| Q      | 360105-131588 | 0.3320  | .2792-.2782   | 6             | 1-1/2       | 6             | 19.02       |
| R      | 360106-131588 | 0.3390  | .2792-.2782   | 6             | 1-1/2       | 6             | 19.02       |
| 11/32  | 360107-131588 | 0.3438  | .2792-.2782   | 6             | 1-1/2       | 6             | 19.02       |
| S      | 360108-131588 | 0.3480  | .3105-.3095   | 7             | 1-3/4       | 6             | 19.02       |
| T      | 360109-131588 | 0.3580  | .3105-.3095   | 7             | 1-3/4       | 6             | 19.02       |
| 23/64  | 360110-131588 | 0.3594  | .3105-.3095   | 7             | 1-3/4       | 6             | 19.02       |
| U      | 360111-131588 | 0.3680  | .3105-.3095   | 7             | 1-3/4       | 6             | 19.02       |
| 3/8    | 360112-131588 | 0.3750  | .3105-.3095   | 7             | 1-3/4       | 6             | 18.28       |
| V      | 360113-131588 | 0.3770  | .3105-.3095   | 7             | 1-3/4       | 6             | 19.82       |
| W      | 360114-131588 | 0.3860  | .3105-.3095   | 7             | 1-3/4       | 6             | 19.82       |
| 25/64  | 360115-131588 | 0.3906  | .3105-.3095   | 7             | 1-3/4       | 6             | 19.82       |
| X      | 360116-131588 | 0.3970  | .3105-.3095   | 7             | 1-3/4       | 6             | 20.09       |
| Y      | 360117-131588 | 0.4040  | .3105-.3095   | 7             | 1-3/4       | 6             | 20.09       |
| 13/32  | 360118-131588 | 0.4062  | .3105-.3095   | 7             | 1-3/4       | 6             | 20.09       |
| Z      | 360119-131588 | 0.4130  | .3730-.3720   | 7             | 1-3/4       | 6             | 20.09       |
| 27/64  | 360120-131588 | 0.4219  | .3730-.3720   | 7             | 1-3/4       | 6             | 20.09       |
| 7/16   | 360121-131588 | 0.4375  | .3730-.3720   | 7             | 1-3/4       | 6             | 19.94       |
| 29/64  | 360122-131588 | 0.4531  | .3730-.3720   | 7             | 1-3/4       | 6             | 21.49       |
| 15/32  | 360123-131588 | 0.4688  | .3730-.3720   | 7             | 1-3/4       | 6             | 21.49       |
| 31/64  | 360124-131588 | 0.4844  | .4355-.4345   | 8             | 2           | 6             | 21.49       |
| 1/2    | 360125-131588 | 0.5000  | .4355-.4345   | 8             | 2           | 6             | 23.04       |
| 33/64  | 360126-131588 | 0.5156  | .4355-.4345   | 8             | 2           | 6             | 28.24       |
| 17/32  | 360127-131588 | 0.5312  | .4355-.4345   | 8             | 2           | 8             | 28.24       |
| 35/64  | 360128-131588 | 0.5469  | .4355-.4345   | 8             | 2           | 8             | 29.04       |
| 9/16   | 360129-131588 | 0.5625  | .4355-.4345   | 8             | 2           | 8             | 28.88       |
| 37/64  | 360130-131588 | 0.5781  | .4355-.4345   | 8             | 2           | 8             | 28.72       |
| 19/32  | 360131-131588 | 0.5938  | .4355-.4345   | 8             | 2           | 8             | 28.24       |
| 39/64  | 360132-131588 | 0.6094  | .4355-.4345   | 8             | 2           | 8             | 30.16       |
| 5/8    | 360133-131588 | 0.6250  | .5620-.5605   | 9             | 2-1/4       | 8             | 32.47       |
| 41/64  | 360134-131588 | 0.6406  | .5620-.5605   | 9             | 2-1/4       | 8             | 34.82       |
| 21/32  | 360135-131588 | 0.6562  | .5620-.5605   | 9             | 2-1/4       | 8             | 38.41       |
| 43/64  | 360136-131588 | 0.6719  | .5620-.5605   | 9             | 2-1/4       | 8             | 39.97       |
| 11/16  | 360137-131588 | 0.6875  | .5620-.5605   | 9             | 2-1/4       | 8             | 34.98       |
| 45/64  | 360138-131588 | 0.7031  | .5620-.5605   | 9             | 2-1/4       | 8             | 39.00       |
| 23/32  | 360139-131588 | 0.7188  | .5620-.5605   | 9             | 2-1/4       | 8             | 39.00       |
| 47/64  | 360140-131588 | 0.7344  | .6245-.6230   | 9-1/2         | 2-1/2       | 8             | 44.89       |
| 3/4    | 360141-131588 | 0.7500  | .6245-.6230   | 9-1/2         | 2-1/2       | 8             | 41.73       |
| 49/64  | 360142-131588 | 0.7656  | .6245-.6230   | 9-1/2         | 2-1/2       | 8             | 45.16       |
| 25/32  | 360143-131588 | 0.7812  | .6245-.6230   | 9-1/2         | 2-1/2       | 8             | 45.38       |
| 51/64  | 360144-131588 | 0.7969  | .6245-.6230   | 9-1/2         | 2-1/2       | 8             | 47.20       |
| 13/16  | 360145-131588 | 0.8125  | .6245-.6230   | 9-1/2         | 2-1/2       | 8             | 39.97       |
| 53/64  | 360146-131588 | 0.8281  | .6245-.6230   | 9-1/2         | 2-1/2       | 8             | 45.26       |
| 27/32  | 360147-131588 | 0.8438  | .6245-.6230   | 9-1/2         | 2-1/2       | 8             | 46.93       |
| 55/64  | 360148-131588 | 0.8594  | .7495-.7480   | 10            | 2-5/8       | 8             | 48.74       |
| 7/8    | 360149-131588 | 0.8750  | .7495-.7480   | 10            | 2-5/8       | 8             | 51.48       |
| 57/64  | 360150-131588 | 0.8906  | .7495-.7480   | 10            | 2-5/8       | 10            | 54.70       |
| 29/32  | 360151-131588 | 0.9062  | .7495-.7480   | 10            | 2-5/8       | 10            | 53.63       |
| 59/64  | 360152-131588 | 0.9219  | .7495-.7480   | 10            | 2-5/8       | 10            | 55.39       |
| 15/16  | 360153-131588 | 0.9375  | .7495-.7480   | 10            | 2-5/8       | 10            | 59.41       |
| 61/64  | 360154-131588 | 0.9531  | .7495-.7480   | 10            | 2-5/8       | 10            | 62.78       |
| 31/32  | 360155-131588 | 0.9688  | .7495-.7480   | 10            | 2-5/8       | 10            | 59.52       |
| 63/64  | 360156-131588 | 0.9844  | .8745-.8730   | 10-1/2        | 2-3/4       | 10            | 59.46       |
| 1      | 360157-131588 | 1.0000  | .8745-.8730   | 10-1/2        | 2-3/4       | 10            | 59.46       |
| 1-1/16 | 360158-131588 | 1.0625  | .8745-.8730   | 10-1/2        | 2-3/4       | 10            | 72.16       |
| 1-1/8  | 360159-131588 | 1.1250  | .8745-.8730   | 11            | 2-7/8       | 10            | 69.96       |
| 1-3/16 | 360160-131588 | 1.1875  | .9995-.9980   | 11            | 2-7/8       | 10            | 80.67       |
| 1-1/4  | 360161-131588 | 1.2500  | .9995-.9980   | 11-1/2        | 3           | 12            | 96.09       |
| 1-5/16 | 360162-131588 | 1.3125  | .9995-.9980   | 11-1/2        | 3           | 12            | 93.42       |
| 1-3/8  | 360163-131588 | 1.3750  | .9995-.9980   | 12            | 3-1/4       | 12            | 115.26      |
| 1-7/16 | 360164-131588 | 1.4375  | 1.2475-1.2480 | 12            | 3-1/4       | 12            | 119.38      |
| 1-1/2  | 360165-131588 | 1.5000  | 1.2475-1.2480 | 12-1/2        | 3-1/2       | 12            | 141.22      |

## Reamers Cont.



### Type 51-AG Fast Spiral Car Reamer - 3 Flats On Shank

- 1/2" Straight shank, Left Hand Helix, Collar Stop
- Quickly aligns structural steel
- Cuts stainless steel and tough alloys
- Deburs welded and punched holes



| Size  | Part No. | Price /Each |
|-------|----------|-------------|
| 5/16  | 0302064  | \$74.39     |
| 3/8   | 0302065  | 75.05       |
| 7/16  | 0302066  | 92.73       |
| 1/2   | 0302067  | 89.44       |
| 9/16  | 0302068  | 95.53       |
| 5/8   | 0302069  | 103.55      |
| .652  | 0302070  | 121.92      |
| 11/16 | 0302071  | 115.19      |
| 3/4   | 0302072  | 130.46      |
| .776  | 0302073  | 146.23      |
| 13/16 | 0302074  | 140.62      |
| 7/8   | 0302075  | 147.40      |
| 15/16 | 0302076  | 154.07      |
| 1     | 0302077  | 159.99      |
| 1/16  | 0302078  | 399.15      |

### Type 54-AG Taper Shank Straight Flute Bridge Reamers

Engineered for heavy duty use in the reaming of off sized, misshapen or misaligned holes in structural steel by the bridge building and ship building industries.



| Size   | Part No. | Price /Each |
|--------|----------|-------------|
| 7/16   | 0302079  | \$92.79     |
| 1/2    | 0302080  | 92.75       |
| 9/16   | 0302081  | 108.16      |
| 5/8    | 0302082  | 122.78      |
| 11/16  | 0302083  | 150.64      |
| 3/4    | 0302084  | 170.67      |
| 13/16  | 0302085  | 172.82      |
| 7/8    | 0302086  | 196.51      |
| 15/16  | 0302087  | 196.51      |
| 1      | 0302088  | 225.86      |
| 1-1/16 | 0302089  | 242.92      |
| 1-1/8  | 0302090  | 272.94      |
| 1-3/16 | 0302091  | 302.90      |
| 1-1/4  | 0302092  | 340.72      |
| 1-5/16 | 0302093  | 391.23      |

### Type 55-AG Spiral Flute Taper Shank Bridge Reamers

Spiral Flute bridge reamers cut with a shearing action, sending chips forward and generally give superior hole quality and bind less than the straight flute design.



| Size   | Part No. | Price /Each |
|--------|----------|-------------|
| 7/16   | 0302094  | \$92.80     |
| 1/2    | 0302095  | 92.76       |
| 9/16   | 0302096  | 108.14      |
| 5/8    | 0302097  | 123.01      |
| 11/16  | 0302098  | 150.63      |
| 3/4    | 0302099  | 147.66      |
| 13/16  | 0302100  | 149.95      |
| 7/8    | 0302101  | 184.40      |
| 15/16  | 0302102  | 184.39      |
| 1      | 0302103  | 205.20      |
| 1-1/16 | 0302104  | 248.69      |
| 1-1/8  | 0302105  | 250.69      |
| 1-3/16 | 0302106  | 281.26      |
| 1-1/4  | 0302107  | 320.02      |
| 1-5/16 | 0302108  | 363.79      |

### Type 52-AG Spiral Flute Hex Shank Bridge Reamers

Designed for aligning and enlarging holes in heavy duty structural steel applications. Engineered for use in rotary impact sockets, the high helix is faster and chips less than a standard helix in impact wrench applications. The shank diameter for each reamer perfectly matches the socket size for the bolt which will be driven through the newly reamed hole.



| Size   | Part No. | Price /Each |
|--------|----------|-------------|
| 11/16  | 0302109  | \$181.25    |
| 13/16  | 0302110  | 206.21      |
| 15/16  | 0302111  | 234.36      |
| 1-1/16 | 0302112  | 289.74      |
| 1-3/16 | 0302113  | 361.39      |
| 1-5/16 | 0302114  | 458.18      |

### Type 134-AG Drills 4-Flute Core Drill - Super Premium 1/2" Shank - 3 Flats on Shank

Special Hi-Molybdenum tool steel, gold surface treated body and clearance for maximum lubricity. Close tolerance construction exclusively designed for enlarging existing holes. These core drills may replace tapered reamers in many applications.



| Size  | Part No. | Overall Lgth. | Flute Lgth. | Pkg. Qty. | Price /Each |
|-------|----------|---------------|-------------|-----------|-------------|
| 3/8   | 0310510  | 4-5/16        | 1-7/8       | 1         | \$35.19     |
| 1/2   | 0310511  | 4-5/16        | 1-7/8       | 1         | 45.97       |
| 9/16  | 0310512  | 4-5/16        | 1-7/8       | 1         | 58.83       |
| 5/8   | 0310513  | 4-5/16        | 1-7/8       | 1         | 65.61       |
| 11/16 | 0310514  | 4-5/16        | 1-7/8       | 1         | 73.32       |
| 3/4   | 0310515  | 4-5/16        | 1-7/8       | 1         | 79.89       |

### Type 50-AG Standard Flute Car Reamer - 3 Flats On Shank

These reamers are especially designed for the reaming of structural steel plate commonly found in truck frames, rail cars, bridges and pressure vessels. For use only to enlarge previously formed or drilled holes. CR-4SP Set includes sizes 3/8 1/2 5/8 3/4



| Size   | Part No. | Point Dia. | Overall Lgth. | Shank Dia. | Price /Each |
|--------|----------|------------|---------------|------------|-------------|
| 3/8    | 0310104  | .250       | 4-5/8         | 3/8        | \$60.61     |
| 1/2    | 0310105  | .281       | 5-7/8         | 1/2        | 72.28       |
| 9/16   | 0310106  | .343       | 5-7/8         | 1/2        | 76.81       |
| 5/8    | 0310107  | .343       | 6-3/8         | 1/2        | 83.80       |
| 11/16  | 0310108  | .375       | 6-3/8         | 1/2        | 93.16       |
| 3/4    | 0310109  | .406       | 6-7/8         | 1/2        | 111.75      |
| 1      | 0310110  | .594       | 6-7/8         | 1/2        | 148.57      |
| CR-4SP | 0312368  |            |               |            | 347.57      |

# CARBIDE REAMERS

## Carbide Reamers Cont.

Cutting Tools



### Solid Carbide Reamers

#### Fractional - Chucking Reamer

| Part No. | Dec. In. | Cut Dia. | Flute Lgth. | OAL   | Price /Each |
|----------|----------|----------|-------------|-------|-------------|
| 0361159  | 0.0312   | 1/32     | 1/4         | 1-1/2 | \$10.59     |
| 0361160  | 0.0469   | 3/64     | 3/8         | 1-1/2 | 12.03       |
| 0361161  | 0.0625   | 1/16     | 3/8         | 1-1/2 | 12.72       |
| 0361162  | 0.0781   | 5/64     | 1/2         | 1-3/4 | 11.15       |
| 0361163  | 0.0938   | 3/32     | 1/2         | 2     | 11.85       |
| 0361164  | 0.1094   | 7/64     | 5/8         | 2-1/4 | 12.23       |
| 0359344  | 0.1230   | D/P      | 5/8         | 2-1/4 | 18.32       |
| 0359347  | 0.1240   | U/S      | 5/8         | 2-1/4 | 18.32       |
| 0359354  | 0.1247   | D/P      | 5/8         | 2-1/4 | 18.32       |
| 0361165  | 0.1250   | 1/8      | 5/8         | 2-1/4 | 13.11       |
| 0359357  | 0.1260   | O/S      | 5/8         | 2-1/4 | 18.75       |
| 0361166  | 0.1406   | 9/64     | 3/4         | 2-1/2 | 14.48       |
| 0361167  | 0.1562   | 5/32     | 3/4         | 2-1/2 | 15.09       |
| 0361168  | 0.1719   | 11/64    | 7/8         | 2-3/4 | 17.10       |
| 0359470  | 0.1855   | D/P      | 7/8         | 2-3/4 | 23.48       |
| 0359473  | 0.1865   | U/S      | 7/8         | 2-3/4 | 23.48       |
| 0359475  | 0.1870   | D/P      | 7/8         | 2-3/4 | 23.48       |
| 0361169  | 0.1875   | 3/16     | 7/8         | 2-3/4 | 17.42       |
| 0359479  | 0.1885   | O/S      | 7/8         | 2-3/4 | 23.48       |
| 0361170  | 0.2031   | 13/64    | 1           | 3     | 19.45       |
| 0361171  | 0.2188   | 7/32     | 1           | 3     | 20.03       |
| 0361172  | 0.2344   | 15/64    | 1           | 3     | 20.05       |
| 0359583  | 0.2480   | D/P      | 1           | 3     | 26.37       |
| 0359586  | 0.2490   | U/S      | 1           | 3     | 26.37       |
| 0359588  | 0.2495   | D/P      | 1           | 3     | 26.37       |
| 0361173  | 0.2500   | 1/4      | 1           | 3     | 20.68       |
| 0359591  | 0.2510   | O/S      | 1           | 3     | 26.37       |
| 0361174  | 0.2656   | 17/64    | 1-1/8       | 3-1/4 | 29.10       |
| 0361175  | 0.2812   | 9/32     | 1-1/8       | 3-1/4 | 28.25       |
| 0361176  | 0.2969   | 19/64    | 1-1/8       | 3-1/4 | 31.08       |
| 0361143  | 0.3105   | D/P      | 1-1/8       | 3-1/4 | 44.50       |
| 0361145  | 0.3115   | U/S      | 1-1/8       | 3-1/4 | 44.50       |
| 0359651  | 0.3120   | D/P      | 1-1/8       | 3-1/4 | 44.50       |
| 0361177  | 0.3125   | 5/16     | 1-1/8       | 3-1/4 | 32.03       |
| 0361147  | 0.3135   | O/S      | 1-1/8       | 3-1/4 | 44.50       |
| 0361178  | 0.3281   | 21/64    | 1-1/4       | 3-1/2 | 32.68       |
| 0361179  | 0.3438   | 11/32    | 1-1/4       | 3-1/2 | 31.73       |
| 0361180  | 0.3594   | 23/64    | 1-1/4       | 3-1/2 | 36.64       |
| 0359706  | 0.3730   | D/P      | 1-1/4       | 3-1/2 | 50.62       |
| 0360567  | 0.3740   | U/S      | 1-1/4       | 3-1/2 | 40.74       |
| 0361149  | 0.3745   | D/P      | 1-1/4       | 3-1/2 | 40.74       |
| 0361181  | 0.3750   | 3/8      | 1-1/4       | 3-1/2 | 35.56       |
| 0359709  | 0.3760   | O/S      | 1-1/4       | 3-1/2 | 48.11       |
| 0361182  | 0.3906   | 25/64    | 1-1/4       | 3-1/2 | 44.51       |
| 0361183  | 0.4062   | 13/32    | 1-1/4       | 3-1/2 | 42.11       |
| 0361184  | 0.4219   | 27/64    | 1-3/8       | 4     | 51.90       |
| 0361151  | 0.4355   | D/P      | 1-3/8       | 4     | 65.51       |
| 0361153  | 0.4365   | U/S      | 1-3/8       | 4     | 65.51       |
| 0359765  | 0.4370   | D/P      | 1-3/8       | 4     | 65.51       |
| 0361185  | 0.4375   | 7/16     | 1-3/8       | 4     | 47.40       |
| 0361155  | 0.4385   | O/S      | 1-3/8       | 4     | 65.51       |
| 0361186  | 0.4531   | 29/64    | 1-3/8       | 4     | 56.00       |
| 0361187  | 0.4688   | 15/32    | 1-3/8       | 4     | 54.18       |
| 0361188  | 0.4844   | 31/64    | 1-1/2       | 4     | 62.85       |
| 0359827  | 0.4980   | D/P      | 1-1/2       | 4     | 75.40       |
| 0359829  | 0.4990   | U/S      | 1-1/2       | 4     | 75.40       |
| 0361157  | 0.4995   | D/P      | 1-1/2       | 4     | 66.95       |
| 0361189  | 0.5000   | 1/2      | 1-1/2       | 4     | 61.78       |
| 0359832  | 0.5010   | O/S      | 1-1/2       | 4     | 74.25       |

#### Letter - Chucking Reamer

| Part No. | Dec. In. | Cut Dia. | Flute Lgth. | OAL   | Price /Each |
|----------|----------|----------|-------------|-------|-------------|
| 0361190  | 0.2340   | A        | 1           | 3     | \$21.98     |
| 0361191  | 0.2380   | B        | 1           | 3     | 21.98       |
| 0361192  | 0.2420   | C        | 1           | 3     | 21.32       |
| 0361193  | 0.2460   | D        | 1           | 3     | 21.32       |
| 0361194  | 0.2570   | F        | 1-1/8       | 3-1/4 | 30.00       |
| 0361195  | 0.2610   | G        | 1-1/8       | 3-1/4 | 30.00       |
| 0361196  | 0.2660   | H        | 1-1/8       | 3-1/4 | 30.93       |
| 0361197  | 0.2720   | I        | 1-1/8       | 3-1/4 | 30.93       |



### Solid Carbide Reamer

- Offers superior wear resistance in reaming ferrous metals and many non-ferrous materials
- Straight flute and right hand cutting with a 45° lead cutting angle
- Micrograin carbide with 10% cobalt

4 Flutes on reamers to .2550 diameter

6 Flutes on .2559 dia. and larger

#### Letter - Chucking Reamer - Cont.

| Part No. | Dec. In. | Cut Dia. | Flute Lgth. | OAL   | Price /Each |
|----------|----------|----------|-------------|-------|-------------|
| 0361198  | 0.2770   | J        | 1-1/8       | 3-1/4 | \$30.00     |
| 0361199  | 0.2810   | K        | 1-1/8       | 3-1/4 | 30.00       |
| 0361200  | 0.2900   | L        | 1-1/8       | 3-1/4 | 33.05       |
| 0361201  | 0.2950   | M        | 1-1/8       | 3-1/4 | 34.04       |
| 0361202  | 0.3020   | N        | 1-1/8       | 3-1/4 | 33.05       |
| 0361203  | 0.3160   | O        | 1-1/8       | 3-1/4 | 39.56       |
| 0361204  | 0.3230   | P        | 1-1/4       | 3-1/2 | 35.17       |
| 0361205  | 0.3320   | Q        | 1-1/4       | 3-1/2 | 34.11       |
| 0361206  | 0.3390   | R        | 1-1/4       | 3-1/2 | 35.17       |
| 0361207  | 0.3480   | S        | 1-1/4       | 3-1/2 | 37.80       |
| 0361208  | 0.3580   | T        | 1-1/4       | 3-1/2 | 37.80       |
| 0361209  | 0.3680   | U        | 1-1/4       | 3-1/2 | 38.95       |
| 0361210  | 0.3770   | V        | 1-1/4       | 3-1/2 | 43.43       |
| 0361211  | 0.3860   | W        | 1-1/4       | 3-1/2 | 43.43       |
| 0361212  | 0.3970   | X        | 1-1/4       | 3-1/2 | 44.74       |
| 0361213  | 0.4040   | Y        | 1-1/4       | 3-1/2 | 43.43       |
| 0361214  | 0.4130   | Z        | 1-1/4       | 3-1/2 | 51.90       |

#### Wire - Chucking Reamer

| Part No. | Dec. In. | Cut Dia. | Flute Lgth. | OAL   | Price /Each |
|----------|----------|----------|-------------|-------|-------------|
| 0361215  | 0.2280   | 1        | 1           | 3     | \$21.98     |
| 0361216  | 0.2210   | 2        | 1           | 3     | 20.68       |
| 0361217  | 0.2130   | 3        | 1           | 3     | 21.31       |
| 0361218  | 0.2090   | 4        | 1           | 3     | 21.31       |
| 0361219  | 0.2055   | 5        | 1           | 3     | 20.68       |
| 0361220  | 0.2040   | 6        | 1           | 3     | 21.31       |
| 0361221  | 0.2010   | 7        | 1           | 3     | 20.68       |
| 0361222  | 0.1990   | 8        | 1           | 3     | 20.68       |
| 0361223  | 0.1960   | 9        | 1           | 3     | 21.31       |
| 0361224  | 0.1935   | 10       | 1           | 3     | 20.68       |
| 0361225  | 0.1910   | 11       | 7/8         | 2-3/4 | 20.68       |
| 0361226  | 0.1890   | 12       | 7/8         | 2-3/4 | 19.10       |
| 0361227  | 0.1850   | 13       | 7/8         | 2-3/4 | 18.52       |
| 0361228  | 0.1820   | 14       | 7/8         | 2-3/4 | 18.52       |
| 0361229  | 0.1800   | 15       | 7/8         | 2-3/4 | 19.10       |
| 0361230  | 0.1770   | 16       | 7/8         | 2-3/4 | 19.10       |
| 0361231  | 0.1730   | 17       | 7/8         | 2-3/4 | 20.68       |
| 0361232  | 0.1695   | 18       | 7/8         | 2-3/4 | 17.62       |
| 0361233  | 0.1660   | 19       | 7/8         | 2-3/4 | 18.15       |
| 0361234  | 0.1610   | 20       | 7/8         | 2-3/4 | 18.15       |
| 0361235  | 0.1590   | 21       | 3/4         | 2-1/2 | 15.54       |
| 0361236  | 0.1570   | 22       | 3/4         | 2-1/2 | 16.02       |
| 0361237  | 0.1540   | 23       | 3/4         | 2-1/2 | 15.54       |
| 0361238  | 0.1520   | 24       | 3/4         | 2-1/2 | 16.02       |
| 0361239  | 0.1495   | 25       | 3/4         | 2-1/2 | 16.02       |
| 0361240  | 0.1470   | 26       | 3/4         | 2-1/2 | 16.02       |
| 0361241  | 0.1440   | 27       | 3/4         | 2-1/2 | 15.54       |
| 0361242  | 0.1405   | 28       | 3/4         | 2-1/2 | 15.54       |
| 0361243  | 0.1360   | 29       | 3/4         | 2-1/2 | 16.02       |
| 0361244  | 0.1285   | 30       | 5/8         | 2-1/4 | 14.36       |
| 0361245  | 0.1200   | 31       | 5/8         | 2-1/4 | 13.94       |
| 0361246  | 0.1160   | 32       | 5/8         | 2-1/4 | 13.94       |
| 0361247  | 0.1130   | 33       | 5/8         | 2-1/4 | 13.04       |
| 0361248  | 0.1110   | 34       | 5/8         | 2-1/4 | 13.43       |
| 0361249  | 0.1100   | 35       | 5/8         | 2-1/4 | 13.04       |
| 0361250  | 0.1065   | 36       | 5/8         | 2-1/4 | 13.43       |
| 0361251  | 0.1040   | 37       | 5/8         | 2-1/4 | 13.04       |
| 0361252  | 0.1015   | 38       | 5/8         | 2-1/4 | 13.43       |
| 0361253  | 0.0995   | 39       | 5/8         | 2-1/4 | 13.04       |
| 0361254  | 0.0980   | 40       | 5/8         | 2-1/4 | 13.43       |
| 0361255  | 0.0960   | 41       | 1/2         | 2     | 13.04       |

#### Wire - Chucking Reamer - Cont.

| Part No. | Dec. In. | Cut Dia. | Flute Lgth. | OAL   | Price /Each |
|----------|----------|----------|-------------|-------|-------------|
| 0361256  | 0.0935   | 42       | 1/2         | 2     | \$12.58     |
| 0361257  | 0.0890   | 43       | 1/2         | 2     | 12.20       |
| 0361258  | 0.0860   | 44       | 1/2         | 2     | 12.20       |
| 0361259  | 0.0820   | 45       | 1/2         | 2     | 12.58       |
| 0361260  | 0.0810   | 46       | 1/2         | 1-3/4 | 12.20       |
| 0361261  | 0.0785   | 47       | 1/2         | 1-3/4 | 11.85       |
| 0361262  | 0.0760   | 48       | 1/2         | 1-3/4 | 11.50       |
| 0361263  | 0.0730   | 49       | 1/2         | 1-3/4 | 11.85       |
| 0361264  | 0.0700   | 50       | 1/2         | 1-3/4 | 11.85       |
| 0361265  | 0.0670   | 51       | 1/2         | 1-3/4 | 11.50       |
| 0361266  | 0.0635   | 52       | 3/8         | 1-1/2 | 13.13       |
| 0361267  | 0.0595   | 53       | 3/8         | 1-1/2 | 13.53       |
| 0361268  | 0.0550   | 54       | 3/8         | 1-1/2 | 13.13       |
| 0361269  | 0.0520   | 55       | 3/8         | 1-1/2 | 12.99       |
| 0361270  | 0.0465   | 56       | 3/8         | 1-1/2 | 12.79       |
| 0361271  | 0.0430   | 57       | 3/8         | 1-1/2 | 12.79       |
| 0361272  | 0.0420   | 58       | 3/8         | 1-1/2 | 12.40       |
| 0361273  | 0.0410   | 59       | 1/4         | 1-1/2 | 12.40       |
| 0361274  | 0.0400   | 60       | 1/4         | 1-1/2 | 12.79       |
| 0361275  | 0.0390   | 61       | 1/4         | 1-1/2 | 12.59       |
| 0361276  | 0.0380   | 62       | 1/4         | 1-1/2 | 12.09       |
| 0361277  | 0.0370   | 63       | 1/4         | 1-1/2 | 11.74       |
| 0361278  | 0.0360   | 64       | 1/4         | 1-1/2 | 12.09       |
| 0361279  | 0.0350   | 65       | 1/4         | 1-1/2 | 11.00       |
| 0361280  | 0.0330   | 66       | 1/4         | 1-1/2 | 11.00       |
| 0361281  | 0.0320   | 67       | 1/4         | 1-1/2 | 10.91       |
| 0361282  | 0.0310   | 68       | 1/4         | 1-1/2 | 13.10       |
| 0361283  | 0.0292   | 69       | 1/4         | 1-1/2 | 13.10       |
| 0361284  | 0.0280   | 70       | 1/4         | 1-1/2 | 13.10       |

#### Metric - Chucking Reamer

| Part No. | Dec. In. | Cut Dia. | Flute Lgth. | OAL   | Price /Each |
|----------|----------|----------|-------------|-------|-------------|
| 0361285  | 0.0394   | 1.0 mm   | 1/4         | 1-1/2 | \$12.59     |
| 0361286  | 0.0591   | 1.5 mm   | 3/8         | 1-1/2 | 13.59       |
| 0361293  | 0.0787   | 2.0 mm   | 1/2         | 1-3/4 | 12.06       |
| 0361294  | 0.0984   | 2.5 mm   | 5/8         | 2-1/4 | 13.73       |
| 0361295  | 0.1181   | 3.0 mm   | 5/8         | 2-1/4 | 13.99       |
| 0361296  | 0.1378   | 3.5 mm   | 3/4         | 2-1/2 | 15.89       |
| 0361297  | 0.1575   | 4.0 mm   | 3/4         | 2-1/2 | 16.02       |
| 0361298  | 0.1772   | 4.5 mm   | 7/8         | 2-3/4 | 19.40       |
| 0361299  | 0.1969   | 5.0 mm   | 1           | 3     | 21.16       |
| 0361300  | 0.2165   | 5.5 mm   | 1           | 3     | 25.69       |
| 0361301  | 0.2362   | 6.0 mm   | 1           | 3     | 21.91       |
| 0361302  | 0.2559   | 6.5 mm   | 1-1/8       | 3-1/4 | 30.44       |
| 0361303  | 0.2756   | 7.0 mm   | 1-1/8       | 3-1/4 | 29.85       |
| 0361304  | 0.2953   | 7.5 mm   | 1-1/8       | 3-1/4 | 35.38       |
| 0361305  | 0.3150   | 8.0 mm   | 1-1/8       | 3-1/4 | 39.33       |
| 0361306  | 0.3346   | 8.5 mm   | 1-1/4       | 3-1/2 | 36.36       |
| 0361307  | 0.3543   | 9.0 mm   | 1-1/4       | 3-1/2 | 37.68       |
| 0361308  | 0.3740   | 9.5 mm   | 1-1/4       | 3-1/2 | 40.74       |
| 0361287  | 0.3937   | 10.0 mm  | 1-1/4       | 3-1/2 | 47.55       |
| 0361288  | 0.4134   | 10.5 mm  | 1-1/4       | 3-1/2 | 55.62       |
| 0361289  | 0        |          |             |       |             |

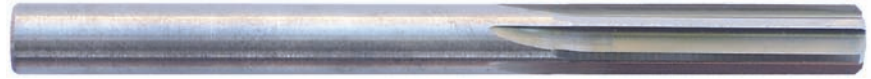
## Carbide Reamers Cont.



### Solid Carbide Reamers Cont.

#### Decimal - Chucking Reamer

| Part No. | Cut Dia. | Flute Lgth. | Overall Lgth. | Price /Each |
|----------|----------|-------------|---------------|-------------|
| 0358669  | 0.03"    | 0.25"       | 1-1/2"        | \$18.59     |
| 0358672  | 0.0315"  | 0.25"       | 1-1/2"        | 16.39       |
| 0358673  | 0.0325"  | 0.25"       | 1-1/2"        | 16.39       |
| 0358675  | 0.0335"  | 0.25"       | 1-1/2"        | 16.48       |
| 0358676  | 0.034"   | 0.25"       | 1-1/2"        | 16.48       |
| 0358677  | 0.0345"  | 0.25"       | 1-1/2"        | 16.48       |
| 0358678  | 0.0355"  | 0.25"       | 1-1/2"        | 17.58       |
| 0358679  | 0.0365"  | 0.25"       | 1-1/2"        | 17.23       |
| 0358680  | 0.0375"  | 0.25"       | 1-1/2"        | 17.58       |
| 0358683  | 0.0385"  | 0.25"       | 1-1/2"        | 18.07       |
| 0358684  | 0.0395"  | 0.25"       | 1-1/2"        | 18.27       |
| 0358685  | 0.0405"  | 0.25"       | 1-1/2"        | 17.88       |
| 0358686  | 0.0415"  | 0.25"       | 1-1/2"        | 17.88       |
| 0358687  | 0.0425"  | 0.375"      | 1-1/2"        | 18.27       |
| 0358688  | 0.0435"  | 0.375"      | 1-1/2"        | 18.27       |
| 0358691  | 0.044"   | 0.375"      | 1-1/2"        | 18.27       |
| 0358692  | 0.0445"  | 0.375"      | 1-1/2"        | 18.27       |
| 0358693  | 0.045"   | 0.375"      | 1-1/2"        | 18.27       |
| 0358694  | 0.0455"  | 0.375"      | 1-1/2"        | 18.27       |
| 0358695  | 0.046"   | 0.375"      | 1-1/2"        | 18.27       |
| 0358696  | 0.047"   | 0.375"      | 1-1/2"        | 18.48       |
| 0358697  | 0.0475"  | 0.375"      | 1-1/2"        | 18.48       |
| 0358698  | 0.048"   | 0.375"      | 1-1/2"        | 18.48       |
| 0358699  | 0.0485"  | 0.375"      | 1-1/2"        | 18.48       |
| 0358700  | 0.049"   | 0.375"      | 1-1/2"        | 18.48       |
| 0358701  | 0.0495"  | 0.375"      | 1-1/2"        | 18.48       |
| 0358702  | 0.05"    | 0.375"      | 1-1/2"        | 18.48       |
| 0358705  | 0.0505"  | 0.375"      | 1-1/2"        | 18.48       |
| 0358706  | 0.051"   | 0.375"      | 1-1/2"        | 18.48       |
| 0358707  | 0.0515"  | 0.375"      | 1-1/2"        | 18.48       |
| 0358708  | 0.0525"  | 0.375"      | 1-1/2"        | 18.61       |
| 0358709  | 0.053"   | 0.375"      | 1-1/2"        | 18.61       |
| 0358710  | 0.0535"  | 0.375"      | 1-1/2"        | 18.61       |
| 0358711  | 0.054"   | 0.375"      | 1-1/2"        | 18.61       |
| 0358712  | 0.0545"  | 0.375"      | 1-1/2"        | 18.61       |
| 0358713  | 0.0555"  | 0.375"      | 1-1/2"        | 19.01       |
| 0358714  | 0.056"   | 0.375"      | 1-1/2"        | 19.01       |
| 0358715  | 0.0565"  | 0.375"      | 1-1/2"        | 19.01       |
| 0358716  | 0.057"   | 0.375"      | 1-1/2"        | 19.01       |
| 0358717  | 0.0575"  | 0.375"      | 1-1/2"        | 19.01       |
| 0358718  | 0.058"   | 0.375"      | 1-1/2"        | 19.01       |
| 0358719  | 0.0585"  | 0.375"      | 1-1/2"        | 19.01       |
| 0358720  | 0.059"   | 0.375"      | 1-1/2"        | 19.01       |
| 0358721  | 0.06"    | 0.375"      | 1-1/2"        | 18.20       |
| 0358722  | 0.0605"  | 0.375"      | 1-1/2"        | 18.20       |
| 0358723  | 0.061"   | 0.375"      | 1-1/2"        | 18.20       |
| 0358724  | 0.0615"  | 0.375"      | 1-1/2"        | 18.20       |
| 0358725  | 0.062"   | 0.375"      | 1-1/2"        | 18.20       |
| 0358727  | 0.063"   | 0.375"      | 1-1/2"        | 18.61       |
| 0358728  | 0.064"   | 0.375"      | 1-1/2"        | 19.86       |
| 0358729  | 0.0645"  | 0.375"      | 1-1/2"        | 19.86       |
| 0358730  | 0.065"   | 0.375"      | 1-1/2"        | 19.86       |
| 0358731  | 0.0655"  | 0.5"        | 1-3/4"        | 15.89       |
| 0358732  | 0.066"   | 0.5"        | 1-3/4"        | 15.89       |
| 0358733  | 0.0665"  | 0.5"        | 1-3/4"        | 15.89       |
| 0358734  | 0.0675"  | 0.5"        | 1-3/4"        | 15.89       |
| 0358735  | 0.068"   | 0.5"        | 1-3/4"        | 15.89       |
| 0358736  | 0.0685"  | 0.5"        | 1-3/4"        | 15.89       |
| 0358737  | 0.069"   | 0.5"        | 1-3/4"        | 15.89       |
| 0358738  | 0.0695"  | 0.5"        | 1-3/4"        | 15.89       |
| 0358739  | 0.0705"  | 0.5"        | 1-3/4"        | 15.89       |
| 0358740  | 0.071"   | 0.5"        | 1-3/4"        | 15.89       |
| 0358741  | 0.0715"  | 0.5"        | 1-3/4"        | 15.89       |
| 0358742  | 0.072"   | 0.5"        | 1-3/4"        | 15.89       |
| 0358743  | 0.0725"  | 0.5"        | 1-3/4"        | 15.89       |
| 0358744  | 0.0735"  | 0.5"        | 1-3/4"        | 15.89       |
| 0358745  | 0.074"   | 0.5"        | 1-3/4"        | 15.89       |
| 0358746  | 0.0745"  | 0.5"        | 1-3/4"        | 15.89       |
| 0358747  | 0.075"   | 0.5"        | 1-3/4"        | 15.89       |
| 0358750  | 0.0755"  | 0.5"        | 1-3/4"        | 15.89       |
| 0358751  | 0.0765"  | 0.5"        | 1-3/4"        | 15.89       |
| 0358752  | 0.077"   | 0.5"        | 1-3/4"        | 15.89       |
| 0358753  | 0.0775"  | 0.5"        | 1-3/4"        | 15.89       |



### Solid Carbide Reamer

- Offers superior wear resistance in reaming ferrous metals and many non-ferrous materials
- Straight flute and right hand cutting with a 45° lead cutting angle
- Micrograin carbide with 10% cobalt

4 Flutes on reamers to .2550 diameter

6 Flutes on .2559 dia. and larger

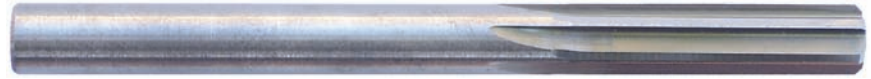
| Part No. | Cut Dia. | Flute Lgth. | Overall Lgth. | Price /Each |
|----------|----------|-------------|---------------|-------------|
| 0358754  | 0.078"   | 0.5"        | 1-3/4"        | \$15.89     |
| 0358755  | 0.079"   | 0.5"        | 1-3/4"        | 16.59       |
| 0358756  | 0.0795"  | 0.5"        | 1-3/4"        | 16.59       |
| 0358757  | 0.08"    | 0.5"        | 1-3/4"        | 16.59       |
| 0358758  | 0.0805"  | 0.5"        | 1-3/4"        | 16.59       |
| 0358759  | 0.0815"  | 0.5"        | 2"            | 16.97       |
| 0358760  | 0.0825"  | 0.5"        | 2"            | 16.59       |
| 0358761  | 0.083"   | 0.5"        | 2"            | 16.59       |
| 0358762  | 0.0835"  | 0.5"        | 2"            | 16.59       |
| 0358763  | 0.084"   | 0.5"        | 2"            | 16.59       |
| 0358764  | 0.0845"  | 0.5"        | 2"            | 16.59       |
| 0358765  | 0.085"   | 0.5"        | 2"            | 16.59       |
| 0358766  | 0.0855"  | 0.5"        | 2"            | 16.59       |
| 0358767  | 0.0865"  | 0.5"        | 2"            | 16.59       |
| 0358768  | 0.087"   | 0.5"        | 2"            | 16.59       |
| 0358769  | 0.0875"  | 0.5"        | 2"            | 16.59       |
| 0358770  | 0.0879"  | 0.5"        | 2"            | 16.59       |
| 0358771  | 0.0884"  | 0.5"        | 2"            | 16.59       |
| 0358772  | 0.0895"  | 0.5"        | 2"            | 16.97       |
| 0358773  | 0.0900"  | 0.5"        | 2"            | 16.97       |
| 0358774  | 0.0905"  | 0.5"        | 2"            | 16.97       |
| 0358775  | 0.0910"  | 0.5"        | 2"            | 16.97       |
| 0358776  | 0.0915"  | 0.5"        | 2"            | 16.97       |
| 0358777  | 0.0920"  | 0.5"        | 2"            | 16.97       |
| 0358778  | 0.0925"  | 0.5"        | 2"            | 16.97       |
| 0358779  | 0.0930"  | 0.5"        | 2"            | 16.97       |
| 0358780  | 0.094"   | 0.5"        | 2"            | 17.42       |
| 0358781  | 0.0945"  | 0.5"        | 2"            | 17.42       |
| 0358782  | 0.095"   | 0.5"        | 2"            | 17.42       |
| 0358783  | 0.0955"  | 0.5"        | 2"            | 17.42       |
| 0358784  | 0.0965"  | 0.5"        | 2"            | 17.82       |
| 0358785  | 0.097"   | 0.625"      | 2-1/4"        | 17.82       |
| 0358786  | 0.0975"  | 0.625"      | 2-1/4"        | 17.82       |
| 0358787  | 0.0985"  | 0.625"      | 2-1/4"        | 17.42       |
| 0358788  | 0.099"   | 0.625"      | 2-1/4"        | 17.42       |
| 0358789  | 0.1"     | 0.625"      | 2-1/4"        | 17.82       |
| 0358819  | 0.1005"  | 0.625"      | 2-1/4"        | 17.82       |
| 0358836  | 0.101"   | 0.625"      | 2-1/4"        | 17.82       |
| 0358869  | 0.102"   | 0.625"      | 2-1/4"        | 17.42       |
| 0358897  | 0.1025"  | 0.625"      | 2-1/4"        | 17.42       |
| 0358910  | 0.103"   | 0.625"      | 2-1/4"        | 17.42       |
| 0358939  | 0.1035"  | 0.625"      | 2-1/4"        | 17.42       |
| 0358984  | 0.1045"  | 0.625"      | 2-1/4"        | 17.82       |
| 0358998  | 0.105"   | 0.625"      | 2-1/4"        | 17.82       |
| 0359032  | 0.1055"  | 0.625"      | 2-1/4"        | 17.82       |
| 0359050  | 0.106"   | 0.625"      | 2-1/4"        | 17.82       |
| 0359093  | 0.107"   | 0.625"      | 2-1/4"        | 17.82       |
| 0359127  | 0.1075"  | 0.625"      | 2-1/4"        | 17.82       |
| 0359140  | 0.108"   | 0.625"      | 2-1/4"        | 17.82       |
| 0359176  | 0.1085"  | 0.625"      | 2-1/4"        | 17.82       |
| 0359186  | 0.109"   | 0.625"      | 2-1/4"        | 17.82       |
| 0359221  | 0.1095"  | 0.625"      | 2-1/4"        | 18.32       |
| 0359248  | 0.1105"  | 0.625"      | 2-1/4"        | 18.32       |
| 0359266  | 0.1115"  | 0.625"      | 2-1/4"        | 18.32       |
| 0359270  | 0.112"   | 0.625"      | 2-1/4"        | 18.32       |
| 0359286  | 0.1125"  | 0.625"      | 2-1/4"        | 18.32       |
| 0359299  | 0.1135"  | 0.625"      | 2-1/4"        | 18.32       |
| 0359300  | 0.114"   | 0.625"      | 2-1/4"        | 18.32       |
| 0359305  | 0.1145"  | 0.625"      | 2-1/4"        | 18.32       |
| 0359306  | 0.115"   | 0.625"      | 2-1/4"        | 18.32       |
| 0359311  | 0.1155"  | 0.625"      | 2-1/4"        | 18.32       |
| 0359312  | 0.1165"  | 0.625"      | 2-1/4"        | 18.32       |
| 0359313  | 0.117"   | 0.625"      | 2-1/4"        | 18.32       |
| 0359318  | 0.1175"  | 0.625"      | 2-1/4"        | 18.32       |
| 0359319  | 0.118"   | 0.625"      | 2-1/4"        | 18.32       |
| 0359320  | 0.1185"  | 0.625"      | 2-1/4"        | 18.32       |

| Part No. | Cut Dia. | Flute Lgth. | Overall Lgth. | Price /Each |
|----------|----------|-------------|---------------|-------------|
| 0359322  | 0.119"   | 0.625"      | 2-1/4"        | \$18.32     |
| 0359328  | 0.1195"  | 0.625"      | 2-1/4"        | 18.32       |
| 0359334  | 0.1205"  | 0.625"      | 2-1/4"        | 18.32       |
| 0359335  | 0.121"   | 0.625"      | 2-1/4"        | 18.32       |
| 0359337  | 0.1215"  | 0.625"      | 2-1/4"        | 18.32       |
| 0359338  | 0.122"   | 0.625"      | 2-1/4"        | 18.32       |
| 0359343  | 0.1225"  | 0.625"      | 2-1/4"        | 18.32       |
| 0359344  | D/P      | 0.625"      | 2-1/4"        | 18.32       |
| 0359346  | 0.1235"  | 0.625"      | 2-1/4"        | 18.32       |
| 0359347  | U/S      | 0.625"      | 2-1/4"        | 18.32       |
| 0359353  | 0.1245"  | 0.625"      | 2-1/4"        | 18.32       |
| 0359354  | D/P      | 0.625"      | 2-1/4"        | 18.32       |
| 0359356  | 0.1255"  | 0.625"      | 2-1/4"        | 18.75       |
| 0359357  | O/S      | 0.625"      | 2-1/4"        | 18.75       |
| 0359358  | 0.1265"  | 0.625"      | 2-1/4"        | 18.75       |
| 0359359  | 0.127"   | 0.625"      | 2-1/4"        | 18.75       |
| 0359360  | 0.1275"  | 0.625"      | 2-1/4"        | 18.75       |
| 0359361  | 0.128"   | 0.625"      | 2-1/4"        | 18.75       |
| 0359362  | 0.129"   | 0.625"      | 2-1/4"        | 20.40       |
| 0359364  | 0.1295"  | 0.625"      | 2-1/4"        | 20.40       |
| 0359365  | 0.13"    | 0.625"      | 2-1/4"        | 20.40       |
| 0359366  | 0.1305"  | 0.75"       | 2-1/2"        | 20.40       |
| 0359367  | 0.131"   | 0.75"       | 2-1/2"        | 20.40       |
| 0359368  | 0.1315"  | 0.75"       | 2-1/2"        | 20.40       |
| 0359369  | 0.132"   | 0.75"       | 2-1/2"        | 20.40       |
| 0359370  | 0.1325"  | 0.75"       | 2-1/2"        | 20.40       |
| 0359371  | 0.133"   | 0.75"       | 2-1/2"        | 20.40       |
| 0359372  | 0.1335"  | 0.75"       | 2-1/2"        | 20.40       |
| 0359373  | 0.134"   | 0.75"       | 2-1/2"        | 20.40       |
| 0359374  | 0.1345"  | 0.75"       | 2-1/2"        | 20.40       |
| 0359375  | 0.135"   | 0.75"       | 2-1/2"        | 20.40       |
| 0359376  | 0.1355"  | 0.75"       | 2-1/2"        | 20.40       |
| 0359377  | 0.1365"  | 0.75"       | 2-1/2"        | 19.92       |
| 0359378  | 0.137"   | 0.75"       | 2-1/2"        | 19.92       |
| 0359379  | 0.1375"  | 0.75"       | 2-1/2"        | 19.92       |
| 0359380  | 0.138"   | 0.75"       | 2-1/2"        | 19.92       |
| 0359381  | 0.1385"  | 0.75"       | 2-1/2"        | 19.92       |
| 0359382  | 0.139"   | 0.75"       | 2-1/2"        | 19.92       |
| 0359383  | 0.1395"  | 0.75"       | 2-1/2"        | 19.92       |
| 0359384  | 0.14"    | 0.75"       | 2-1/2"        | 19.92       |
| 0359386  | 0.141"   | 0.75"       | 2-1/2"        | 19.92       |
| 0359387  | 0.1415"  | 0.75"       | 2-1/2"        | 19.92       |
| 0359388  | 0.142"   | 0.75"       | 2-1/2"        | 19.92       |
| 0359394  | 0.1425"  | 0.75"       | 2-1/2"        | 19.92       |
| 0359397  | 0.143"   | 0.75"       | 2-1/2"        | 19.92       |
| 0359398  | 0.1435"  | 0.75"       | 2-1/2"        | 19.92       |
| 0359399  | 0.1445"  | 0.75"       | 2-1/2"        | 20.40       |
| 0359400  | 0.145"   | 0.75"       | 2-1/2"        | 20.40       |
| 0359402  | 0.1455"  | 0.75"       | 2-1/2"        | 20.40       |
| 0359403  | 0.146"   | 0.75"       | 2-1/2"        | 20.40       |
| 0359404  | 0.1465"  | 0.75"       | 2-1/2"        | 20.40       |
| 0359405  | 0.1475"  | 0.75"       | 2-1/2"        | 20.40       |
| 0359406  | 0.148"   | 0.75"       | 2-1/2"        | 20.40       |
| 0359407  | 0.1485"  | 0.75"       | 2-1/2"        | 20.40       |
| 0359408  | 0.149"   | 0.75"       | 2-1/2"        | 20.40       |
| 0359409  | 0.15"    | 0.75"       | 2-1/2"        | 20.40       |
| 0359410  | 0.1505"  | 0.75"       | 2-1/2"        | 20.40       |
| 0359411  | 0.1507"  | 0.75"       | 2-1/2"        | 20.40       |
| 0359412  | 0.151"   | 0.75"       | 2-1/2"        | 20.40       |
| 0359413  | 0.1515"  | 0.75"       | 2-1/2"        | 20.40       |
| 0359414  | 0.1525"  | 0.75"       | 2-1/2"        | 19.92       |
| 0359415  | 0.153"   | 0.75"       | 2-1/2"        | 20.40       |
| 0359416  | 0.1535"  | 0.75"       | 2-1/2"        | 20.40       |
| 0359417  | 0.1541"  | 0.75"       | 2-1/2"        | 20.40       |
| 0359418  | 0.1545"  | 0.75"       | 2-1/2"        | 20.40       |
| 0359419  | 0.155"   | 0.75"       | 2-1/2"        | 20.40       |



# CARBIDE REAMERS

## Carbide Reamers Cont.



Cutting Tools

### Solid Carbide Reamers Cont.

#### Decimal - Chucking Reamer - Cont.

| Part No. | Cut Dia. | Flute Lgth. | Overall Lgth. | Price /Each |
|----------|----------|-------------|---------------|-------------|
| 0359420  | 0.1555"  | 0.75"       | 2-1/2"        | \$20.40     |
| 0359421  | 0.156"   | 0.75"       | 2-1/2"        | 20.40       |
| 0359422  | 0.1565"  | 0.75"       | 2-1/2"        | 20.40       |
| 0359423  | 0.158"   | 0.75"       | 2-1/2"        | 20.40       |
| 0359424  | 0.1585"  | 0.75"       | 2-1/2"        | 20.40       |
| 0359425  | 0.1595"  | 0.75"       | 2-1/2"        | 22.54       |
| 0359426  | 0.16"    | 0.75"       | 2-1/2"        | 22.54       |
| 0359427  | 0.1605"  | 0.75"       | 2-1/2"        | 22.54       |
| 0359428  | 0.1615"  | 0.875"      | 2-3/4"        | 22.54       |
| 0359429  | 0.162"   | 0.875"      | 2-3/4"        | 22.54       |
| 0359430  | 0.1625"  | 0.875"      | 2-3/4"        | 22.54       |
| 0359431  | 0.163"   | 0.875"      | 2-3/4"        | 22.54       |
| 0359432  | 0.1635"  | 0.875"      | 2-3/4"        | 22.54       |
| 0359433  | 0.164"   | 0.875"      | 2-3/4"        | 22.54       |
| 0359434  | 0.1645"  | 0.875"      | 2-3/4"        | 22.54       |
| 0359435  | 0.165"   | 0.875"      | 2-3/4"        | 22.54       |
| 0359436  | 0.1655"  | 0.875"      | 2-3/4"        | 22.54       |
| 0359437  | 0.1665"  | 0.875"      | 2-3/4"        | 22.01       |
| 0359438  | 0.167"   | 0.875"      | 2-3/4"        | 22.01       |
| 0359439  | 0.1675"  | 0.875"      | 2-3/4"        | 22.01       |
| 0359440  | 0.168"   | 0.875"      | 2-3/4"        | 22.01       |
| 0359441  | 0.1685"  | 0.875"      | 2-3/4"        | 22.01       |
| 0359442  | 0.169"   | 0.875"      | 2-3/4"        | 22.01       |
| 0359443  | 0.17"    | 0.875"      | 2-3/4"        | 25.06       |
| 0359444  | 0.1705"  | 0.875"      | 2-3/4"        | 25.06       |
| 0359445  | 0.171"   | 0.875"      | 2-3/4"        | 25.06       |
| 0359446  | 0.1715"  | 0.875"      | 2-3/4"        | 25.06       |
| 0359447  | 0.172"   | 0.875"      | 2-3/4"        | 25.06       |
| 0359448  | 0.1725"  | 0.875"      | 2-3/4"        | 25.06       |
| 0359449  | 0.1735"  | 0.875"      | 2-3/4"        | 23.48       |
| 0359450  | 0.174"   | 0.875"      | 2-3/4"        | 23.48       |
| 0359451  | 0.1745"  | 0.875"      | 2-3/4"        | 23.48       |
| 0359452  | 0.175"   | 0.875"      | 2-3/4"        | 23.48       |
| 0359453  | 0.1755"  | 0.875"      | 2-3/4"        | 23.48       |
| 0359454  | 0.176"   | 0.875"      | 2-3/4"        | 23.48       |
| 0359455  | 0.1765"  | 0.875"      | 2-3/4"        | 23.48       |
| 0359456  | 0.1775"  | 0.875"      | 2-3/4"        | 23.48       |
| 0359457  | 0.178"   | 0.875"      | 2-3/4"        | 23.48       |
| 0359458  | 0.1785"  | 0.875"      | 2-3/4"        | 23.48       |
| 0359459  | 0.179"   | 0.875"      | 2-3/4"        | 23.48       |
| 0359460  | 0.1795"  | 0.875"      | 2-3/4"        | 23.48       |
| 0359461  | 0.1805"  | 0.875"      | 2-3/4"        | 23.48       |
| 0359462  | 0.181"   | 0.875"      | 2-3/4"        | 23.48       |
| 0359463  | 0.1814"  | 0.875"      | 2-3/4"        | 23.48       |
| 0359464  | 0.1815"  | 0.875"      | 2-3/4"        | 23.48       |
| 0359465  | 0.1825"  | 0.875"      | 2-3/4"        | 23.48       |
| 0359466  | 0.183"   | 0.875"      | 2-3/4"        | 23.48       |
| 0359467  | 0.1835"  | 0.875"      | 2-3/4"        | 23.48       |
| 0359468  | 0.184"   | 0.875"      | 2-3/4"        | 23.48       |
| 0359469  | 0.1845"  | 0.875"      | 2-3/4"        | 23.48       |
| 0359470  | D/P      | 0.875"      | 2-3/4"        | 23.48       |
| 0359472  | 0.186"   | 0.875"      | 2-3/4"        | 23.48       |
| 0359473  | U/S      | 0.875"      | 2-3/4"        | 23.48       |
| 0359475  | D/P      | 0.875"      | 2-3/4"        | 23.48       |
| 0359477  | 0.1872"  | 0.875"      | 2-3/4"        | 23.48       |
| 0359478  | 0.188"   | 0.875"      | 2-3/4"        | 23.48       |
| 0359479  | O/S      | 0.875"      | 2-3/4"        | 23.48       |
| 0359481  | 0.1895"  | 0.875"      | 2-3/4"        | 25.06       |
| 0359482  | 0.19"    | 0.875"      | 2-3/4"        | 25.06       |
| 0359483  | 0.1905"  | 0.875"      | 2-3/4"        | 25.06       |
| 0359484  | 0.1915"  | 0.875"      | 2-3/4"        | 25.06       |
| 0359485  | 0.192"   | 1"          | 3"            | 25.06       |
| 0359486  | 0.1925"  | 1"          | 3"            | 25.06       |
| 0359487  | 0.193"   | 1"          | 3"            | 25.06       |
| 0359488  | 0.194"   | 1"          | 3"            | 25.06       |
| 0359489  | 0.1945"  | 1"          | 3"            | 25.06       |
| 0359490  | 0.195"   | 1"          | 3"            | 25.06       |
| 0359491  | 0.1955"  | 1"          | 3"            | 25.06       |
| 0359492  | 0.1965"  | 1"          | 3"            | 25.06       |
| 0359493  | 0.197"   | 1"          | 3"            | 25.06       |
| 0359494  | 0.1975"  | 1"          | 3"            | 25.06       |
| 0359495  | 0.198"   | 1"          | 3"            | 25.06       |
| 0359496  | 0.1985"  | 1"          | 3"            | 25.06       |

### Solid Carbide Reamer

- Offers superior wear resistance in reaming ferrous metals and many non-ferrous materials
- Straight flute and right hand cutting with a 45° lead cutting angle
- Micrograin carbide with 10% cobalt

4 Flutes on reamers to .2550 diameter

6 Flutes on .2559 dia. and larger

| Part No. | Cut Dia. | Flute Lgth. | Overall Lgth. | Price /Each |
|----------|----------|-------------|---------------|-------------|
| 0359497  | 0.1995"  | 1"          | 3"            | \$25.06     |
| 0359498  | 0.2"     | 1"          | 3"            | 25.06       |
| 0359499  | 0.2005"  | 1"          | 3"            | 25.06       |
| 0359500  | 0.2015"  | 1"          | 3"            | 25.69       |
| 0359501  | 0.202"   | 1"          | 3"            | 25.69       |
| 0359502  | 0.2025"  | 1"          | 3"            | 25.69       |
| 0359503  | 0.203"   | 1"          | 3"            | 25.69       |
| 0359504  | 0.2035"  | 1"          | 3"            | 25.69       |
| 0359505  | 0.2045"  | 1"          | 3"            | 25.69       |
| 0359506  | 0.205"   | 1"          | 3"            | 25.69       |
| 0359507  | 0.206"   | 1"          | 3"            | 25.69       |
| 0359508  | 0.2065"  | 1"          | 3"            | 25.69       |
| 0359509  | 0.207"   | 1"          | 3"            | 25.69       |
| 0359510  | 0.2075"  | 1"          | 3"            | 25.69       |
| 0359511  | 0.208"   | 1"          | 3"            | 25.69       |
| 0359512  | 0.2085"  | 1"          | 3"            | 25.69       |
| 0359513  | 0.2095"  | 1"          | 3"            | 25.69       |
| 0359514  | 0.21"    | 1"          | 3"            | 25.69       |
| 0359515  | 0.2105"  | 1"          | 3"            | 25.69       |
| 0359516  | 0.211"   | 1"          | 3"            | 25.69       |
| 0359517  | 0.2115"  | 1"          | 3"            | 25.69       |
| 0359518  | 0.212"   | 1"          | 3"            | 25.69       |
| 0359519  | 0.2125"  | 1"          | 3"            | 25.69       |
| 0359520  | 0.2135"  | 1"          | 3"            | 25.69       |
| 0359521  | 0.214"   | 1"          | 3"            | 25.69       |
| 0359522  | 0.2145"  | 1"          | 3"            | 25.69       |
| 0359523  | 0.215"   | 1"          | 3"            | 25.69       |
| 0359524  | 0.2155"  | 1"          | 3"            | 25.69       |
| 0359525  | 0.216"   | 1"          | 3"            | 25.69       |
| 0359526  | 0.217"   | 1"          | 3"            | 25.69       |
| 0359527  | 0.2175"  | 1"          | 3"            | 25.69       |
| 0359528  | 0.2177"  | 1"          | 3"            | 25.69       |
| 0359529  | 0.218"   | 1"          | 3"            | 25.69       |
| 0359530  | 0.2185"  | 1"          | 3"            | 25.69       |
| 0359531  | 0.219"   | 1"          | 3"            | 26.37       |
| 0359532  | 0.2195"  | 1"          | 3"            | 26.37       |
| 0359533  | 0.22"    | 1"          | 3"            | 26.37       |
| 0359534  | 0.2205"  | 1"          | 3"            | 26.37       |
| 0359535  | 0.2215"  | 1"          | 3"            | 26.37       |
| 0359536  | 0.222"   | 1"          | 3"            | 26.37       |
| 0359537  | 0.2225"  | 1"          | 3"            | 26.37       |
| 0359538  | 0.223"   | 1"          | 3"            | 26.37       |
| 0359539  | 0.2235"  | 1"          | 3"            | 26.37       |
| 0359540  | 0.224"   | 1"          | 3"            | 26.37       |
| 0359541  | 0.2245"  | 1"          | 3"            | 26.37       |
| 0359542  | 0.225"   | 1"          | 3"            | 26.37       |
| 0359543  | 0.2255"  | 1"          | 3"            | 26.37       |
| 0359544  | 0.226"   | 1"          | 3"            | 26.37       |
| 0359545  | 0.2265"  | 1"          | 3"            | 26.37       |
| 0359546  | 0.227"   | 1"          | 3"            | 26.37       |
| 0359547  | 0.2275"  | 1"          | 3"            | 26.37       |
| 0359548  | 0.2285"  | 1"          | 3"            | 26.37       |
| 0359549  | 0.229"   | 1"          | 3"            | 26.37       |
| 0359550  | 0.2295"  | 1"          | 3"            | 26.37       |
| 0359551  | 0.23"    | 1"          | 3"            | 26.37       |
| 0359552  | 0.2305"  | 1"          | 3"            | 26.37       |
| 0359553  | 0.231"   | 1"          | 3"            | 26.37       |
| 0359554  | 0.2315"  | 1"          | 3"            | 26.37       |
| 0359555  | 0.232"   | 1"          | 3"            | 26.37       |
| 0359556  | 0.2325"  | 1"          | 3"            | 26.37       |
| 0359557  | 0.233"   | 1"          | 3"            | 26.37       |
| 0359558  | 0.2335"  | 1"          | 3"            | 26.37       |
| 0359559  | 0.2345"  | 1"          | 3"            | 26.37       |
| 0359560  | 0.235"   | 1"          | 3"            | 26.37       |
| 0359561  | 0.2355"  | 1"          | 3"            | 26.37       |
| 0359562  | 0.236"   | 1"          | 3"            | 26.37       |

| Part No. | Cut Dia. | Flute Lgth. | Overall Lgth. | Price /Each |
|----------|----------|-------------|---------------|-------------|
| 0359563  | 0.2365"  | 1"          | 3"            | \$26.37     |
| 0359564  | 0.237"   | 1"          | 3"            | 26.37       |
| 0359565  | 0.2375"  | 1"          | 3"            | 26.37       |
| 0359566  | 0.2385"  | 1"          | 3"            | 26.37       |
| 0359567  | 0.239"   | 1"          | 3"            | 26.37       |
| 0359568  | 0.2395"  | 1"          | 3"            | 26.37       |
| 0359569  | 0.24"    | 1"          | 3"            | 26.37       |
| 0359570  | 0.2405"  | 1"          | 3"            | 26.37       |
| 0359571  | 0.241"   | 1"          | 3"            | 26.37       |
| 0359572  | 0.2415"  | 1"          | 3"            | 26.37       |
| 0359573  | 0.2425"  | 1"          | 3"            | 26.37       |
| 0359574  | 0.243"   | 1"          | 3"            | 26.37       |
| 0359575  | 0.2435"  | 1"          | 3"            | 26.37       |
| 0359576  | 0.244"   | 1"          | 3"            | 26.37       |
| 0359577  | 0.2445"  | 1"          | 3"            | 26.37       |
| 0359578  | 0.245"   | 1"          | 3"            | 26.37       |
| 0359579  | 0.2455"  | 1"          | 3"            | 26.37       |
| 0359580  | 0.2465"  | 1"          | 3"            | 26.37       |
| 0359581  | 0.247"   | 1"          | 3"            | 26.37       |
| 0359582  | 0.2475"  | 1"          | 3"            | 26.37       |
| 0359583  | D/P      | 1"          | 3"            | 26.37       |
| 0359585  | 0.2485"  | 1"          | 3"            | 26.37       |
| 0359586  | U/S      | 1"          | 3"            | 26.37       |
| 0359588  | D/P      | 1"          | 3"            | 26.37       |
| 0359590  | 0.2505"  | 1"          | 3"            | 26.37       |
| 0359591  | O/S      | 1"          | 3"            | 26.37       |
| 0359593  | 0.2515"  | 1"          | 3"            | 26.37       |
| 0359594  | 0.252"   | 1"          | 3"            | 26.37       |
| 0359595  | 0.2525"  | 1"          | 3"            | 28.47       |
| 0359596  | 0.253"   | 1"          | 3"            | 31.05       |
| 0359597  | 0.2535"  | 1"          | 3"            | 31.05       |
| 0359598  | 0.254"   | 1"          | 3"            | 31.05       |
| 0359599  | 0.2545"  | 1"          | 3"            | 31.05       |
| 0359600  | 0.255"   | 1"          | 3"            | 31.05       |
| 0359601  | 0.256"   | 1-1/8"      | 3-1/4"        | 34.93       |
| 0359602  | 0.2565"  | 1-1/8"      | 3-1/4"        | 34.93       |
| 0359603  | 0.2575"  | 1-1/8"      | 3-1/4"        | 35.86       |
| 0359604  | 0.258"   | 1-1/8"      | 3-1/4"        | 35.86       |
| 0359605  | 0.259"   | 1-1/8"      | 3-1/4"        | 35.86       |
| 0359606  | 0.26"    | 1-1/8"      | 3-1/4"        | 35.86       |
| 0359607  | 0.262"   | 1-1/8"      | 3-1/4"        | 35.86       |
| 0359608  | 0.263"   | 1-1/8"      | 3-1/4"        | 35.86       |
| 0359609  | 0.264"   | 1-1/8"      | 3-1/4"        | 35.86       |
| 0359610  | 0.265"   | 1-1/8"      | 3-1/4"        | 35.86       |
| 0359611  | 0.267"   | 1-1/8"      | 3-1/4"        | 36.97       |
| 0359612  | 0.268"   | 1-1/8"      | 3-1/4"        | 36.97       |
| 0359613  | 0.269"   | 1-1/8"      | 3-1/4"        | 36.97       |
| 0359614  | 0.27"    | 1-1/8"      | 3-1/4"        | 36.97       |
| 0359615  | 0.271"   | 1-1/8"      | 3-1/4"        | 36.97       |
| 0359616  | 0.273"   | 1-1/8"      | 3-1/4"        | 36.97       |
| 0359617  | 0.274"   | 1-1/8"      | 3-1/4"        | 36.97       |
| 0359618  | 0.275"   | 1-1/8"      | 3-1/4"        | 36.97       |
| 0359619  | 0.276"   | 1-1/8"      | 3-1/4"        | 36.97       |
| 0359620  | 0.278"   | 1-1/8"      | 3-1/4"        | 36.97       |
| 0359621  | 0.279"   | 1-1/8"      | 3-1/4"        | 36.97       |
| 0359622  | 0.28"    | 1-1/8"      | 3-1/4"        | 36.97       |
| 0359623  | 0.2818"  | 1-1/8"      | 3-1/4"        | 40.70       |
| 0359624  | 0.282"   | 1-1/8"      | 3-1/4"        | 40.70       |
| 0359625  | 0.283"   | 1-1/8"      | 3-1/4"        | 40.70       |
| 0359626  | 0.284"   | 1-1/8"      | 3-1/4"        | 40.70       |
| 0359627  | 0.285"   | 1-1/8"      | 3-1/4"        | 40.70       |
| 0359628  | 0.286"   | 1-1/8"      | 3-1/4"        | 40.70       |
| 0359629  | 0.287"   | 1-1/8"      | 3-1/4"        | 40.70       |
| 0359630  | 0.288"   | 1-1/8"      | 3-1/4"        | 40.70       |
| 0359631  | 0.289"   | 1-1/8"      | 3-1/4"        | 40.70       |
| 0359632  | 0.291"   | 1-1/8"      | 3-1/4"        | 44.50       |

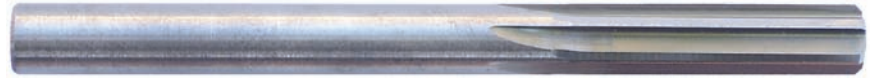
## Carbide Reamers Cont.



### Solid Carbide Reamers Cont.

#### Decimal - Chucking Reamer - Cont.

| Part No. | Cut Dia. | Flute Lgth. | Overall Lgth. | Price /Each |
|----------|----------|-------------|---------------|-------------|
| 0359633  | 0.292"   | 1-1/8"      | 3-1/4"        | \$44.50     |
| 0359634  | 0.293"   | 1-1/8"      | 3-1/4"        | 44.50       |
| 0359635  | 0.294"   | 1-1/8"      | 3-1/4"        | 44.50       |
| 0359636  | 0.296"   | 1-1/8"      | 3-1/4"        | 44.50       |
| 0359637  | 0.297"   | 1-1/8"      | 3-1/4"        | 44.50       |
| 0359638  | 0.298"   | 1-1/8"      | 3-1/4"        | 44.50       |
| 0359639  | 0.299"   | 1-1/8"      | 3-1/4"        | 44.50       |
| 0359640  | 0.3"     | 1-1/8"      | 3-1/4"        | 44.50       |
| 0359641  | 0.301"   | 1-1/8"      | 3-1/4"        | 44.50       |
| 0359642  | 0.303"   | 1-1/8"      | 3-1/4"        | 44.50       |
| 0359643  | 0.304"   | 1-1/8"      | 3-1/4"        | 44.50       |
| 0359644  | 0.305"   | 1-1/8"      | 3-1/4"        | 44.50       |
| 0359645  | 0.306"   | 1-1/8"      | 3-1/4"        | 44.50       |
| 0359646  | 0.307"   | 1-1/8"      | 3-1/4"        | 44.50       |
| 0359647  | 0.308"   | 1-1/8"      | 3-1/4"        | 44.50       |
| 0359648  | 0.309"   | 1-1/8"      | 3-1/4"        | 44.50       |
| 0359649  | 0.31"    | 1-1/8"      | 3-1/4"        | 44.50       |
| 0359650  | 0.311"   | 1-1/8"      | 3-1/4"        | 44.50       |
| 0359651  | D/P      | 1-1/8"      | 3-1/4"        | 44.50       |
| 0359653  | 0.313"   | 1-1/8"      | 3-1/4"        | 44.50       |
| 0359654  | 0.314"   | 1-1/8"      | 3-1/4"        | 44.50       |
| 0359655  | 0.1875"  | 0.375"      | 2"            | 23.12       |
| 0359656  | 0.317"   | 1-1/4"      | 3-1/2"        | 42.33       |
| 0359657  | 0.318"   | 1-1/4"      | 3-1/2"        | 42.33       |
| 0359658  | 0.319"   | 1-1/4"      | 3-1/2"        | 42.33       |
| 0359659  | 0.32"    | 1-1/4"      | 3-1/2"        | 42.33       |
| 0359660  | 0.321"   | 1-1/4"      | 3-1/2"        | 42.33       |
| 0359661  | 0.322"   | 1-1/4"      | 3-1/2"        | 42.33       |
| 0359662  | 0.324"   | 1-1/4"      | 3-1/2"        | 42.33       |
| 0359663  | 0.325"   | 1-1/4"      | 3-1/2"        | 42.33       |
| 0359664  | 0.326"   | 1-1/4"      | 3-1/2"        | 42.33       |
| 0359665  | 0.327"   | 1-1/4"      | 3-1/2"        | 42.33       |
| 0359666  | 0.328"   | 1-1/4"      | 3-1/2"        | 42.33       |
| 0359667  | 0.329"   | 1-1/4"      | 3-1/2"        | 42.33       |
| 0359668  | 0.33"    | 1-1/4"      | 3-1/2"        | 42.33       |
| 0359669  | 0.331"   | 1-1/4"      | 3-1/2"        | 42.33       |
| 0359670  | 0.333"   | 1-1/4"      | 3-1/2"        | 42.33       |
| 0359671  | 0.334"   | 1-1/4"      | 3-1/2"        | 42.33       |
| 0359672  | 0.335"   | 1-1/4"      | 3-1/2"        | 42.33       |
| 0359673  | 0.336"   | 1-1/4"      | 3-1/2"        | 42.33       |
| 0359674  | 0.337"   | 1-1/4"      | 3-1/2"        | 42.33       |
| 0359675  | 0.338"   | 1-1/4"      | 3-1/2"        | 42.33       |
| 0359676  | 0.34"    | 1-1/4"      | 3-1/2"        | 42.33       |
| 0359677  | 0.341"   | 1-1/4"      | 3-1/2"        | 42.33       |
| 0359678  | 0.342"   | 1-1/4"      | 3-1/2"        | 42.33       |
| 0359679  | 0.343"   | 1-1/4"      | 3-1/2"        | 42.33       |
| 0359680  | 0.344"   | 1-1/4"      | 3-1/2"        | 48.11       |
| 0359681  | 0.345"   | 1-1/4"      | 3-1/2"        | 48.11       |
| 0359682  | 0.346"   | 1-1/4"      | 3-1/2"        | 48.11       |
| 0359683  | 0.347"   | 1-1/4"      | 3-1/2"        | 48.11       |
| 0359684  | 0.349"   | 1-1/4"      | 3-1/2"        | 48.11       |
| 0359685  | 0.35"    | 1-1/4"      | 3-1/2"        | 48.11       |
| 0359686  | 0.351"   | 1-1/4"      | 3-1/2"        | 48.11       |
| 0359687  | 0.352"   | 1-1/4"      | 3-1/2"        | 48.11       |
| 0359688  | 0.353"   | 1-1/4"      | 3-1/2"        | 48.11       |
| 0359689  | 0.354"   | 1-1/4"      | 3-1/2"        | 48.11       |
| 0359690  | 0.355"   | 1-1/4"      | 3-1/2"        | 48.11       |
| 0359691  | 0.356"   | 1-1/4"      | 3-1/2"        | 48.11       |
| 0359692  | 0.357"   | 1-1/4"      | 3-1/2"        | 48.11       |
| 0359693  | 0.359"   | 1-1/4"      | 3-1/2"        | 48.11       |
| 0359694  | 0.36"    | 1-1/4"      | 3-1/2"        | 50.62       |
| 0359695  | 0.361"   | 1-1/4"      | 3-1/2"        | 50.62       |
| 0359696  | 0.362"   | 1-1/4"      | 3-1/2"        | 50.62       |
| 0359697  | 0.363"   | 1-1/4"      | 3-1/2"        | 50.62       |
| 0359698  | 0.364"   | 1-1/4"      | 3-1/2"        | 50.62       |
| 0359699  | 0.365"   | 1-1/4"      | 3-1/2"        | 50.62       |
| 0359700  | 0.366"   | 1-1/4"      | 3-1/2"        | 50.62       |
| 0359701  | 0.367"   | 1-1/4"      | 3-1/2"        | 50.62       |
| 0359702  | 0.369"   | 1-1/4"      | 3-1/2"        | 50.62       |
| 0359703  | 0.37"    | 1-1/4"      | 3-1/2"        | 50.62       |
| 0359704  | 0.371"   | 1-1/4"      | 3-1/2"        | 50.62       |
| 0359705  | 0.372"   | 1-1/4"      | 3-1/2"        | 50.62       |
| 0359706  | D/P      | 1-1/4"      | 3-1/2"        | 50.62       |



### Solid Carbide Reamer

- Offers superior wear resistance in reaming ferrous metals and many non-ferrous materials
- Straight flute and right hand cutting with a 45° lead cutting angle
- Micrograin carbide with 10% cobalt

4 Flutes on reamers to .2550 diameter

6 Flutes on .2559 dia. and larger

| Part No. | Cut Dia. | Flute Lgth. | Overall Lgth. | Price /Each |
|----------|----------|-------------|---------------|-------------|
| 0359708  | 0.3755"  | 1-1/4"      | 3-1/2"        | \$48.11     |
| 0359709  | O/S      | 1-1/4"      | 3-1/2"        | 48.11       |
| 0359711  | 0.3765"  | 1-1/4"      | 3-1/2"        | 48.11       |
| 0359712  | 0.378"   | 1-1/4"      | 3-1/2"        | 56.04       |
| 0359713  | 0.379"   | 1-1/4"      | 3-1/2"        | 56.04       |
| 0359714  | 0.38"    | 1-1/4"      | 3-1/2"        | 56.04       |
| 0359715  | 0.381"   | 1-1/4"      | 3-1/2"        | 56.04       |
| 0359716  | 0.382"   | 1-1/4"      | 3-1/2"        | 56.04       |
| 0359717  | 0.383"   | 1-1/4"      | 3-1/2"        | 56.04       |
| 0359718  | 0.384"   | 1-1/4"      | 3-1/2"        | 56.04       |
| 0359719  | 0.385"   | 1-1/4"      | 3-1/2"        | 56.04       |
| 0359720  | 0.387"   | 1-1/4"      | 3-1/2"        | 56.61       |
| 0359721  | 0.388"   | 1-1/4"      | 3-1/2"        | 56.61       |
| 0359722  | 0.389"   | 1-1/4"      | 3-1/2"        | 56.61       |
| 0359723  | 0.39"    | 1-1/4"      | 3-1/2"        | 56.61       |
| 0359724  | 0.391"   | 1-1/4"      | 3-1/2"        | 59.51       |
| 0359725  | 0.392"   | 1-1/4"      | 3-1/2"        | 59.51       |
| 0359726  | 0.393"   | 1-1/4"      | 3-1/2"        | 59.51       |
| 0359727  | 0.394"   | 1-1/4"      | 3-1/2"        | 59.51       |
| 0359728  | 0.395"   | 1-1/4"      | 3-1/2"        | 59.51       |
| 0359729  | 0.396"   | 1-1/4"      | 3-1/2"        | 59.51       |
| 0359730  | 0.398"   | 1-1/4"      | 3-1/2"        | 60.75       |
| 0359731  | 0.399"   | 1-1/4"      | 3-1/2"        | 60.75       |
| 0359732  | 0.4"     | 1-1/4"      | 3-1/2"        | 60.75       |
| 0359733  | 0.401"   | 1-1/4"      | 3-1/2"        | 60.75       |
| 0359734  | 0.402"   | 1-1/4"      | 3-1/2"        | 60.75       |
| 0359735  | 0.403"   | 1-1/4"      | 3-1/2"        | 60.75       |
| 0359736  | 0.405"   | 1-1/4"      | 3-1/2"        | 60.75       |
| 0359737  | 0.406"   | 1-1/4"      | 3-1/2"        | 60.75       |
| 0359738  | 0.407"   | 1-1/4"      | 3-1/2"        | 60.75       |
| 0359739  | 0.408"   | 1-1/4"      | 3-1/2"        | 60.75       |
| 0359740  | 0.409"   | 1-1/4"      | 3-1/2"        | 60.75       |
| 0359741  | 0.41"    | 1-1/4"      | 3-1/2"        | 60.75       |
| 0359742  | 0.411"   | 1-1/4"      | 3-1/2"        | 60.75       |
| 0359743  | 0.412"   | 1-1/4"      | 3-1/2"        | 60.75       |
| 0359744  | 0.414"   | 1-1/4"      | 3-1/2"        | 60.75       |
| 0359745  | 0.415"   | 1-1/4"      | 3-1/2"        | 60.75       |
| 0359746  | 0.416"   | 1-1/4"      | 3-1/2"        | 60.75       |
| 0359747  | 0.417"   | 1-3/8"      | 4"            | 66.91       |
| 0359748  | 0.418"   | 1-3/8"      | 4"            | 66.91       |
| 0359749  | 0.419"   | 1-3/8"      | 4"            | 66.91       |
| 0359750  | 0.42"    | 1-3/8"      | 4"            | 66.91       |
| 0359751  | 0.421"   | 1-3/8"      | 4"            | 66.91       |
| 0359752  | 0.423"   | 1-3/8"      | 4"            | 66.91       |
| 0359753  | 0.424"   | 1-3/8"      | 4"            | 66.91       |
| 0359754  | 0.425"   | 1-3/8"      | 4"            | 66.91       |
| 0359755  | 0.426"   | 1-3/8"      | 4"            | 66.91       |
| 0359756  | 0.427"   | 1-3/8"      | 4"            | 66.91       |
| 0359757  | 0.428"   | 1-3/8"      | 4"            | 66.91       |
| 0359758  | 0.429"   | 1-3/8"      | 4"            | 65.51       |
| 0359759  | 0.43"    | 1-3/8"      | 4"            | 65.51       |
| 0359760  | 0.431"   | 1-3/8"      | 4"            | 65.51       |
| 0359761  | 0.432"   | 1-3/8"      | 4"            | 65.51       |
| 0359762  | 0.434"   | 1-3/8"      | 4"            | 65.51       |
| 0359763  | 0.435"   | 1-3/8"      | 4"            | 65.51       |
| 0359764  | 0.436"   | 1-3/8"      | 4"            | 65.51       |
| 0359765  | D/P      | 1-3/8"      | 4"            | 65.51       |
| 0359767  | 0.438"   | 1-3/8"      | 4"            | 65.51       |
| 0359768  | 0.439"   | 1-3/8"      | 4"            | 65.51       |
| 0359769  | 0.44"    | 1-3/8"      | 4"            | 65.51       |
| 0359770  | 0.441"   | 1-3/8"      | 4"            | 65.51       |
| 0359771  | 0.442"   | 1-3/8"      | 4"            | 65.51       |
| 0359772  | 0.443"   | 1-3/8"      | 4"            | 65.51       |
| 0359773  | 0.444"   | 1-3/8"      | 4"            | 65.51       |
| 0359774  | 0.445"   | 1-3/8"      | 4"            | 65.51       |
| 0359775  | 0.446"   | 1-3/8"      | 4"            | 65.51       |

| Part No. | Cut Dia. | Flute Lgth. | Overall Lgth. | Price /Each |
|----------|----------|-------------|---------------|-------------|
| 0359776  | 0.447"   | 1-3/8"      | 4"            | \$65.51     |
| 0359777  | 0.448"   | 1-3/8"      | 4"            | 65.51       |
| 0359778  | 0.449"   | 1-3/8"      | 4"            | 65.51       |
| 0359779  | 0.45"    | 1-3/8"      | 4"            | 65.51       |
| 0359780  | 0.451"   | 1-3/8"      | 4"            | 65.51       |
| 0359781  | 0.452"   | 1-3/8"      | 4"            | 65.51       |
| 0359782  | 0.453"   | 1-3/8"      | 4"            | 71.42       |
| 0359783  | 0.454"   | 1-3/8"      | 4"            | 71.42       |
| 0359784  | 0.455"   | 1-3/8"      | 4"            | 71.42       |
| 0359785  | 0.456"   | 1-3/8"      | 4"            | 71.42       |
| 0359786  | 0.457"   | 1-3/8"      | 4"            | 71.42       |
| 0359787  | 0.458"   | 1-3/8"      | 4"            | 71.42       |
| 0359788  | 0.459"   | 1-3/8"      | 4"            | 71.42       |
| 0359789  | 0.46"    | 1-3/8"      | 4"            | 71.42       |
| 0359790  | 0.461"   | 1-3/8"      | 4"            | 71.42       |
| 0359791  | 0.462"   | 1-3/8"      | 4"            | 71.42       |
| 0359792  | 0.463"   | 1-3/8"      | 4"            | 71.42       |
| 0359793  | 0.464"   | 1-3/8"      | 4"            | 71.42       |
| 0359794  | 0.465"   | 1-3/8"      | 4"            | 71.42       |
| 0359795  | 0.466"   | 1-3/8"      | 4"            | 71.42       |
| 0359796  | 0.467"   | 1-3/8"      | 4"            | 71.42       |
| 0359797  | 0.468"   | 1-3/8"      | 4"            | 71.42       |
| 0359798  | 0.469"   | 1-3/8"      | 4"            | 71.42       |
| 0359799  | 0.47"    | 1-3/8"      | 4"            | 71.42       |
| 0359800  | 0.471"   | 1-3/8"      | 4"            | 71.42       |
| 0359801  | 0.472"   | 1-3/8"      | 4"            | 71.42       |
| 0359802  | 0.473"   | 1-3/8"      | 4"            | 71.42       |
| 0359803  | 0.474"   | 1-3/8"      | 4"            | 71.42       |
| 0359804  | 0.475"   | 1-3/8"      | 4"            | 71.42       |
| 0359805  | 0.476"   | 1-3/8"      | 4"            | 71.42       |
| 0359806  | 0.477"   | 1-3/8"      | 4"            | 71.42       |
| 0359807  | 0.478"   | 1-3/8"      | 4"            | 71.42       |
| 0359808  | 0.479"   | 1-1/2"      | 4"            | 75.40       |
| 0359809  | 0.48"    | 1-1/2"      | 4"            | 75.40       |
| 0359810  | 0.4805"  | 1-1/2"      | 4"            | 75.40       |
| 0359811  | 0.481"   | 1-1/2"      | 4"            | 75.40       |
| 0359812  | 0.482"   | 1-1/2"      | 4"            | 75.40       |
| 0359813  | 0.483"   | 1-1/2"      | 4"            | 75.40       |
| 0359814  | 0.484"   | 1-1/2"      | 4"            | 75.40       |
| 0359815  | 0.485"   | 1-1/2"      | 4"            | 75.40       |
| 0359816  | 0.486"   | 1-1/2"      | 4"            | 75.40       |
| 0359817  | 0.487"   | 1-1/2"      | 4"            | 75.40       |
| 0359818  | 0.488"   | 1-1/2"      | 4"            | 75.40       |
| 0359819  | 0.489"   | 1-1/2"      | 4"            | 75.40       |
| 0359820  | 0.49"    | 1-1/2"      | 4"            | 75.40       |
| 0359821  | 0.491"   | 1-1/2"      | 4"            | 75.40       |
| 0359822  | 0.493"   | 1-1/2"      | 4"            | 75.40       |
| 0359823  | 0.494"   | 1-1/2"      | 4"            | 75.40       |
| 0359824  | 0.495"   | 1-1/2"      | 4"            | 75.40       |
| 0359825  | 0.496"   | 1-1/2"      | 4"            | 75.40       |
| 0359826  | 0.497"   | 1-1/2"      | 4"            | 75.40       |
| 0359827  | D/P      | 1-1/2"      | 4"            | 75.40       |
| 0359829  | U/S      | 1-1/2"      | 4"            | 75.40       |
| 0359831  | 0.5005"  | 1-1/2"      | 4"            | 74.25       |
| 0359832  | O/S      | 1-1/2"      | 4"            | 74.25       |
| 0359834  | 0.5015"  | 1-1/2"      | 4"            | 74.25       |
| 0359835  | 0.502"   | 1-1/2"      | 4"            | 74.25       |
| 0359836  | 0.503"   | 1-1/2"      | 4"            | 74.25       |
| 0359837  | 0.504"   | 1-1/2"      | 4"            | 74.25       |
| 0359838  | 0.505"   | 1-1/2"      | 4"            | 74.25       |

# COUNTERBORES & ANNULAR CUTTERS

## Counterbores



### KOUNTERBORE

#### Precision Cap Screw Counterbores

- Made from M2 HSS
- Micro-smooth CNC precision ground for precision smooth counterboring.
- M-35 Cobalt: HSS, 6% Tungsten, 5% Moly, 5% Cobalt - long tool life in all materials.
- High performance cutting action due to secondary relief behind cutting edge margin.
- Optimized helix for chip evacuation - chips flow away from cut without wrapping around tool.
- Extremely free positive cutting action - minimal power needed - can be used on all types of machines
- Simplified tool choice designations - easy to determine exact tool needed for application tolerance
- Choice of Nominal size for close fit assembly tolerance or +1/64" Oversize or +1/32" Oversize



| Part No. | Size          | Screw Size | Pilot Dia. | Dia.  | OAL | Shank Dia. | UOM | Price /Each |
|----------|---------------|------------|------------|-------|-----|------------|-----|-------------|
| 7014621  | #4 Nominal    | #4         | .112       | .186  | 3   | 5/32       |     | \$28.50     |
| 7014622  | #4+1/64 O/S   | #4         | .127       | .202  | 3   | 5/32       |     | 28.50       |
| 7014623  | #4+1/32 O/S   | #4         | .143       | .217  | 3   | 5/32       |     | 28.50       |
| 7014624  | #5 Nominal    | #5         | .125       | .205  | 3   | 3/16       |     | 30.40       |
| 7014625  | #5+1/64 O/S   | #5         | .140       | .221  | 3   | 3/16       |     | 30.40       |
| 7014626  | #5+1/32 O/S   | #5         | .156       | .237  | 3   | 3/16       |     | 30.40       |
| 7014627  | #6 Nominal    | #6         | .138       | .228  | 3   | 7/32       |     | 33.53       |
| 7014628  | #6+1/64 O/S   | #6         | .153       | .244  | 3   | 7/32       |     | 33.53       |
| 7014629  | #6+1/32 O/S   | #6         | .169       | .260  | 3   | 7/32       |     | 33.53       |
| 7014630  | #8 Nominal    | #8         | .164       | .272  | 3   | 1/4        |     | 34.40       |
| 7014631  | #8+1/64 O/S   | #8         | .179       | .288  | 3   | 1/4        |     | 34.40       |
| 7014632  | #8+1/32 O/S   | #8         | .195       | .304  | 3   | 1/4        |     | 34.40       |
| 7014633  | #10 Nominal   | #10        | .19        | .314  | 4.5 | 9/32       |     | 36.20       |
| 7014634  | #10+1/64 O/S  | #10        | .205       | .330  | 4.5 | 9/32       |     | 36.20       |
| 7014635  | #10+1/32 O/S  | #10        | .221       | .346  | 4.5 | 9/32       |     | 36.20       |
| 7014636  | 1/4 Nominal   | 1/4        | .250       | .382  | 4.5 | 5/16       |     | 36.60       |
| 7014637  | 1/4+1/64 O/S  | 1/4        | .265       | .398  | 4.5 | 5/16       |     | 36.60       |
| 7014638  | 1/4+1/32 O/S  | 1/4        | .281       | .414  | 4.5 | 5/16       |     | 36.60       |
| 7014639  | 5/16 Nominal  | 5/16       | .312       | .475  | 4.5 | 3/8        |     | 38.60       |
| 7014640  | 5/16+1/64 O/S | 5/16       | .328       | .491  | 4.5 | 3/8        |     | 38.60       |
| 7014641  | 5/16+1/32 O/S | 5/16       | .343       | .507  | 4.5 | 3/8        |     | 38.60       |
| 7014642  | 3/8 Nominal   | 3/8        | .375       | .572  | 5   | 1/2        |     | 43.73       |
| 7014643  | 3/8+1/64 O/S  | 3/8        | .390       | .588  | 5   | 1/2        |     | 43.73       |
| 7014644  | 3/8+1/32 O/S  | 3/8        | .406       | .604  | 5   | 1/2        |     | 43.73       |
| 7014645  | 7/16 Nominal  | 7/16       | .437       | .663  | 5   | 1/2        |     | 52.27       |
| 7014646  | 7/16+1/64 O/S | 7/16       | .452       | .679  | 5   | 1/2        |     | 52.27       |
| 7014647  | 7/16+1/32 O/S | 7/16       | .468       | .695  | 5   | 1/2        |     | 52.27       |
| 7014648  | 1/2 Nominal   | 1/2        | .5         | .757  | 6   | 1/2        |     | 57.80       |
| 7014649  | 1/2+1/64 O/S  | 1/2        | .515       | .773  | 6   | 1/2        |     | 57.80       |
| 7014650  | 1/2+1/32 O/S  | 1/2        | .531       | .789  | 6   | 1/2        |     | 57.80       |
| 7014651  | 5/8 Nominal   | 5/8        | .625       | .945  | 6   | 5/8        |     | 85.60       |
| 7014652  | 5/8+1/64 O/S  | 5/8        | .641       | .961  | 6   | 5/8        |     | 85.60       |
| 7014653  | 5/8+1/32 O/S  | 5/8        | .656       | .977  | 6   | 5/8        |     | 85.60       |
| 7014654  | 3/4 Nominal   | 3/4        | .766       | 1.187 | 7   | 3/4        |     | 122.93      |
| 7014655  | 3/4+1/32 O/S  | 3/4        | .781       | 1.203 | 7   | 3/4        |     | 122.93      |
| 7014656  | 7/8 Nominal   | 7/8        | .891       | 1.375 | 7   | 7/8        |     | 187.50      |
| 7014657  | 7/8+1/32 O/S  | 7/8        | .906       | 1.391 | 7   | 7/8        |     | 187.50      |
| 7014658  | 1 Nominal     | 1          | 1.016      | 1.562 | 7   | 1          |     | 258.27      |
| 7014659  | 1+1/32 O/S    | 1          | 1.032      | 1.588 | 7   | 1          |     | 258.27      |



#### Cap Screw Counterbores Solid Pilot



| Part No. | Overall Lgth. | Shank Dia. | Shank Cut Dia. | Pilot Dia. | Screw Size | Price /Each |
|----------|---------------|------------|----------------|------------|------------|-------------|
| 7013316  | 3.500"        | 0.3750"    | 0.242"         | 0.1360"    | #6         | \$21.43     |
| 7013317  | 3.500"        | 0.3750"    | 0.242"         | 0.1500"    | #6         | 21.43       |
| 7013318  | 3.500"        | 0.3750"    | 0.290"         | 0.1620"    | #8         | 25.45       |
| 7013319  | 3.500"        | 0.3750"    | 0.290"         | 0.1780"    | #8         | 25.45       |
| 7013320  | 3.500"        | 0.3750"    | 0.332"         | 0.1880"    | #10        | 26.19       |
| 7013321  | 3.500"        | 0.3750"    | 0.332"         | 0.2040"    | #10        | 26.19       |
| 7013322  | 5.000"        | 0.3750"    | 0.406"         | 0.2500"    | 1/4"       | 29.00       |
| 7013323  | 5.000"        | 0.3750"    | 0.406"         | 0.2650"    | 1/4"       | 29.00       |
| 7013324  | 5.000"        | 0.3750"    | 0.406"         | 0.2810"    | 1/4"       | 29.00       |
| 7013325  | 5.000"        | 0.3750"    | 0.500"         | 0.3120"    | 5/16"      | 32.59       |
| 7013326  | 5.000"        | 0.3750"    | 0.500"         | 0.3280"    | 5/16"      | 32.59       |
| 7013327  | 5.000"        | 0.3750"    | 0.500"         | 0.3430"    | 5/16"      | 32.59       |
| 7013328  | 6.000"        | 0.5000"    | 0.593"         | 0.3750"    | 3/8"       | 36.55       |
| 7013329  | 6.000"        | 0.5000"    | 0.593"         | 0.3900"    | 3/8"       | 36.55       |
| 7013330  | 6.000"        | 0.5000"    | 0.593"         | 0.4060"    | 3/8"       | 36.55       |
| 7013331  | 6.000"        | 0.5000"    | 0.687"         | 0.4370"    | 7/16"      | 41.21       |
| 7013332  | 6.000"        | 0.5000"    | 0.687"         | 0.4530"    | 7/16"      | 41.21       |
| 7013333  | 6.000"        | 0.5000"    | 0.687"         | 0.4680"    | 7/16"      | 41.21       |
| 7013334  | 7.000"        | 0.7500"    | 0.781"         | 0.5000"    | 1/2"       | 46.40       |
| 7013335  | 7.000"        | 0.7500"    | 0.781"         | 0.5150"    | 1/2"       | 46.40       |
| 7013336  | 7.000"        | 0.7500"    | 0.781"         | 0.5310"    | 1/2"       | 46.40       |
| 7013337  | 7.000"        | 0.7500"    | 0.875"         | 0.5620"    | 9/16"      | 61.85       |
| 7013340  | 7.000"        | 0.7500"    | 1.000"         | 0.6250"    | 5/8"       | 80.85       |
| 7013341  | 7.000"        | 0.7500"    | 1.000"         | 0.6400"    | 5/8"       | 80.85       |
| 7013342  | 7.000"        | 0.7500"    | 1.000"         | 0.6560"    | 5/8"       | 80.85       |
| 7013343  | 7.500"        | 0.7500"    | 1.187"         | 0.7500"    | 3/4"       | 99.89       |
| 7013344  | 7.500"        | 0.7500"    | 1.187"         | 0.7650"    | 3/4"       | 99.89       |
| 7013345  | 7.500"        | 0.7500"    | 1.187"         | 0.7810"    | 3/4"       | 99.89       |

#### Metric Set

Cut Diameter 6 mm - 18 mm

| Part No. | OAL (mm)     | Shank Dia. (mm) | Pilot Dia. (mm) | Screw Size (mm) | Price /Each |
|----------|--------------|-----------------|-----------------|-----------------|-------------|
| 7013357  | 88.9 - 152.4 | 9.525 - 12.7    | 3.4 - 11.0      | 3 - 10          | \$281.20    |

#### Counterbores Interchangeable Pilot

| Part No. | Overall Cut Dia. | Shank Lgth. | Shank Dia. | Pilot Hole Dia. | Flutes | Price /Each |
|----------|------------------|-------------|------------|-----------------|--------|-------------|
| 7013358  | 3/16"            | 3"          | 15/64"     | 2-3/8"          | 3/32"  | 3 \$34.50   |
| 7013359  | 7/32"            | 3"          | 15/64"     | 2-3/8"          | 3/32"  | 3 34.50     |
| 7013360  | 1/4"             | 3-13/16"    | 15/64"     | 3-1/16"         | 3/32"  | 3 37.51     |
| 7013361  | 9/32"            | 3-13/16"    | 17/64"     | 3-1/16"         | 3/32"  | 3 37.51     |
| 7013362  | 5/16"            | 3-13/16"    | 19/64"     | 3-1/16"         | 3/32"  | 3 38.62     |
| 7013363  | 11/32"           | 3-13/16"    | 5/16"      | 3-1/16"         | 3/32"  | 3 39.42     |
| 7013364  | 3/8"             | 4-1/16"     | 5/16"      | 3-1/16"         | 5/32"  | 3 39.42     |
| 7013365  | 13/32"           | 4-1/16"     | 3/8"       | 3-1/16"         | 5/32"  | 3 42.27     |
| 7013366  | 7/16"            | 4-1/16"     | 3/8"       | 3-1/16"         | 5/32"  | 3 42.27     |
| 7013367  | 15/32"           | 4-5/16"     | 7/16"      | 3-1/16"         | 3/16"  | 3 43.91     |
| 7013368  | 1/2"             | 4-5/16"     | 7/16"      | 3-1/16"         | 3/16"  | 3 43.91     |
| 7013370  | 9/16"            | 4-5/16"     | 1/2"       | 3-1/16"         | 3/16"  | 3 45.81     |
| 7013371  | 19/32"           | 5-1/8"      | 1/2"       | 3-7/8"          | 3/16"  | 3 48.67     |
| 7013372  | 5/8"             | 5-1/8"      | 1/2"       | 3-7/8"          | 3/16"  | 3 48.67     |
| 7013376  | 3/4"             | 5-3/8"      | 1/2"       | 3-7/8"          | 1/4"   | 3 55.50     |
| 7013378  | 13/16"           | 5-3/8"      | 5/8"       | 3-7/8"          | 1/4"   | 3 58.41     |
| 7013380  | 7/8"             | 5-3/8"      | 3/4"       | 3-7/8"          | 1/4"   | 3 61.00     |
| 7013382  | 15/16"           | 6-1/8"      | 3/4"       | 4-5/8"          | 1/4"   | 3 64.23     |
| 7013384  | 1"               | 6-3/8"      | 3/4"       | 4-5/8"          | 5/16"  | 3 76.03     |

## Pilots for Counterbores

### Counterbore Pilots



| Part No. | Shank Dia. | Pilot Dia. | Price /Each |
|----------|------------|------------|-------------|
| 7013385  | 3/32"      | 1/8"       | \$8.84      |
| 7013386  | 3/32"      | 5/32"      | 8.84        |
| 7013387  | 3/32"      | 3/16"      | 8.84        |
| 7013391  | 5/32"      | 3/16"      | 9.58        |
| 7013392  | 5/32"      | 7/32"      | 9.58        |
| 7013393  | 5/32"      | 1/4"       | 9.58        |
| 7013394  | 5/32"      | 9/32"      | 9.58        |
| 7013395  | 5/32"      | 5/16"      | 9.58        |
| 7013397  | 3/16"      | 1/4"       | 10.26       |
| 7013398  | 3/16"      | 5/16"      | 10.26       |
| 7013399  | 3/16"      | 3/8"       | 10.26       |
| 7013400  | 3/16"      | 7/16"      | 10.26       |
| 7013401  | 3/16"      | 1/2"       | 10.26       |
| 7013403  | 3/16"      | 5/8"       | 15.35       |
| 7013404  | 1/4"       | 5/16"      | 10.95       |
| 7013405  | 1/4"       | 3/8"       | 10.95       |
| 7013406  | 1/4"       | 7/16"      | 10.95       |
| 7013407  | 1/4"       | 1/2"       | 12.81       |
| 7013408  | 1/4"       | 9/16"      | 13.91       |
| 7013409  | 1/4"       | 5/8"       | 16.14       |
| 7013415  | 5/16"      | 3/8"       | 11.74       |
| 7013419  | 5/16"      | 9/16"      | 18.25       |
| 7013421  | 5/16"      | 11/16"     | 20.47       |
| 7013422  | 5/16"      | 3/4"       | 24.08       |
| 7013424  | 5/16"      | 7/8"       | 29.10       |
| 7013427  | 3/8"       | 1/2"       | 13.13       |

## Annular Cutters



### Annular Cutters 1" Depth of Cut



- Annular Cutters reduce time and power requirements by cutting larger diameter holes by using the multiple teeth to cut only the outer diameter of the hole and producing a solid slug that is then ejected from the cutter. The power requirements are a fraction of those needed when using a twist drill or indexable tooling and the process yields a reamed quality hole.
- Fastenal Premium Annular Cutters are general purpose, fully ground, high speed steel cutters.
- Fastenal Premium M35 Cobalt Annular Cutters are manufactured using fully ground cobalt to increase their cutting life and allow the user to cut harder materials. The unique geometry of the cutter provides faster feed, less friction, and a smooth hole finish.

| Size  | Fastenal Premium High Speed Steel |             | Fastenal Premium M35 Cobalt |             |
|-------|-----------------------------------|-------------|-----------------------------|-------------|
|       | Part No.                          | Price /Each | Part No.                    | Price /Each |
| 7/16  |                                   |             | 302701                      | \$54.05     |
| 1/2   | 0308339                           | \$24.23     | 302702                      | \$54.07     |
| 9/16  | 0308340                           | 27.03       | 302703                      | 65.49       |
| 3/8   |                                   |             | 302704                      | 59.48       |
| 5/8   | 0308341                           | 28.11       | 302705                      | 60.91       |
| 11/16 | 0308342                           | 30.21       | 302706                      | 66.37       |
| 3/4   | 0308343                           | 30.95       | 302707                      | 67.61       |
| 13/16 | 0308344                           | 34.46       | 302708                      | 71.78       |
| 7/8   | 0308345                           | 35.81       | 302709                      | 75.83       |
| 15/16 | 0308346                           | 38.68       | 302710                      | 81.22       |
| 1     | 0308347                           | 40.06       | 302711                      | 86.02       |

## Annular Cutters Cont.

# FASTENAL

### Annular Cutters 1" Depth of Cut

| Size    | Fastenal Premium High Speed Steel |             | Fastenal Premium M35 Cobalt |             |
|---------|-----------------------------------|-------------|-----------------------------|-------------|
|         | Part No.                          | Price /Each | Part No.                    | Price /Each |
| 1-1/16  | 0308348                           | \$41.78     | 302712                      | \$95.52     |
| 1-1/8   | 0308349                           | 45.66       | 302713                      | 98.78       |
| 1-3/16  | 0308350                           | 47.01       | 302714                      | 100.91      |
| 1-1/4   | 0308351                           | 63.25       | 302715                      | 121.78      |
| 1-5/16  | 0308352                           | 66.05       | 302716                      | 150.66      |
| 1-3/8   | 0308353                           | 85.69       | 302717                      | 161.82      |
| 1-7/16  | 0308354                           | 94.16       | 302718                      | 167.45      |
| 1-1/2   | 0308355                           | 95.51       | 302719                      | 170.25      |
| 1-9/16  | 0308356                           | 102.60      | 302720                      | 178.59      |
| 1-5/8   | 0308357                           | 105.40      | 302721                      | 183.55      |
| 1-11/16 | 0308358                           | 113.84      | 302722                      | 195.21      |
| 1-3/4   | 0308359                           | 120.86      | 302723                      | 206.48      |
| 1-13/16 | 0308360                           | 133.52      | 302724                      | 226.75      |
| 1-7/8   | 0308361                           | 140.50      | 302725                      | 241.35      |
| 1-15/16 | 0308362                           | 146.10      | 302726                      | 251.04      |
| 2       | 0308363                           | 154.58      | 302727                      | 260.28      |
| 2-1/16  |                                   |             | 302728                      | 298.56      |
| 2-1/8   |                                   |             | 302729                      | 318.52      |
| 2-3/16  |                                   |             | 302730                      | 340.71      |
| 2-1/4   |                                   |             | 302731                      | 358.32      |
| 2-5/16  |                                   |             | 302732                      | 369.69      |
| 2-3/8   |                                   |             | 302733                      | 397.60      |
| 2-7/16  |                                   |             | 302734                      | 423.18      |
| 2-1/2   |                                   |             | 302735                      | 429.47      |
| 2-9/16  |                                   |             | 302736                      | 435.21      |
| 2-5/8   |                                   |             | 302737                      | 605.33      |
| 2-11/16 |                                   |             | 302738                      | 622.99      |
| 2-3/4   |                                   |             | 302739                      | 653.62      |
| 2-13/16 |                                   |             | 302740                      | 662.39      |
| 2-7/8   |                                   |             | 302741                      | 671.26      |
| 2-15/16 |                                   |             | 302742                      | 688.12      |
| 3       |                                   |             | 302743                      | 713.94      |
| 3-1/16  |                                   |             | 302744                      | 716.95      |
| 3-1/8   |                                   |             | 302745                      | 725.29      |
| 3-3/16  |                                   |             | 302746                      | 738.97      |
| 3-1/4   |                                   |             | 302747                      | 762.34      |
| 3-5/16  |                                   |             | 302748                      | 789.29      |
| 3-3/8   |                                   |             | 302749                      | 796.41      |
| 3-7/16  |                                   |             | 302750                      | 800.80      |
| 3-1/2   |                                   |             | 302751                      | 818.70      |
| 3-9/16  |                                   |             | 302752                      | 838.54      |
| 3-5/8   |                                   |             | 302753                      | 847.71      |
| 3-11/16 |                                   |             | 302754                      | 861.92      |
| 3-3/4   |                                   |             | 302755                      | 874.51      |
| 3-13/16 |                                   |             | 302756                      | 890.37      |
| 3-7/8   |                                   |             | 302757                      | 913.07      |
| 3-15/16 |                                   |             | 302758                      | 924.41      |
| 4       |                                   |             | 302759                      | 938.65      |

### Pilot Pins



| Part No. | Brand    | Size Range           | Price /Each |
|----------|----------|----------------------|-------------|
| 303007   | Fastenal | For 1" Cutters       | \$13.55     |
| 303008   | Fastenal | For 7/16"x1" Cutters | 14.93       |
| 303009   | Fastenal | For 2" Cutters       | 21.89       |
| 303010   | Fastenal | For 7/16"x2" Cutters | 10.21       |
| 303011   | Fastenal | For 3" Cutters       | 26.50       |

### Annular Cutters 2" Depth of Cut

| Size    | Fastenal Premium High Speed Steel |             | Fastenal Premium M35 Cobalt |             |
|---------|-----------------------------------|-------------|-----------------------------|-------------|
|         | Part No.                          | Price /Each | Part No.                    | Price /Each |
| 7/16    |                                   |             | 302760                      | \$73.15     |
| 1/2     |                                   |             | 302761                      | 76.54       |
| 9/16    | 0308365                           | \$42.90     | 302762                      | 79.94       |
| 5/8     | 0308366                           | 46.37       | 302763                      | 83.31       |
| 11/16   | 0308367                           | 51.30       | 302764                      | 89.41       |
| 3/4     | 0308368                           | 53.43       | 302765                      | 95.51       |
| 13/16   | 0308369                           | 59.03       | 302766                      | 101.59      |
| 7/8     | 0308370                           | 60.41       | 302767                      | 108.39      |
| 15/16   | 0308371                           | 63.92       | 302768                      | 115.17      |
| 1       | 0308372                           | 66.15       | 302769                      | 124.64      |
| 1-1/16  | 0308373                           | 70.27       | 302770                      | 134.17      |
| 1-1/8   | 0308374                           | 77.32       | 302771                      | 143.68      |
| 1-3/16  | 0308375                           | 80.12       | 302772                      | 153.18      |
| 1-1/4   | 0308376                           | 91.36       | 302773                      | 166.72      |
| 1-5/16  | 0308377                           | 94.16       | 302774                      | 187.05      |
| 1-3/8   | 0308378                           | 106.04      | 302775                      | 202.31      |
| 1-7/16  | 0308379                           | 111.68      | 302776                      | 217.74      |
| 1-1/2   | 0308380                           | 113.84      | 302777                      | 233.06      |
| 1-9/16  | 0308381                           | 122.28      | 302778                      | 248.47      |
| 1-5/8   | 0308382                           | 127.88      | 302779                      | 263.76      |
| 1-11/16 | 0308383                           | 134.93      | 302780                      | 279.07      |
| 1-3/4   | 0308384                           | 140.50      | 302781                      | 294.49      |
| 1-13/16 | 0308385                           | 151.77      | 302782                      | 313.93      |
| 1-7/8   | 0308386                           | 163.01      | 302783                      | 334.87      |
| 1-15/16 | 0308387                           | 165.81      | 302784                      | 355.81      |
| 2       | 0308388                           | 171.42      | 302785                      | 376.73      |
| 2-1/16  |                                   |             | 302786                      | 405.40      |
| 2-1/8   |                                   |             | 302787                      | 426.71      |
| 2-3/16  |                                   |             | 302788                      | 448.07      |
| 2-1/4   |                                   |             | 302789                      | 476.52      |
| 2-5/16  |                                   |             | 302790                      | 504.96      |
| 2-3/8   |                                   |             | 302791                      | 526.30      |
| 2-7/16  |                                   |             | 302792                      | 540.52      |
| 2-1/2   |                                   |             | 302793                      | 554.74      |
| 2-9/16  |                                   |             | 302794                      | 568.97      |
| 2-5/8   |                                   |             | 302795                      | 583.20      |
| 2-11/16 |                                   |             | 302796                      | 597.41      |
| 2-3/4   |                                   |             | 302797                      | 611.65      |
| 2-13/16 |                                   |             | 302798                      | 625.87      |
| 2-7/8   |                                   |             | 302799                      | 640.08      |
| 2-15/16 |                                   |             | 302800                      | 654.32      |
| 3       |                                   |             | 302801                      | 668.54      |
| 3-1/16  |                                   |             | 302802                      | 689.87      |
| 3-1/8   |                                   |             | 302803                      | 711.20      |
| 3-3/16  |                                   |             | 302804                      | 732.53      |
| 3-1/4   |                                   |             | 302805                      | 753.87      |
| 3-5/16  |                                   |             | 302806                      | 775.21      |
| 3-3/8   |                                   |             | 302807                      | 796.55      |
| 3-7/16  |                                   |             | 302808                      | 817.89      |
| 3-1/2   |                                   |             | 302809                      | 839.20      |
| 3-9/16  |                                   |             | 302810                      | 860.57      |
| 3-5/8   |                                   |             | 302811                      | 881.91      |
| 3-11/16 |                                   |             | 302812                      | 903.24      |
| 3-3/4   |                                   |             | 302813                      | 924.56      |
| 3-13/16 |                                   |             | 302814                      | 8613.12     |
| 3-7/8   |                                   |             | 302815                      | 953.03      |
| 3-15/16 |                                   |             | 302816                      | 967.22      |
| 4       |                                   |             | 302817                      | 988.57      |



### Rotoloc™ and Rotoloc Plus™

- Made from M42 and M2 high speed steel
- Quick shank mounting feature for changeout of cutters without using tools



| Part No.   | Size   | Price /Each |
|--|--------|-------------|
| <b>3/4" Depth - Stack Cut - M42</b>              |        |             |
| 0342917  | 1/2    | \$57.02     |
| 0342918  | 9/16   | 61.02       |
| 0342919  | 5/8    | 63.61       |
| 0342920  | 11/16  | 65.75       |
| 0342921  | 3/4    | 68.63       |
| 0342922  | 13/16  | 70.71       |
| 0342923  | 7/8    | 77.35       |
| 0342924  | 15/16  | 79.39       |
| 0342925  | 1      | 84.48       |
| 0342926  | 1-1/16 | 86.42       |
| <b>Rotoloc Plus™ - 1" Depth - Non-Stack - M2</b> |        |             |
| 0342927  | 1/2    | \$47.21     |
| 0342928  | 9/16   | 53.93       |
| 0342929  | 5/8    | 56.44       |
| 0342930  | 11/16  | 58.74       |
| 0342931  | 3/4    | 61.76       |
| 0342932  | 13/16  | 66.19       |
| 0342933  | 7/8    | 70.92       |
| 0342934  | 15/16  | 75.65       |
| 0342935  | 1      | 81.05       |
| 0342936  | 1-1/16 | 83.33       |
| 0342937  | 1-1/8  | 96.01       |
| 0342938  | 1-3/16 | 99.96       |
| 0342939  | 1-1/4  | 103.79      |
| 0342940  | 1-5/16 | 109.26      |
| 0342941  | 1-3/8  | 115.03      |

### Annular Cutter Kits



| Part No. | Description  | Price /Each |
|----------|--|-------------|
| 0342664  | 1" Kit Contains Pilot and Five Cutters: 9/16, 11/16, 13/16, 15/16, and 1/16" | \$219.15    |
| 0342665  | 2" Kit Contains Pilot and Five Cutters: 9/16, 11/16, 13/16, 15/16, and 1/16" | 349.95      |

### 3/4" Rotoloc Kit

3/4" kit contains 2 pilots and 10 cutters: 1/2", 9/16", 5/8", 11/16", 3/4", 13/16", 7/8", 15/16", 1", 1-1/16"



| Part No. | Description      | Price /Each |
|----------|------------------|-------------|
| 0342916  | 3/4" Rotoloc Kit | \$764.35    |



# ANNULAR CUTTERS

## Annular Cutters Cont.



### Annular Cutters



- Rotabroach are made from high speed steel with special tooth geometry that make cutting holes faster and easier
- Premium Rotabroach Cutters are Cobalt M42 and Tin coated for reduced friction and increased tool life
- All annular cutters have 3/4" shank

| Part No.               | Size    | Price /Each |
|------------------------|---------|-------------|
| <b>1" Depth of Cut</b> |         |             |
| 0342666                | 7/16    | \$35.49     |
| 0342667                | 1/2     | 37.60       |
| 0342668                | 9/16    | 42.95       |
| 0342669                | 5/8     | 44.94       |
| 0342670                | 11/16   | 46.74       |
| 0342671                | 3/4     | 49.17       |
| 0342672                | 13/16   | 52.71       |
| 0342673                | 7/8     | 56.50       |
| 0342674                | 15/16   | 60.23       |
| 0342675                | 1       | 64.64       |
| 0342676                | 1-1/16  | 66.32       |
| 0342677                | 1-1/8   | 76.39       |
| 0342678                | 1-3/16  | 79.56       |
| 0342679                | 1-1/4   | 82.61       |
| 0342680                | 1-5/16  | 86.96       |
| 0342681                | 1-3/8   | 111.76      |
| 0342682                | 1-7/16  | 125.06      |
| 0342683                | 1-1/2   | 130.71      |
| 0342684                | 1-9/16  | 146.01      |
| 0342685                | 1-5/8   | 154.02      |
| 0342686                | 1-11/16 | 160.11      |
| 0342687                | 1-3/4   | 171.55      |
| 0342688                | 1-13/16 | 177.83      |
| 0342689                | 1-7/8   | 187.15      |
| 0342690                | 1-15/16 | 200.33      |
| 0342691                | 2       | 206.67      |

| Part No.               | Size    | Price /Each |
|------------------------|---------|-------------|
| <b>2" Depth of Cut</b> |         |             |
| 0342692                | 7/16    | \$45.00     |
| 0342693                | 1/2     | 49.54       |
| 0342694                | 9/16    | 56.19       |
| 0342695                | 5/8     | 60.60       |
| 0342696                | 11/16   | 67.19       |
| 0342697                | 3/4     | 73.84       |
| 0342698                | 13/16   | 80.60       |
| 0342699                | 7/8     | 82.98       |
| 0342700                | 15/16   | 91.94       |
| 0342701                | 1       | 96.90       |
| 0342702                | 1-1/16  | 102.18      |
| 0342703                | 1-1/8   | 114.62      |
| 0342704                | 1-3/16  | 122.67      |
| 0342705                | 1-1/4   | 123.75      |
| 0342706                | 1-5/16  | 134.13      |
| 0342707                | 1-3/8   | 136.74      |
| 0342708                | 1-7/16  | 161.65      |
| 0342709                | 1-1/2   | 164.40      |
| 0342710                | 1-9/16  | 183.86      |
| 0342711                | 1-5/8   | 195.17      |
| 0342712                | 1-11/16 | 203.69      |
| 0342713                | 1-3/4   | 216.37      |

| Part No.   | Size    | Price /Each |
|--|---------|-------------|
| 0342714  | 1-13/16 | \$226.12    |
| 0342715  | 1-7/8   | 238.74      |
| 0342716  | 1-15/16 | 254.78      |
| 0342717  | 2       | 265.35      |
| 0342718  | 2-1/16  | 283.12      |
| 0342719  | 2-1/8   | 286.17      |
| 0342720  | 2-3/16  | 294.74      |
| 0342721  | 2-1/4   | 304.57      |
| 0342722  | 2-5/16  | 311.96      |
| 0342723  | 2-3/8   | 320.54      |
| <b>Premium Rotabroach Cutters, 2" Depth of Cut</b> |         |             |
| 0342647  | 7/8     | \$144.45    |
| 0342648  | 15/16   | 145.20      |
| 0342649  | 1       | 149.42      |
| 0342650  | 1-1/16  | 151.97      |
| 0342651  | 1-1/8   | 155.95      |
| 0342652  | 1-3/16  | 168.44      |
| 0342653  | 1-1/4   | 172.98      |
| 0342654  | 1-5/16  | 175.40      |
| 0342655  | 1-3/8   | 180.56      |
| 0342656  | 1-7/16  | 184.79      |
| 0342657  | 1-1/2   | 191.88      |

| Pilot - Drill Accessory |           |                               |             |
|-------------------------|-----------|-------------------------------|-------------|
| Part No.                | Cut Depth | Size Range                    | Price /Each |
| 0343044                 | 1"        | 3/4" - 2-3/8" & 19 mm - 51 mm | \$12.87     |
| 0343045                 | 2"        | 3/4" - 2-3/8" & 19 mm - 51 mm | 13.83       |
| 0343046                 | 1"        | 7/16" & 12 mm                 | 11.48       |
| 0343047                 | 2"        | 7/16" & 12 mm                 | 11.99       |
| 0343048                 | 1"        | 1/2" - 11/16" & 13 mm - 18 mm | 12.87       |
| 0343049                 | 2"        | 1/2" - 11/16" & 13 mm - 18 mm | 13.83       |



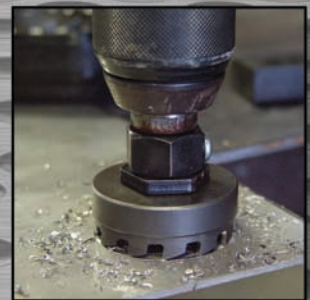
Magnetic Drills



Annular Cutters



Hydraulic Punches



Sheet Metal Cutters

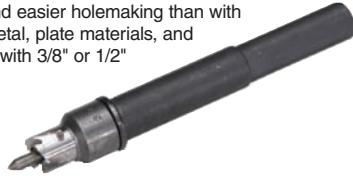
**Service • Integrity • Reliability**

## Annular Cutters Cont.



### Hougen RotaCut™ Sheet Metal Cutters

Sheet Metal Cutters provide faster and easier holmaking than with conventional twist drills. For sheet metal, plate materials, and plastics up to 1/2" thick. Use in drills with 3/8" or 1/2" chucks



| Part No. | Size   | Price /Each |
|----------|--------|-------------|
| 0343110  | 1/4    | \$10.92     |
| 0343111  | 9/32   | 10.92       |
| 0343112  | 5/16   | 10.92       |
| 0343113  | 11/32  | 13.00       |
| 0343114  | 3/8    | 13.00       |
| 0343115  | 13/32  | 16.34       |
| 0343116  | 27/64  | 16.34       |
| 0343117  | 7/16   | 16.34       |
| 0343118  | 15/32  | 17.04       |
| 0343119  | 1/2    | 17.04       |
| 0343120  | 17/32  | 18.78       |
| 0343121  | 9/16   | 18.78       |
| 0343122  | 5/8    | 19.82       |
| 0343123  | 11/16  | 22.60       |
| 0343124  | 23/32  | 22.60       |
| 0343125  | 3/4    | 22.60       |
| 0343126  | 13/16  | 33.17       |
| 0343127  | 7/8    | 34.42       |
| 0343128  | 15/16  | 36.44       |
| 0343129  | 1      | 38.45       |
| 0343130  | 1-1/16 | 43.59       |
| 0343131  | 1-1/8  | 45.06       |
| 0343132  | 1-3/16 | 46.73       |
| 0343133  | 1-1/4  | 52.77       |
| 0343135  | 1-3/8  | 56.33       |
| 0343137  | 1-1/2  | 60.15       |

| Part No. | Description   | Price /Each |
|----------|---|-------------|
| 0343104  | Kit Contains arbor , punch, pilot, and (7) cutters; 5/16, 3/8, 7/16,1/2, 9/16, 5/8, and 3/4 | \$121.59    |
| 0343106  | Kit Contains arbor , punch, pilot, and (6) cutters; 7/8, 1, 1-1/8, 1-1/4, 1-3/8, and 1-1/2" | 304.24      |

## Magnetic Drills

### #HMD115 RotaLoc™ Magnetic Base Drill

- Max. Hole Dia.: 1-1/16"
- Max. Hole Depth: 3/4"
- Power: 120V, 7.2A
- No Load RPM: 450rpm
- Weight: 21.3 lbs.
- Magnetic Force: 2080 lbs.
- Magnet Dimensions: 4" x 7"
- Height: 6-11/16"



| Part No. | Price /Each |
|----------|-------------|
| 0342643  | \$945.00    |

### #HMD150 RotaLoc-Plus™ Magnetic Base Drill

- Max. Hole Dia.: 1-3/8"
- Max. Hole Depth: 1"
- Power: 120V, 7.2A
- No load RPM: 450 rpm
- Weight 22.7 lbs
- Magnetic Force: 2165 lbs
- Magnet Dimensions: 4" x 7"
- Height: 7-13/16"



| Part No. | Price /Each |
|----------|-------------|
| 0342644  | \$1056.78   |

### #HMD904 Single Speed Hougen Magnetic Base Drill

- Max. Hole Dia.: 1-1/2"
- Max. Hole Depth: 2"
- Power: 120V, 7.2A
- No load RPM: 450 rpm
- Weight: 27.5 lbs.
- Magnetic Force: 1680 lbs.
- Magnet Dimensions: 3-1/8" x 6-9/16"
- Height: 16-7/16"



| Part No. | Price /Each |
|----------|-------------|
| 0342646  | \$1106.84   |

### #HMD104 Single Speed Hougen Magnetic Base Drill

- Max. Hole Dia.: 2-3/8"
- Max. Hole Depth: 3"
- Power: 120V, 13A
- No load RPM: 250/450rpm
- Weight 45 lbs.
- Magnetic Force: 2560 lbs.
- Magnet Dimensions: 4" x 8"
- Height: 20"



| Part No. | Price        |
|----------|--------------|
| 0342645  | \$*1,551.80* |

### #10914 Hougen Magnetic Base Drill

- Max. Hole Dia.: 2-1/16"
- Max. Hole Depth: 3"
- Power: 120V, 10.5A
- No load RPM: 350rpm
- Weight: 44 lbs.
- Magnetic Force: 2500 lbs.
- Magnet Dimensions: 3-1/2" x 7"
- Height: 20-1/2"



| Part No. | Price /Each |
|----------|-------------|
| 0342639  | \$1501.74   |

# ANNULAR CUTTERS & END MILLS

## Annular Cutters Cont.



Cutting Tools

### Punch-Pro

- Punches install in seconds! Simply slide the collar up, insert the punch, and release the collar.

Designed for applications typically done with hand held twist drills. At just 26 pounds, our lightest weight model is easily handled in all types of punching applications, on sight or in the shop. Punch round, oblong and square holes in materials from 5/64" up to 1/4" thick. Its 2-3/8" throat depth provides excellent reach and versatility. Easily confirm the hole position with the jog down feature. Punch automatically returns to the starting position after the punching cycle is complete. Work stand, foot switch, 9/16" punch & (2) dies, tool kit and carrying case are standard.



| Part No. | Pressure | Approx. Punch Speed | Max. Hole Size | Max. Thickness | Max. Punch Throat Depth | Single Phase Motor | Price /Each |
|----------|----------|---------------------|----------------|----------------|-------------------------|--------------------|-------------|
| 0951477  | 13.2     | 1.2                 | 25/32          | 19/64          | 2-3/8                   | 115V               | \$2888.54   |

Still portable yet its 22 ton punching pressure and double insulated motor move it up to punching 3/8" materials. Its added capacities and weight make it more suitable to using the work stand and foot switch for best performance. Easily confirm the hole position with the jog down feature. Punch automatically returns to the starting position after the punching cycle is complete. Work stand, foot switch, 11/16" punch & die, tool kit and carrying case are standard.



| Part No. | Pressure | Approx. Punch Speed | Max. Hole Size | Max. Thickness | Max. Punch Throat Depth | Single Phase Motor | Price /Each |
|----------|----------|---------------------|----------------|----------------|-------------------------|--------------------|-------------|
| 0951479  | 22       | 1.5                 | 25/32          | 3/8            | 1-9/16                  | 115V               | \$3860.77   |

## HSS End Mills

# FASTENAL

### 2 Flute Single End - Right Hand Cut - Center Cutting



| Size  | Part No. | Shank Dia. | Cut Lgth. | Overall Lgth. | Price /Each |
|-------|----------|------------|-----------|---------------|-------------|
| 1/8   | 0306094  | 3/8        | 3/8       | 2-5/16        | \$7.19      |
| 5/32  | 0306095  | 3/8        | 7/16      | 2-5/16        | 8.84        |
| 3/16  | 0306096  | 3/8        | 7/16      | 2-5/16        | 7.19        |
| 7/32  | 0306097  | 3/8        | 1/2       | 2-5/16        | 8.84        |
| 1/4   | 0306098  | 3/8        | 1/2       | 2-5/16        | 7.19        |
| 9/32  | 0306099  | 3/8        | 9/16      | 2-5/16        | 8.84        |
| 5/16  | 0306100  | 3/8        | 9/16      | 2-5/16        | 7.19        |
| 11/32 | 0306101  | 3/8        | 9/16      | 2-5/16        | 8.84        |
| 3/8   | 0306102  | 3/8        | 9/16      | 2-5/16        | 7.19        |
| 13/32 | 0306103  | 3/8        | 13/16     | 2-1/2         | 8.84        |
| 7/16  | 0306104  | 3/8        | 13/16     | 2-1/2         | 9.63        |
| 15/32 | 0306105  | 3/8        | 13/16     | 2-1/2         | 13.93       |
| 1/2   | 0306106  | 3/8        | 13/16     | 2-1/2         | 10.50       |
| 1/2   | 0306107  | 1/2        | 1         | 3             | 10.50       |
| 9/16  | 0306108  | 1/2        | 1-1/8     | 3-1/8         | 13.13       |
| 5/8   | 0306109  | 1/2        | 1-1/8     | 3-1/8         | 14.63       |
| 5/8   | 0306110  | 5/8        | 1-5/16    | 3-7/16        | 15.13       |
| 11/16 | 0306111  | 5/8        | 1-5/16    | 3-7/16        | 18.22       |
| 3/4   | 0306112  | 1/2        | 1-5/16    | 3-7/16        | 17.28       |
| 3/4   | 0306113  | 5/8        | 1-5/16    | 3-7/16        | 17.28       |
| 3/4   | 0306114  | 3/4        | 1-5/16    | 3-7/16        | 20.81       |
| 13/16 | 0306115  | 5/8        | 1-1/2     | 3-5/8         | 23.79       |
| 7/8   | 0306116  | 3/4        | 1-1/2     | 3-3/4         | 23.79       |
| 7/8   | 0306117  | 7/8        | 1-1/2     | 3-3/4         | 24.59       |
| 15/16 | 0306118  | 7/8        | 1-1/2     | 3-3/4         | 24.59       |
| 1     | 0306119  | 5/8        | 1-1/2     | 3-5/8         | 24.63       |
| 1     | 0306120  | 3/4        | 1-1/2     | 3-3/4         | 30.13       |
| 1     | 0306121  | 1          | 1-5/8     | 4-1/8         | 27.00       |

## 4 Flute Single End - Right Hand Cut - Center Cutting



### Regular Length

| Size  | Part No. | Shank Dia. | Cut Lgth. | Overall Lgth. | Price /Each |
|-------|----------|------------|-----------|---------------|-------------|
| 1/8   | 0322303  | 3/8        | 3/8       | 2-5/16        | \$9.66      |
| 3/16  | 0322304  | 3/8        | 1/2       | 2-3/8         | 9.66        |
| 1/4   | 0322305  | 3/8        | 5/8       | 2-7/16        | 9.66        |
| 5/16  | 0322306  | 3/8        | 3/4       | 2-1/2         | 9.66        |
| 3/8   | 0322307  | 3/8        | 3/4       | 2-1/2         | 9.66        |
| 7/16  | 0322308  | 3/8        | 1         | 2-11/16       | 15.34       |
| 1/2   | 0322309  | 1/2        | 1-1/4     | 3-1/4         | 15.34       |
| 9/16  | 0322310  | 1/2        | 1-3/8     | 3-3/8         | 17.31       |
| 5/8   | 0322311  | 5/8        | 1-5/8     | 3-3/4         | 19.22       |
| 11/16 | 0322312  | 5/8        | 1-5/8     | 3-3/4         | 21.16       |
| 3/4   | 0322313  | 5/8        | 1-5/8     | 3-3/4         | 23.00       |
| 3/4   | 0322314  | 3/4        | 1-5/8     | 3-7/8         | 23.00       |
| 13/16 | 0322315  | 3/4        | 1-7/8     | 4-1/8         | 25.31       |
| 7/8   | 0322316  | 3/4        | 1-7/8     | 4-1/8         | 28.13       |
| 7/8   | 0322317  | 7/8        | 1-7/8     | 4-1/8         | 28.13       |
| 1     | 0322318  | 3/4        | 1-7/8     | 4-1/8         | 35.22       |
| 1     | 0322319  | 1          | 2         | 4-1/2         | 35.22       |
| 1-1/8 | 0322320  | 3/4        | 2         | 4-1/4         | 56.00       |
| 1-1/8 | 0322321  | 1          | 2         | 4-1/2         | 56.00       |

### Long Length

| Size  | Part No. | Shank Dia. | Cut Lgth. | Overall Lgth. | Price /Each |
|-------|----------|------------|-----------|---------------|-------------|
| 1/8   | 0322322  | 3/8        | 3/4       | 2-1/2         | \$11.66     |
| 3/16  | 0322323  | 3/8        | 1-1/4     | 3-1/16        | 11.66       |
| 1/4   | 0322324  | 3/8        | 1-1/4     | 3-1/16        | 11.66       |
| 5/16  | 0322325  | 3/8        | 1-3/8     | 3-1/8         | 11.66       |
| 3/8   | 0322326  | 3/8        | 1-1/2     | 3-1/4         | 11.66       |
| 7/16  | 0322327  | 3/8        | 1-3/4     | 3-1/2         | 18.69       |
| 1/2   | 0322328  | 1/2        | 2         | 4             | 18.69       |
| 9/16  | 0322329  | 1/2        | 2-1/4     | 4-1/4         | 23.72       |
| 5/8   | 0322330  | 5/8        | 2-1/2     | 4-5/8         | 26.34       |
| 11/16 | 0322331  | 5/8        | 2-3/4     | 4-5/8         | 30.81       |
| 3/4   | 0322332  | 5/8        | 3         | 5-1/4         | 34.25       |
| 3/4   | 0322333  | 3/4        | 3         | 5-1/4         | 34.25       |
| 13/16 | 0322334  | 3/4        | 3-1/4     | 5-1/2         | 53.03       |
| 7/8   | 0322335  | 3/4        | 3-1/2     | 5-3/4         | 58.94       |
| 7/8   | 0322336  | 7/8        | 3-1/2     | 5-3/4         | 58.94       |
| 1     | 0322337  | 3/4        | 4         | 6-1/2         | 64.91       |
| 1     | 0322338  | 1          | 4         | 6-1/2         | 64.91       |
| 1-1/8 | 0322339  | 3/4        | 4         | 6-1/2         | 83.16       |
| 1-1/8 | 0322340  | 1          | 4         | 6-1/2         | 83.16       |

### Extra Long Length

| Size  | Part No. | Shank Dia. | Cut Lgth. | Overall Lgth. | Price /Each |
|-------|----------|------------|-----------|---------------|-------------|
| 1/4   | 0322343  | 3/8        | 1-3/4     | 3-9/16        | \$13.38     |
| 5/16  | 0322344  | 3/8        | 2         | 3-3/4         | 13.38       |
| 3/8   | 0322345  | 3/8        | 2-1/2     | 4-1/4         | 20.59       |
| 7/16  | 0322346  | 3/8        | 3         | 4-1/2         | 20.59       |
| 1/2   | 0322347  | 1/2        | 3         | 5             | 20.59       |
| 9/16  | 0322348  | 1/2        | 3         | 6             | 30.81       |
| 5/8   | 0322349  | 5/8        | 4         | 6-1/8         | 34.25       |
| 11/16 | 0322350  | 5/8        | 4         | 6-1/8         | 37.19       |
| 3/4   | 0322351  | 5/8        | 4         | 6-1/4         | 41.34       |
| 3/4   | 0322352  | 3/4        | 4         | 6-1/4         | 41.34       |
| 13/16 | 0322353  | 3/4        | 5         | 7-1/4         | 52.41       |
| 7/8   | 0322354  | 3/4        | 5         | 7-1/4         | 58.22       |
| 7/8   | 0322355  | 7/8        | 5         | 7-1/4         | 58.22       |
| 1     | 0322356  | 3/4        | 6         | 8-1/2         | 79.09       |
| 1     | 0322357  | 1          | 6         | 8-1/2         | 79.09       |
| 1-1/8 | 0322358  | 3/4        | 6         | 8-1/2         | 94.31       |
| 1-1/8 | 0322359  | 1          | 6         | 8-1/2         | 94.31       |



## Carbide End Mills Cont.

# FASTENAL

### 4 Flute Single End - Right Hand Cut - Non-Center Cutting - Stub Length



| Size  | Part No. | Shank Dia. | Cut Lgth. | Overall Lgth. | Price /Each |
|-------|----------|------------|-----------|---------------|-------------|
| 1/8   | 0306052  | 3/8        | 3/8       | 2-5/16        | \$6.88      |
| 11/64 | 0306053  | 3/8        | 1/2       | 2-3/8         | 8.26        |
| 3/16  | 0306054  | 3/8        | 1/2       | 2-3/8         | 6.88        |
| 13/64 | 0306055  | 3/8        | 9/16      | 2-7/16        | 8.26        |
| 7/32  | 0306056  | 3/8        | 9/16      | 2-7/16        | 8.26        |
| 15/64 | 0306057  | 3/8        | 5/8       | 2-7/16        | 8.26        |
| 1/4   | 0306058  | 3/8        | 5/8       | 2-7/16        | 6.88        |
| 17/64 | 0306059  | 3/8        | 11/16     | 2-1/2         | 8.26        |
| 9/32  | 0306060  | 3/8        | 11/16     | 2-1/2         | 8.26        |
| 19/64 | 0306061  | 3/8        | 3/4       | 2-1/2         | 6.88        |
| 5/16  | 0306062  | 3/8        | 3/4       | 2-1/2         | 9.59        |
| 21/64 | 0306063  | 3/8        | 3/4       | 2-1/2         | 9.38        |
| 3/8   | 0306064  | 3/8        | 3/4       | 2-1/2         | 6.88        |
| 13/32 | 0306065  | 3/8        | 1         | 2-11/16       | 9.38        |
| 7/16  | 0306066  | 3/8        | 1         | 2-11/16       | 9.31        |
| 15/32 | 0306067  | 1/2        | 1-1/4     | 3-1/4         | 9.59        |
| 1/2   | 0306068  | 3/8        | 1         | 2-11/16       | 9.31        |
| 1/2   | 0306069  | 1/2        | 1-1/4     | 3-1/4         | 9.44        |
| 17/32 | 0306070  | 1/2        | 1-3/8     | 3-3/8         | 12.97       |
| 9/16  | 0306071  | 1/2        | 1-3/8     | 3-3/8         | 12.66       |
| 19/32 | 0306072  | 1/2        | 1-3/8     | 3-3/8         | 16.56       |
| 5/8   | 0306073  | 1/2        | 1-3/8     | 3-3/8         | 13.72       |
| 5/8   | 0306074  | 5/8        | 1-5/8     | 3-3/4         | 15.31       |
| 11/16 | 0306075  | 5/8        | 1-5/8     | 3-3/4         | 19.24       |
| 3/4   | 0306076  | 1/2        | 1-5/8     | 3-5/8         | 19.02       |
| 3/4   | 0306077  | 5/8        | 1-5/8     | 3-3/4         | 19.02       |
| 3/4   | 0306078  | 3/4        | 1-5/8     | 3-7/8         | 20.53       |
| 7/8   | 0306079  | 3/4        | 1-7/8     | 4-1/8         | 24.64       |
| 7/8   | 0306080  | 7/8        | 1-7/8     | 4-1/8         | 24.64       |
| 15/16 | 0306081  | 3/4        | 1-7/8     | 4-1/8         | 26.78       |
| 1     | 0306082  | 5/8        | 1-7/8     | 4             | 27.32       |
| 1     | 0306083  | 3/4        | 1-7/8     | 4-1/8         | 42.85       |
| 1     | 0306084  | 1          | 2         | 4-1/2         | 42.85       |

Made in Korea.

### 2 Flute Double End - Right Hand Cut - Center Cutting



| Size  | Part No. | Shank Dia. | Cut Lgth. | Overall Lgth. | Price /Each |
|-------|----------|------------|-----------|---------------|-------------|
| 1/8   | 0306031  | 3/8        | 3/8       | 3-1/16        | \$8.47      |
| 5/32  | 0306032  | 3/8        | 7/16      | 3-3/8         | 10.18       |
| 3/16  | 0306033  | 3/8        | 7/16      | 3-1/8         | 8.47        |
| 7/32  | 0306034  | 3/8        | 1/2       | 3-1/8         | 10.18       |
| 1/4   | 0306035  | 3/8        | 1/2       | 3-1/8         | 8.47        |
| 9/32  | 0306036  | 3/8        | 9/16      | 3-1/8         | 10.18       |
| 5/16  | 0306037  | 3/8        | 9/16      | 3-1/8         | 8.47        |
| 11/32 | 0306038  | 3/8        | 9/16      | 3-1/8         | 10.18       |
| 3/8   | 0306039  | 3/8        | 9/16      | 3-1/8         | 8.47        |
| 13/32 | 0306040  | 1/2        | 13/16     | 3-3/4         | 14.47       |
| 7/16  | 0306041  | 1/2        | 1-3/16    | 3-3/4         | 14.19       |
| 15/32 | 0306042  | 1/2        | 13/16     | 3-3/4         | 14.47       |
| 1/2   | 0306043  | 1/2        | 1-3/16    | 3-3/4         | 14.19       |
| 9/16  | 0306044  | 5/8        | 1-1/8     | 4-1/2         | 20.09       |
| 5/8   | 0306045  | 5/8        | 1-1/8     | 4-1/2         | 20.09       |
| 11/16 | 0306046  | 3/4        | 1-5/16    | 5-5/8         | 21.43       |
| 3/4   | 0306047  | 3/4        | 1-5/16    | 5             | 23.97       |
| 13/16 | 0306048  | 7/8        | 1-9/16    | 6-1/8         | 26.78       |
| 7/8   | 0306049  | 7/8        | 1-9/16    | 6-1/8         | 26.78       |
| 15/16 | 0306050  | 1          | 1-5/8     | 6-3/8         | 30.00       |
| 1     | 0306051  | 1          | 1-5/8     | 6-3/8         | 31.07       |

### 4 Flute Double End - Right Hand Cut - Non-Center Cutting



| Size  | Part No. | Shank Dia. | Cut Lgth. | Overall Lgth. | Price /Each |
|-------|----------|------------|-----------|---------------|-------------|
| 1/8   | 0306012  | 3/8        | 3/8       | 3-1/16        | \$8.47      |
| 5/32  | 0306013  | 3/8        | 7/16      | 3-1/8         | 8.63        |
| 3/16  | 0306014  | 3/8        | 1/2       | 3-1/4         | 8.47        |
| 7/32  | 0306015  | 3/8        | 9/16      | 3-1/4         | 11.74       |
| 1/4   | 0306016  | 3/8        | 5/8       | 3-3/8         | 8.47        |
| 9/32  | 0306017  | 3/8        | 11/16     | 3-3/8         | 12.32       |
| 5/16  | 0306018  | 3/8        | 3/4       | 3-1/2         | 8.47        |
| 11/32 | 0306019  | 3/8        | 3/4       | 3-1/2         | 12.32       |
| 3/8   | 0306020  | 3/8        | 3/4       | 3-1/2         | 8.47        |
| 13/32 | 0306021  | 1/2        | 1         | 4-1/8         | 17.41       |
| 7/16  | 0306022  | 1/2        | 1         | 4-1/8         | 14.19       |
| 15/32 | 0306023  | 1/2        | 1         | 4-1/8         | 17.41       |
| 1/2   | 0306024  | 1/2        | 1         | 4-1/8         | 14.19       |
| 9/16  | 0306025  | 5/8        | 1-3/8     | 5             | 20.09       |
| 5/8   | 0306026  | 5/8        | 1-3/8     | 5             | 20.09       |
| 11/16 | 0306027  | 3/4        | 1-5/8     | 5-5/8         | 25.61       |
| 3/4   | 0306028  | 3/4        | 1-5/8     | 5-5/8         | 23.97       |
| 13/16 | 0306029  | 7/8        | 1-7/8     | 6-1/8         | 32.84       |
| 7/8   | 0306030  | 7/8        | 1-7/8     | 6-1/8         | 32.84       |

## Niagara Cutter

### 3 Flute High-Helix HSS End Mill for Aluminum

#### A337 - Single-End, Center-Cutting

- 37° Helix
- Eccentric Relief
- M7 High Speed Steel
- Reduces Chatter on Cutting Edge
- Full CNC Ground
- Cylindrical Land



| Part No. | Diameter | Coating  | Flute Lgth. | Shank Dia. | Price /Each |
|----------|----------|----------|-------------|------------|-------------|
| 0327624  | 3/16     | Uncoated | 1/2         | 3/8        | \$15.49:    |
| 0327625  | 1/4      | Uncoated | 5/8         | 3/8        | 15.49:      |
| 0327626  | 3/8      | Uncoated | 3/4         | 3/8        | 15.49:      |
| 0327627  | 3/8      | Uncoated | 1-1/2       | 3/8        | 17.78:      |
| 0327628  | 1/2      | Uncoated | 1-1/4       | 1/2        | 21.29:      |
| 0327629  | 1/2      | Uncoated | 2           | 1/2        | 24.19:      |
| 0327630  | 5/8      | Uncoated | 1-5/8       | 5/8        | 26.73:      |
| 0327631  | 3/4      | Uncoated | 1-5/8       | 3/4        | 28.06:      |
| 0327632  | 3/4      | Uncoated | 2-1/4       | 3/4        | 33.03:      |
| 0327633  | 1        | Uncoated | 2           | 1          | 45.85:      |
| 0327634  | 1        | Uncoated | 3           | 1          | 56.13:      |
| 0327635  | 3/16     | TiCN Ctd | 1/2         | 3/8        | 17.05:      |
| 0327636  | 1/4      | TiCN Ctd | 5/8         | 3/8        | 17.05:      |
| 0327637  | 3/8      | TiCN Ctd | 3/4         | 3/8        | 17.05:      |
| 0327638  | 3/8      | TiCN Ctd | 1-1/2       | 3/8        | 19.59:      |
| 0327639  | 1/2      | TiCN Ctd | 1-1/4       | 1/2        | 23.47:      |
| 0327640  | 1/2      | TiCN Ctd | 2           | 1/2        | 26.61:      |
| 0327641  | 5/8      | TiCN Ctd | 1-5/8       | 5/8        | 29.40:      |
| 0327642  | 3/4      | TiCN Ctd | 1-5/8       | 3/4        | 30.84:      |
| 0327643  | 3/4      | TiCN Ctd | 2-1/4       | 3/4        | 36.29:      |
| 0327644  | 1        | TiCN Ctd | 2           | 1          | 50.44:      |
| 0327645  | 1        | TiCN Ctd | 3           | 1          | 61.69:      |

### 2 Flute HSS End Mill, General Purpose

#### S203 - Single-End, Center Cutting

- Designed for all Materials
- Profile / Slotting / Pocket



| Part No. | Diameter | Coating  | Flute Lgth. | Shank Dia. | Price /Each |
|----------|----------|----------|-------------|------------|-------------|
| 0327646  | 1/8      | Uncoated | 3/8         | 3/8        | \$11.37:    |
| 0327647  | 5/32     | Uncoated | 7/16        | 3/8        | 11.37:      |
| 0327648  | 3/16     | Uncoated | 3/16        | 3/8        | 11.37:      |
| 0327649  | 7/32     | Uncoated | 1/2         | 3/8        | 12.82:      |
| 0327650  | 1/4      | Uncoated | 1/2         | 3/8        | 11.37:      |
| 0327651  | 1/4      | Uncoated | 1           | 3/8        | 17.42:      |
| 0327652  | 5/16     | Uncoated | 9/16        | 3/8        | 11.37:      |
| 0327653  | 3/8      | Uncoated | 9/16        | 3/8        | 11.37:      |
| 0327654  | 3/8      | Uncoated | 1-1/2       | 3/8        | 17.42:      |
| 0327655  | 7/16     | Uncoated | 13/16       | 3/8        | 15.96:      |
| 0327656  | 1/2      | Uncoated | 13/16       | 3/8        | 15.96:      |
| 0327657  | 1/2      | Uncoated | 1           | 1/2        | 16.57:      |
| 0327658  | 9/16     | Uncoated | 1-1/8       | 1/2        | 19.96:      |
| 0327659  | 5/8      | Uncoated | 1-1/8       | 1/2        | 22.38:      |
| 0327660  | 5/8      | Uncoated | 1-5/16      | 5/8        | 23.22:      |
| 0327661  | 3/4      | Uncoated | 1-5/16      | 1/2        | 26.24:      |
| 0327662  | 3/4      | Uncoated | 1-5/16      | 3/4        | 26.24:      |
| 0327663  | 7/8      | Uncoated | 1-1/2       | 3/4        | 31.94:      |
| 0327664  | 1        | Uncoated | 1-1/2       | 5/8        | 36.66:      |
| 0327665  | 1        | Uncoated | 1-1/2       | 3/4        | 36.66:      |
| 0327666  | 1        | Uncoated | 1-5/8       | 1          | 40.64:      |
| 0327667  | 1-1/4    | Uncoated | 1-5/8       | 3/4        | 75.00:      |
| 0327668  | 1/8      | TiN Ctd  | 3/8         | 3/8        | 11.98:      |
| 0327669  | 5/32     | TiN Ctd  | 7/16        | 3/8        | 11.98:      |
| 0327670  | 3/16     | TiN Ctd  | 3/16        | 3/8        | 11.98:      |
| 0327671  | 7/32     | TiN Ctd  | 1/2         | 3/8        | 13.42:      |

| Part No. | Diameter | Coating | Flute Lgth. | Shank Dia. | Price /Each |
|----------|----------|---------|-------------|------------|-------------|
| 0327672  | 1/4      | TiN Ctd | 1/2         | 3/8        | 11.98:      |
| 0327673  | 1/4      | TiN Ctd | 1           | 3/8        | 18.26:      |
| 0327674  | 5/16     | TiN Ctd | 9/16        | 3/8        | 11.98:      |
| 0327675  | 3/8      | TiN Ctd | 9/16        | 3/8        | 11.98:      |
| 0327676  | 3/8      | TiN Ctd | 1-1/2       | 3/8        | 18.26:      |
| 0327677  | 7/16     | TiN Ctd | 13/16       | 3/8        | 16.96:      |
| 0327678  | 1/2      | TiN Ctd | 13/16       | 3/8        | 16.96:      |
| 0327679  | 1/2      | TiN Ctd | 1           | 1/2        | 17.42:      |
| 0327680  | 9/16     | TiN Ctd | 1-1/8       | 1/2        | 20.93:      |
| 0327681  | 5/8      | TiN Ctd | 1-1/8       | 1/2        | 23.47:      |
| 0327682  | 5/8      | TiN Ctd | 1-5/16      | 5/8        | 24.43:      |
| 0327683  | 3/4      | TiN Ctd | 1-5/16      | 1/2        | 27.58:      |
| 0327684  | 3/4      | TiN Ctd | 1-5/16      | 3/4        | 27.58:      |
| 0327685  | 7/8      | TiN Ctd | 1-1/2       | 3/4        | 33.50:      |
| 0327686  | 1        | TiN Ctd | 1-1/2       | 5/8        | 38.47:      |
| 0327687  | 1        | TiN Ctd | 1-1/2       | 3/4        | 38.47:      |
| 0327688  | 1        | TiN Ctd | 1-5/8       | 1          | 42.70:      |
| 0327689  | 1-1/4    | TiN Ctd | 1-5/8       | 3/4        | 78.74:      |

End Mills



# HSS END MILLS

## HSS End Mills Cont.



### Niagara Cutter

#### 2 Flute HSS End Mill, General Purpose Cont.

##### D201 - Double-End, Center-Cutting

- Designed for all Materials
- Profile / Slotting / Pocket



| Part No. | Diameter | Coating  | Flute Lgth. | Shank Dia. | Price /Each |
|----------|----------|----------|-------------|------------|-------------|
| 0327690  | 1/8      | Uncoated | 3/8         | 3/8        | \$15.84:    |
| 0327691  | 5/32     | Uncoated | 7/16        | 3/8        | 16.82:      |
| 0327692  | 3/16     | Uncoated | 7/16        | 3/8        | 15.84:      |
| 0327693  | 7/32     | Uncoated | 1/2         | 3/8        | 16.82:      |
| 0327694  | 1/4      | Uncoated | 1/2         | 3/8        | 16.09:      |
| 0327695  | 9/32     | Uncoated | 9/16        | 3/8        | 16.93:      |
| 0327696  | 5/16     | Uncoated | 9/16        | 3/8        | 15.84:      |
| 0327697  | 3/8      | Uncoated | 9/16        | 3/8        | 16.09:      |
| 0327698  | 7/16     | Uncoated | 13/16       | 1/2        | 24.31:      |
| 0327699  | 1/2      | Uncoated | 13/16       | 1/2        | 24.31:      |
| 0327700  | 5/8      | Uncoated | 1-1/8       | 5/8        | 33.63:      |
| 0327701  | 3/4      | Uncoated | 1-5/16      | 3/4        | 42.45:      |
| 0327702  | 1        | Uncoated | 1-5/8       | 1          | 65.80:      |
| 0327703  | 1/8      | TiN Ctd  | 3/8         | 3/8        | 16.70:      |
| 0327704  | 5/32     | TiN Ctd  | 7/16        | 3/8        | 17.66:      |
| 0327705  | 3/16     | TiN Ctd  | 7/16        | 3/8        | 16.70:      |
| 0327706  | 7/32     | TiN Ctd  | 1/2         | 3/8        | 17.66:      |
| 0327707  | 1/4      | TiN Ctd  | 1/2         | 3/8        | 16.93:      |
| 0327708  | 9/32     | TiN Ctd  | 9/16        | 3/8        | 17.78:      |
| 0327709  | 5/16     | TiN Ctd  | 9/16        | 3/8        | 16.70:      |
| 0327710  | 3/8      | TiN Ctd  | 9/16        | 3/8        | 16.93:      |
| 0327711  | 7/16     | TiN Ctd  | 13/16       | 1/2        | 25.52:      |
| 0327712  | 1/2      | TiN Ctd  | 13/16       | 1/2        | 25.52:      |
| 0327713  | 5/8      | TiN Ctd  | 1-1/8       | 5/8        | 35.32:      |
| 0327714  | 3/4      | TiN Ctd  | 1-5/16      | 3/4        | 44.64:      |
| 0327715  | 1        | TiN Ctd  | 1-5/8       | 1          | 69.07:      |

#### 2 Flute HSS End Mill, Aluminum Cutting

##### A208 - Single-End, Center-Cutting

- Aluminum / Non-Ferrous
- Profile / Slotting



| Part No. | Diameter | Coating  | Flute Lgth. | Shank Dia. | Price /Each |
|----------|----------|----------|-------------|------------|-------------|
| 0327716  | 1/4      | Uncoated | 5/8         | 3/8        | \$13.67:    |
| 0327717  | 3/8      | Uncoated | 3/4         | 3/8        | 13.67:      |
| 0327718  | 1/2      | Uncoated | 1-1/4       | 1/2        | 18.99:      |
| 0327719  | 1/2      | Uncoated | 2           | 1/2        | 22.74:      |
| 0327720  | 5/8      | Uncoated | 2-1/2       | 5/8        | 30.36:      |
| 0327721  | 3/4      | Uncoated | 1-5/8       | 3/4        | 28.43:      |
| 0327722  | 1/4      | TiN Ctd  | 5/8         | 3/8        | 14.40:      |
| 0327723  | 3/8      | TiN Ctd  | 3/4         | 3/8        | 14.40:      |
| 0327724  | 1/2      | TiN Ctd  | 1-1/4       | 1/2        | 19.96:      |
| 0327725  | 1/2      | TiN Ctd  | 2           | 1/2        | 23.82:      |
| 0327726  | 5/8      | TiN Ctd  | 2-1/2       | 5/8        | 31.94:      |
| 0327727  | 3/4      | TiN Ctd  | 1-5/8       | 3/4        | 29.87:      |

#### Multi Flute HSS End Mill, General Purpose

##### S404 - Single-End, Non-Center Cut

- Designed for all Materials
- Profile / Slotting



| Part No. | Diameter | Coating  | Flute Lgth. | Shank Dia. | Price /Each |
|----------|----------|----------|-------------|------------|-------------|
| 0327728  | 1/8      | Uncoated | 3/8         | 3/8        | \$11.61:    |
| 0327729  | 5/32     | Uncoated | 7/16        | 3/8        | 11.61:      |
| 0327730  | 3/16     | Uncoated | 1/2         | 3/8        | 11.61:      |
| 0327731  | 7/32     | Uncoated | 3/4         | 3/8        | 14.28:      |
| 0327732  | 1/4      | Uncoated | 5/8         | 3/8        | 11.61:      |
| 0327733  | 1/4      | Uncoated | 1-1/4       | 3/8        | 15.36:      |
| 0327734  | 5/16     | Uncoated | 3/4         | 3/8        | 11.61:      |
| 0327735  | 3/8      | Uncoated | 3/4         | 3/8        | 11.61:      |
| 0327736  | 3/8      | Uncoated | 1-1/2       | 3/8        | 15.00:      |
| 0327737  | 7/16     | Uncoated | 1           | 3/8        | 15.84:      |
| 0327738  | 1/2      | Uncoated | 1           | 3/8        | 15.84:      |
| 0327739  | 1/2      | Uncoated | 1-1/4       | 1/2        | 15.84:      |
| 0327740  | 9/16     | Uncoated | 1-3/8       | 1/2        | 20.20:      |
| 0327741  | 5/8      | Uncoated | 1-3/8       | 1/2        | 22.14:      |
| 0327742  | 5/8      | Uncoated | 1-5/8       | 5/8        | 24.19:      |
| 0327743  | 3/4      | Uncoated | 1-5/8       | 1/2        | 26.49:      |
| 0327744  | 3/4      | Uncoated | 1-5/8       | 3/4        | 27.58:      |
| 0327745  | 7/8      | Uncoated | 1-7/8       | 3/4        | 36.29:      |
| 0327746  | 1        | Uncoated | 1-7/8       | 5/8        | 40.04:      |
| 0327747  | 1        | Uncoated | 1-7/8       | 3/4        | 39.31:      |
| 0327748  | 1        | Uncoated | 2           | 1          | 41.73:      |
| 0327749  | 1-1/4    | Uncoated | 2           | 3/4        | 66.77:      |
| 0327750  | 1/8      | TiN Ctd  | 3/8         | 3/8        | 12.21:      |
| 0327751  | 5/32     | TiN Ctd  | 7/16        | 3/8        | 12.21:      |
| 0327752  | 3/16     | TiN Ctd  | 1/2         | 3/8        | 12.21:      |
| 0327753  | 7/32     | TiN Ctd  | 3/4         | 3/8        | 15.00:      |
| 0327754  | 1/4      | TiN Ctd  | 5/8         | 3/8        | 12.21:      |
| 0327755  | 1/4      | TiN Ctd  | 1-1/4       | 3/8        | 16.09:      |
| 0327756  | 5/16     | TiN Ctd  | 3/4         | 3/8        | 12.21:      |
| 0327757  | 3/8      | TiN Ctd  | 3/4         | 3/8        | 12.21:      |
| 0327758  | 3/8      | TiN Ctd  | 1-1/2       | 3/8        | 15.72:      |
| 0327759  | 7/16     | TiN Ctd  | 1           | 3/8        | 16.84:      |
| 0327760  | 1/2      | TiN Ctd  | 1           | 3/8        | 16.84:      |
| 0327761  | 1/2      | TiN Ctd  | 1-1/4       | 1/2        | 16.70:      |
| 0327762  | 9/16     | TiN Ctd  | 1-3/8       | 1/2        | 21.17:      |
| 0327763  | 5/8      | TiN Ctd  | 1-3/8       | 1/2        | 23.22:      |
| 0327764  | 5/8      | TiN Ctd  | 1-5/8       | 5/8        | 25.40:      |
| 0327765  | 3/4      | TiN Ctd  | 1-5/8       | 1/2        | 27.82:      |
| 0327766  | 3/4      | TiN Ctd  | 1-5/8       | 3/4        | 28.91:      |
| 0327767  | 7/8      | TiN Ctd  | 1-7/8       | 3/4        | 38.10:      |
| 0327768  | 1        | TiN Ctd  | 1-7/8       | 5/8        | 42.10:      |
| 0327769  | 1        | TiN Ctd  | 1-7/8       | 3/4        | 41.25:      |
| 0327770  | 1        | TiN Ctd  | 2           | 1          | 43.78:      |
| 0327771  | 1-1/4    | TiN Ctd  | 2           | 3/4        | 70.16:      |

#### 4 Flute HSS End Mill, General Purpose

##### D400 - Double-End, Non-Center Cut

- Designed for all Materials
- Profile / Slotting

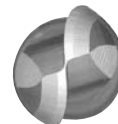


| Part No. | Diameter | Coating  | Flute Lgth. | Shank Dia. | Price /Each |
|----------|----------|----------|-------------|------------|-------------|
| 0327772  | 1/8      | Uncoated | 3/8         | 3/8        | \$16.09:    |
| 0327773  | 5/32     | Uncoated | 7/16        | 3/8        | 16.82:      |
| 0327774  | 3/16     | Uncoated | 1/2         | 3/8        | 16.09:      |
| 0327775  | 7/32     | Uncoated | 9/16        | 3/8        | 16.82:      |
| 0327776  | 1/4      | Uncoated | 5/8         | 3/8        | 15.84:      |
| 0327777  | 9/32     | Uncoated | 11/16       | 3/8        | 16.82:      |
| 0327778  | 5/16     | Uncoated | 3/4         | 3/8        | 15.84:      |
| 0327779  | 3/8      | Uncoated | 3/4         | 3/8        | 15.84:      |
| 0327780  | 7/16     | Uncoated | 1           | 1/2        | 22.86:      |
| 0327781  | 1/2      | Uncoated | 1           | 1/2        | 22.86:      |
| 0327782  | 5/8      | Uncoated | 1-3/8       | 5/8        | 33.15:      |
| 0327783  | 3/4      | Uncoated | 1-5/8       | 3/4        | 41.85:      |
| 0327784  | 1        | Uncoated | 1-7/8       | 1          | 64.35:      |
| 0327785  | 1/8      | TiN Ctd  | 3/8         | 3/8        | 16.93:      |
| 0327786  | 5/32     | TiN Ctd  | 7/16        | 3/8        | 17.66:      |
| 0327787  | 3/16     | TiN Ctd  | 1/2         | 3/8        | 16.93:      |
| 0327788  | 7/32     | TiN Ctd  | 9/16        | 3/8        | 17.66:      |
| 0327789  | 1/4      | TiN Ctd  | 5/8         | 3/8        | 16.70:      |
| 0327790  | 9/32     | TiN Ctd  | 11/16       | 3/8        | 17.66:      |
| 0327791  | 5/16     | TiN Ctd  | 3/4         | 3/8        | 16.70:      |
| 0327792  | 3/8      | TiN Ctd  | 3/4         | 3/8        | 16.70:      |
| 0327793  | 7/16     | TiN Ctd  | 1           | 1/2        | 23.95:      |
| 0327794  | 1/2      | TiN Ctd  | 1           | 1/2        | 23.95:      |
| 0327795  | 5/8      | TiN Ctd  | 1-3/8       | 5/8        | 34.84:      |
| 0327796  | 3/4      | TiN Ctd  | 1-5/8       | 3/4        | 43.91:      |
| 0327797  | 1        | TiN Ctd  | 1-7/8       | 1          | 67.62:      |

#### 2 Flute Ball-End HSS End Mill, General Purpose

##### SB207 - Ball-End, Center-Cutting

- Designed for all Materials
- Profile / Slotting / Contour / Pocket



| Part No. | Diameter | Coating  | Flute Lgth. | Shank Dia. | Price /Each |
|----------|----------|----------|-------------|------------|-------------|
| 0327798  | 1/8      | Uncoated | 3/8         | 3/8        | \$15.96:    |
| 0327799  | 3/16     | Uncoated | 1/2         | 3/8        | 15.96:      |
| 0327800  | 1/4      | Uncoated | 5/8         | 3/8        | 15.96:      |
| 0327801  | 3/8      | Uncoated | 3/4         | 3/8        | 18.51:      |
| 0327802  | 1/2      | Uncoated | 1           | 1/2        | 24.31:      |
| 0327803  | 5/8      | Uncoated | 1-3/8       | 5/8        | 34.71:      |
| 0327804  | 3/4      | Uncoated | 1-5/8       | 3/4        | 40.64:      |
| 0327805  | 1        | Uncoated | 2-1/4       | 3/4        | 65.20:      |
| 0327806  | 1/8      | TiN Ctd  | 3/8         | 3/8        | 16.96:      |
| 0327807  | 3/16     | TiN Ctd  | 1/2         | 3/8        | 16.96:      |
| 0327808  | 1/4      | TiN Ctd  | 5/8         | 3/8        | 16.96:      |
| 0327809  | 3/8      | TiN Ctd  | 3/4         | 3/8        | 19.47:      |
| 0327810  | 1/2      | TiN Ctd  | 1           | 1/2        | 25.52:      |
| 0327811  | 5/8      | TiN Ctd  | 1-3/8       | 5/8        | 36.40:      |
| 0327812  | 3/4      | TiN Ctd  | 1-5/8       | 3/4        | 42.76:      |
| 0327813  | 1        | TiN Ctd  | 2-1/4       | 3/4        | 68.46:      |

## HSS End Mills Cont.



### Niagara Cutter

#### Multi Flute Ball-End HSS End Mill. General Purpose

##### SB470 - Ball-End, Center-Cutting

- Designed for all Materials
- Profile / Slotting / Contour



| Part No. | Diameter | Coating  | Flute Lgth. | Shank Dia. | Price /Each |
|----------|----------|----------|-------------|------------|-------------|
| 0327814  | 1/4      | Uncoated | 5/8         | 3/8        | \$27.33:    |
| 0327815  | 5/16     | Uncoated | 3/4         | 3/8        | 27.33:      |
| 0327816  | 3/8      | Uncoated | 3/4         | 3/8        | 30.61:      |
| 0327817  | 1/2      | Uncoated | 2           | 1/2        | 41.85:      |
| 0327818  | 5/8      | Uncoated | 1-5/8       | 5/8        | 53.95:      |
| 0327819  | 3/4      | Uncoated | 3           | 3/4        | 74.15:      |
| 0327820  | 1        | Uncoated | 2           | 1          | 104.63:     |
| 0327821  | 1/4      | TiN Ctd  | 5/8         | 3/8        | 28.66:      |
| 0327822  | 5/16     | TiN Ctd  | 3/4         | 3/8        | 28.66:      |
| 0327823  | 3/8      | TiN Ctd  | 3/4         | 3/8        | 32.17:      |
| 0327824  | 1/2      | TiN Ctd  | 2           | 1/2        | 43.91:      |
| 0327825  | 5/8      | TiN Ctd  | 1-5/8       | 5/8        | 56.61:      |
| 0327826  | 3/4      | TiN Ctd  | 3           | 3/4        | 77.90:      |
| 0327827  | 1        | TiN Ctd  | 2           | 1          | 109.84:     |

#### 4 Flute Corner Rounding End Mill

##### CRE124



| Part No. | Coating  | Radius  | Shank Dia. | Price /Each |
|----------|----------|---------|------------|-------------|
| 0327828  | Uncoated | 0.03125 | 3/8        | \$33.99:    |
| 0327829  | Uncoated | 0.0625  | 3/8        | 34.35:      |
| 0327830  | Uncoated | 0.09375 | 3/8        | 36.53:      |
| 0327831  | Uncoated | 0.125   | 1/2        | 44.99:      |
| 0327832  | Uncoated | 0.1875  | 1/2        | 55.76:      |
| 0327833  | Uncoated | 0.25    | 1/2        | 62.18:      |
| 0327834  | Uncoated | 0.375   | 1/2        | 86.72:      |
| 0327835  | Uncoated | 0.5     | 3/4        | 101.61:     |
| 0327836  | Uncoated | 0.75    | 3/4        | 139.47:     |
| 0327837  | TiN Ctd  | 0.03125 | 3/8        | 35.68:      |
| 0327838  | TiN Ctd  | 0.0625  | 3/8        | 36.05:      |
| 0327839  | TiN Ctd  | 0.09375 | 3/8        | 38.34:      |
| 0327840  | TiN Ctd  | 0.125   | 1/2        | 47.29:      |
| 0327841  | TiN Ctd  | 0.1875  | 1/2        | 58.55:      |
| 0327842  | TiN Ctd  | 0.25    | 1/2        | 65.32:      |
| 0327843  | TiN Ctd  | 0.375   | 1/2        | 91.09:      |
| 0327844  | TiN Ctd  | 0.5     | 3/4        | 106.68:     |
| 0327845  | TiN Ctd  | 0.75    | 3/4        | 146.48:     |



#### HSS End Mills-Double End CTD Series HD-2

- Maximum space for chip ejection
- Stub length for greater rigidity
- Double end reduces tool cost and down time
- Two flutes have more chip capacity and are designed for deep slotting



| Part No. | Dia. | Decimal | Flute Lgth. | OAL    | Coating | Flutes | Shank Dia. | Price /Each |
|----------|------|---------|-------------|--------|---------|--------|------------|-------------|
| 7007352  | 1/8  | .125    | 3/16        | 2-3/4  | BRIGHT  | 2      | 3/8        | \$13.52     |
| 7007353  | 1/8  | .125    | 3/8         | 3-1/16 | BRIGHT  | 2      | 3/8        | 15.06       |
| 7007354  | 5/32 | .1562   | 15/64       | 2-3/4  | BRIGHT  | 2      | 3/8        | 13.52       |
| 7007355  | 5/32 | .1562   | 7/16        | 3-1/8  | BRIGHT  | 2      | 3/8        | 16.00       |
| 7007356  | 3/16 | .1875   | 9/32        | 2-3/4  | BRIGHT  | 2      | 3/8        | 13.52       |
| 7007357  | 3/16 | .1875   | 7/16        | 3-1/4  | BRIGHT  | 2      | 3/8        | 15.06       |
| 7007358  | 7/32 | .2188   | 21/64       | 2-7/8  | BRIGHT  | 2      | 3/8        | 13.52       |
| 7007359  | 7/32 | .2188   | 1/2         | 3-1/4  | BRIGHT  | 2      | 3/8        | 16.00       |
| 7007360  | 1/4  | .25     | 3/8         | 2-7/8  | BRIGHT  | 2      | 3/8        | 13.52       |
| 7007361  | 1/4  | .25     | 1/2         | 3-3/8  | BRIGHT  | 2      | 3/8        | 15.06       |

| Part No. | Dia.  | Decimal | Flute Lgth. | OAL   | Coating | Flutes | Shank Dia. | Price /Each |
|----------|-------|---------|-------------|-------|---------|--------|------------|-------------|
| 7007362  | 9/32  | .2812   | 9/16        | 3-3/8 | BRIGHT  | 2      | 3/8        | 16.56       |
| 7007363  | 5/16  | .3125   | 9/16        | 3-1/2 | BRIGHT  | 2      | 3/8        | 15.00       |
| 7007364  | 11/32 | .3438   | 9/16        | 3-1/2 | BRIGHT  | 2      | 3/8        | 16.56       |
| 7007365  | 3/8   | .375    | 9/16        | 3-1/2 | BRIGHT  | 2      | 3/8        | 17.40       |
| 7007366  | 13/32 | .4062   | 13/16       | 4-1/8 | BRIGHT  | 2      | 1/2        | 25.17       |
| 7007367  | 7/16  | .4375   | 13/16       | 4-1/8 | BRIGHT  | 2      | 1/2        | 23.95       |
| 7007368  | 15/32 | .4688   | 13/16       | 4-1/8 | BRIGHT  | 2      | 1/2        | 24.97       |
| 7007369  | 1/2   | .5      | 13/16       | 4-1/8 | BRIGHT  | 2      | 1/2        | 22.80       |
| 7007370  | 9/16  | .5625   | 1-1/8       | 5     | BRIGHT  | 2      | 5/8        | 40.95       |
| 7007371  | 5/8   | .625    | 1-1/8       | 5     | BRIGHT  | 2      | 5/8        | 39.56       |
| 7007372  | 3/4   | .75     | 1-5/16      | 5-5/8 | BRIGHT  | 2      | 3/4        | 48.76       |
| 7007373  | 7/8   | .875    | 1-9/16      | 6-1/8 | BRIGHT  | 2      | 7/8        | 62.89       |
| 7007374  | 1     | 1       | 1-5/8       | 6-3/8 | BRIGHT  | 2      | 1          | 77.40       |

#### HSS 2 Flute Double End Mills

- CTD Series HD-2



| Part No. | Size             | Cut Lgth. | Shank Dia. | OAL     | Flutes | Coating | Price /Each |
|----------|------------------|-----------|------------|---------|--------|---------|-------------|
| 7007375  | 1/8" (0.1250")   | 3/8"      | 3/8"       | 3-1/16" | 2      | Bright  | 15.06       |
| 7007376  | 5/32" (0.1562")  | 7/16"     | 3/8"       | 3-1/8"  | 2      | Bright  | 16.00       |
| 7007377  | 3/16" (0.1875")  | 9/32"     | 3/8"       | 2-3/4"  | 2      | Bright  | 13.52       |
| 7007378  | 7/32" (0.2188")  | 21/64"    | 3/8"       | 2-7/8"  | 2      | Bright  | 13.52       |
| 7007379  | 1/4" (0.2500")   | 3/8"      | 3/8"       | 2-7/8"  | 2      | Bright  | 13.52       |
| 7007380  | 9/32" (0.2812")  | 9/16"     | 3/8"       | 3-3/8"  | 2      | Bright  | 16.56       |
| 7007381  | 5/16" (0.3125")  | 9/16"     | 3/8"       | 3-1/2"  | 2      | Bright  | 15.60       |
| 7007382  | 11/32" (0.3438") | 9/16"     | 3/8"       | 3-1/2"  | 2      | Bright  | 16.56       |
| 7007383  | 3/8" (0.3750")   | 9/16"     | 3/8"       | 3-1/2"  | 2      | Bright  | 17.40       |
| 7007384  | 13/32" (0.4062") | 13/16"    | 1/2"       | 4-1/8"  | 2      | Bright  | 25.17       |
| 7007385  | 7/16" (0.4375")  | 13/16"    | 1/2"       | 4-1/8"  | 2      | Bright  | 23.95       |
| 7007386  | 15/32" (0.4688") | 13/16"    | 1/2"       | 4-1/8"  | 2      | Bright  | 24.97       |
| 7007387  | 1/2" (0.5000")   | 13/16"    | 1/2"       | 4-1/8"  | 2      | Bright  | 22.80       |
| 7007388  | 5/8" (0.6250")   | 1-1/8"    | 5/8"       | 5"      | 2      | Bright  | 39.56       |
| 7007389  | 3/4" (0.7500")   | 1-5/16"   | 3/4"       | 5-5/8"  | 2      | Bright  | 48.76       |
| 7007390  | 7/8" (0.8750")   | 1-9/16"   | 7/8"       | 6-1/8"  | 2      | Bright  | 62.89       |
| 7007391  | 1"               | 1-5/8"    | 1"         | 6-3/8"  | 2      | Bright  | 77.40       |

#### HSS 4 Flute Double End Mills

- CTD Series HD-2C
- 4 flutes center cutting
- 4 flutes for smoother finish

| Part No. | Size             | Cut Lgth. | Shank Dia. | OAL     | Flutes | Coating | Price /Each |
|----------|------------------|-----------|------------|---------|--------|---------|-------------|
| 7007409  | 1/8" (0.1250")   | 3/8"      | 3/8"       | 3-1/16" | 4      | Bright  | 18.61       |
| 7007410  | 5/32" (0.1562")  | 7/16"     | 3/8"       | 3-1/8"  | 4      | Bright  | 19.01       |
| 7007411  | 3/16" (0.1875")  | 1/2"      | 3/8"       | 3-1/4"  | 4      | Bright  | 16.90       |
| 7007412  | 7/32" (0.2188")  | 9/16"     | 3/8"       | 3-1/4"  | 4      | Bright  | 17.40       |
| 7007413  | 1/4" (0.2500")   | 5/8"      | 3/8"       | 3-3/8"  | 4      | Bright  | 16.43       |
| 7007414  | 9/32" (0.2812")  | 11/16"    | 3/8"       | 3-3/8"  | 4      | Bright  | 18.03       |
| 7007415  | 5/16" (0.3125")  | 3/4"      | 3/8"       | 3-1/2"  | 4      | Bright  | 16.97       |
| 7007416  | 11/32" (0.3438") | 3/4"      | 3/8"       | 3-1/2"  | 4      | Bright  | 17.53       |
| 7007417  | 3/8" (0.3750")   | 3/4"      | 3/8"       | 3-1/2"  | 4      | Bright  | 16.97       |
| 7007418  | 13/32" (0.4062") | 1"        | 1/2"       | 3-1/4"  | 4      | Bright  | 17.91       |
| 7007419  | 7/16" (0.4375")  | 1"        | 1/2"       | 3-1/4"  | 4      | Bright  | 18.20       |
| 7007420  | 15/32" (0.4688") | 1"        | 1/2"       | 4-1/8"  | 4      | Bright  | 24.84       |
| 7007421  | 1/2" (0.5000")   | 1"        | 1/2"       | 4-1/8"  | 4      | Bright  | 24.84       |
| 7007422  | 5/8" (0.6250")   | 1-3/8"    | 5/8"       | 5"      | 4      | Bright  | 46.46       |
| 7007423  | 3/4" (0.7500")   | 1-5/8"    | 3/4"       | 5-5/8"  | 4      | Bright  | 57.96       |
| 7007424  | 7/8" (0.8750")   | 1-7/8"    | 7/8"       | 6-1/8"  | 4      | Bright  | 68.90       |
| 7007425  | 7/8" (0.8750")   | 1-7/8"    | 1"         | 4-1/8"  | 4      | Bright  | 74.25       |

#### HSS End Mills-Single End CTD Series HG-2

- 2 flute & Center cutting ideal for plunging and machining bottom surfaces



| Part No. | Size             | Cut Lgth. | Shank Dia. | OAL     | Flutes | Coating | Price /Each |
|----------|------------------|-----------|------------|---------|--------|---------|-------------|
| 7007426  | 1/8" (0.1250")   | 3/8"      | 3/8"       | 2-5/16" | 2      | Bright  | 10.33       |
| 7007427  | 5/32" (0.1562")  | 7/16"     | 3/8"       | 2-3/8"  | 2      | Bright  | 10.33       |
| 7007428  | 11/64" (0.1719") | 7/16"     | 3/8"       | 2-3/8"  | 2      | Bright  | 10.33       |
| 7007429  | 3/16" (0.1875")  | 7/16"     | 3/8"       | 2-3/8"  | 2      | Bright  | 10.33       |

The : symbol after a price denotes that it is a Direct Ship Product (DSP) and shipping, availability & lead times may vary.

# HSS End Mills

## HSS End Mills Cont.



End Mills

### HSS End Mills-Single End Cont.

| Part No. | Size             | Cut Lgth. | Shank Dia. | OAL      | Flutes | Coating | Price /Each |
|----------|------------------|-----------|------------|----------|--------|---------|-------------|
| 7007430  | 3/16" (0.1875")  | 1-1/4"    | 3/8"       | 3-1/16"  | 2      | Bright  | 15.95       |
| 7007431  | 13/64" (0.2031") | 1/2"      | 3/8"       | 2-7/16"  | 2      | Bright  | 15.04       |
| 7007432  | 7/32" (0.2188")  | 1/2"      | 3/8"       | 2-7/16"  | 2      | Bright  | 11.68       |
| 7007433  | 15/64" (0.2344") | 1/2"      | 3/8"       | 2-7/16"  | 2      | Bright  | 15.04       |
| 7007434  | 1/4" (0.2500")   | 1/2"      | 3/8"       | 2-7/16"  | 2      | Bright  | 10.33       |
| 7007435  | 1/4" (0.2500")   | 1-1/4"    | 3/8"       | 3-1/16"  | 2      | Bright  | 16.08       |
| 7007436  | 17/64" (0.2656") | 9/16"     | 3/8"       | 2-1/2"   | 2      | Bright  | 15.58       |
| 7007437  | 9/32" (0.2812")  | 9/16"     | 3/8"       | 2-1/2"   | 2      | Bright  | 12.11       |
| 7007438  | 19/64" (0.2969") | 9/16"     | 3/8"       | 2-1/2"   | 2      | Bright  | 15.58       |
| 7007439  | 5/16" (0.3125")  | 9/16"     | 3/8"       | 2-1/2"   | 2      | Bright  | 10.69       |
| 7007440  | 5/16" (0.3125")  | 1-3/8"    | 3/8"       | 3-1/8"   | 2      | Bright  | 16.65       |
| 7007441  | 21/64" (0.3281") | 9/16"     | 3/8"       | 2-1/2"   | 2      | Bright  | 15.58       |
| 7007442  | 11/32" (0.3438") | 9/16"     | 3/8"       | 2-1/2"   | 2      | Bright  | 12.11       |
| 7007443  | 23/64" (0.3594") | 9/16"     | 3/8"       | 2-1/2"   | 2      | Bright  | 15.58       |
| 7007444  | 3/8" (0.3750")   | 9/16"     | 3/8"       | 2-1/2"   | 2      | Bright  | 10.69       |
| 7007445  | 3/8" (0.3750")   | 1-1/2"    | 3/8"       | 3-1/4"   | 2      | Bright  | 16.74       |
| 7007446  | 25/64" (0.3906") | 13/16"    | 3/8"       | 2-11/16" | 2      | Bright  | 21.67       |
| 7007447  | 13/32" (0.4062") | 13/16"    | 3/8"       | 2-11/16" | 2      | Bright  | 15.67       |
| 7007448  | 27/64" (0.4219") | 13/16"    | 3/8"       | 2-11/16" | 2      | Bright  | 20.12       |
| 7007449  | 7/16" (0.4375")  | 13/16"    | 3/8"       | 2-11/16" | 2      | Bright  | 15.08       |
| 7007450  | 7/16" (0.4375")  | 1-3/4"    | 1/2"       | 3-1/4"   | 2      | Bright  | 20.50       |
| 7007451  | 29/64" (0.4531") | 13/16"    | 1/2"       | 3-1/4"   | 2      | Bright  | 21.37       |
| 7007452  | 15/32" (0.4688") | 13/16"    | 1/2"       | 3-1/4"   | 2      | Bright  | 17.34       |
| 7007453  | 31/64" (0.4844") | 13/16"    | 1/2"       | 3-1/4"   | 2      | Bright  | 21.17       |
| 7007454  | 1/2" (0.5000")   | 13/16"    | 3/8"       | 2-11/16" | 2      | Bright  | 15.08       |
| 7007455  | 1/2" (0.5000")   | 1"        | 1/2"       | 3-1/4"   | 2      | Bright  | 15.63       |
| 7007456  | 1/2" (0.5000")   | 2"        | 1/2"       | 4"       | 2      | Bright  | 20.99       |
| 7007457  | 17/32" (0.5313") | 1-1/8"    | 1/2"       | 3-3/8"   | 2      | Bright  | 25.68       |
| 7007458  | 9/16" (0.5625")  | 1-1/8"    | 1/2"       | 3-3/8"   | 2      | Bright  | 22.41       |
| 7007459  | 9/16" (0.5625")  | 2"        | 5/8"       | 4-5/8"   | 2      | Bright  | 34.27       |
| 7007460  | 19/32" (0.5938") | 1-1/8"    | 1/2"       | 3-3/8"   | 2      | Bright  | 28.11       |
| 7007461  | 5/8" (0.6250")   | 1-5/16"   | 5/8"       | 3-1/4"   | 2      | Bright  | 25.77       |
| 7007462  | 5/8" (0.6250")   | 2"        | 5/8"       | 4-5/8"   | 2      | Bright  | 30.74       |
| 7007463  | 11/16" (0.6875") | 1-5/16"   | 1/2"       | 3-5/8"   | 2      | Bright  | 26.46       |
| 7007464  | 3/4" (0.7500")   | 1-5/16"   | 5/8"       | 3-1/4"   | 2      | Bright  | 29.61       |
| 7007465  | 3/4" (0.7500")   | 1-5/16"   | 3/4"       | 3-7/8"   | 2      | Bright  | 29.61       |
| 7007466  | 3/4" (0.7500")   | 1-5/16"   | 1/2"       | 3-5/8"   | 2      | Bright  | 29.12       |
| 7007467  | 3/4" (0.7500")   | 2-1/4"    | 3/4"       | 5-1/4"   | 2      | Bright  | 43.14       |
| 7007468  | 13/16" (0.8125") | 2-1/2"    | 7/8"       | 5-1/4"   | 2      | Bright  | 38.28       |
| 7007469  | 7/8" (0.8750")   | 1-1/2"    | 7/8"       | 4-1/8"   | 2      | Bright  | 37.08       |
| 7007470  | 7/8" (0.8750")   | 2-1/2"    | 7/8"       | 5-3/4"   | 2      | Bright  | 48.18       |
| 7007471  | 15/16" (0.9375") | 3"        | 1"         | 6-1/2"   | 2      | Bright  | 74.17       |
| 7007472  | 1"               | 1-1/2"    | 3/4"       | 4-1/8"   | 2      | Bright  | 40.35       |
| 7007473  | 1"               | 1-5/8"    | 1"         | 4-1/2"   | 2      | Bright  | 45.63       |
| 7007474  | 1"               | 3"        | 1"         | 6-1/2"   | 2      | Bright  | 78.08       |
| 7007475  | 1-1/8" (1.1250") | 1-5/8"    | 1"         | 4-1/2"   | 2      | Bright  | 67.73       |
| 7007476  | 1-1/4" (1.2500") | 1-5/8"    | 1-1/4"     | 4-1/2"   | 2      | Bright  | 74.43       |
| 7007477  | 1-1/4" (1.2500") | 3"        | 1"         | 6-1/2"   | 2      | Bright  | 100.09      |
| 7007478  | 1-1/4" (1.2500") | 3"        | 1-1/4"     | 6-1/2"   | 2      | Bright  | 108.14      |
| 7007479  | 1-3/8" (1.3750") | 1-5/8"    | 1"         | 4-1/2"   | 2      | Bright  | 86.45       |
| 7007480  | 1-1/2" (1.5000") | 1-5/8"    | 1-1/4"     | 4-1/2"   | 2      | Bright  | 96.68       |
| 7007481  | 1-1/2" (1.5000") | 3"        | 1-1/4"     | 6-1/2"   | 2      | Bright  | 154.86      |
| 7007482  | 1-5/8" (1.6250") | 3"        | 1-1/4"     | 6-1/2"   | 2      | Bright  | 156.78      |
| 7007483  | 1-3/4" (1.7500") | 1-5/8"    | 1-1/4"     | 4-1/2"   | 2      | Bright  | 117.11      |
| 7007484  | 1-3/4" (1.7500") | 3"        | 1-1/4"     | 6-1/2"   | 2      | Bright  | 169.70      |
| 7007485  | 2"               | 1-5/8"    | 1-1/4"     | 4-1/2"   | 2      | Bright  | 139.01      |
| 7007486  | 2"               | 2"        | 2"         | 5-3/4"   | 2      | Bright  | 148.32      |
| 7007487  | 2"               | 3"        | 2"         | 6-3/4"   | 2      | Bright  | 219.92      |
| 7007488  | 2"               | 4"        | 2"         | 7-3/4"   | 2      | Bright  | 182.90      |
| 7007489  | 2"               | 6"        | 2"         | 9-3/4"   | 2      | Bright  | 234.01      |

### HSS End Mills-Single End CTD HG-3

- 3 flute center cutting

| Part No. | Size             | Cut Lgth. | Shank Dia. | OAL     | Flutes | Coating | Price /Each |
|----------|------------------|-----------|------------|---------|--------|---------|-------------|
| 7007507  | 1/8" (0.1250")   | 3/8"      | 3/8"       | 2-5/16" | 3      | Bright  | 15.61       |
| 7007508  | 3/16" (0.1875")  | 1/2"      | 3/8"       | 2-3/8"  | 3      | Bright  | 15.61       |
| 7007509  | 3/16" (0.1875")  | 1-1/4"    | 3/8"       | 3-1/16" | 3      | Bright  | 18.03       |
| 7007510  | 1/4" (0.2500")   | 5/8"      | 3/8"       | 2-7/16" | 3      | Bright  | 15.61       |
| 7007511  | 1/4" (0.2500")   | 1-1/4"    | 3/8"       | 3-1/16" | 3      | Bright  | 23.22       |
| 7007512  | 5/16" (0.3125")  | 3/4"      | 3/8"       | 2-1/2"  | 3      | Bright  | 16.15       |
| 7007513  | 5/16" (0.3125")  | 1-3/8"    | 3/8"       | 3-1/8"  | 3      | Bright  | 24.00       |
| 7007514  | 3/8" (0.3750")   | 3/4"      | 3/8"       | 2-1/2"  | 3      | Bright  | 22.17       |
| 7007515  | 3/8" (0.3750")   | 1-1/2"    | 3/8"       | 3-1/4"  | 3      | Bright  | 24.30       |
| 7007516  | 7/16" (0.4375")  | 1-3/4"    | 1/2"       | 3-1/4"  | 3      | Bright  | 25.58       |
| 7007517  | 1-1/4" (1.2500") | 2"        | 1/2"       | 4-1/2"  | 3      | Bright  | 27.20       |
| 7007518  | 1/2" (0.5000")   | 2"        | 1/2"       | 4"      | 3      | Bright  | 28.67       |
| 7007519  | 3/4" (0.7500")   | 2-1/4"    | 5/8"       | 4-1/2"  | 3      | TICN    | 33.31       |
| 7007520  | 5/8" (0.6250")   | 2-1/2"    | 5/8"       | 4-5/8"  | 3      | Bright  | 38.99       |
| 7007521  | 3/4" (0.7500")   | 1-5/8"    | 3/4"       | 3-7/8"  | 3      | Bright  | 38.99       |
| 7007522  | 3/4" (0.7500")   | 3"        | 3/4"       | 5-1/4"  | 3      | Bright  | 47.45       |
| 7007426  | 1/8" (0.1250")   | 3/8"      | 3/8"       | 2-5/16" | 2      | Bright  | 10.33       |

### HSS End Mills-Ball Nose

- CTD Series HG-2B
- 2 flutes allow maximum space for chip ejection
- Radius for contouring part surface
- Plunge and side cutting

| Part No. | Size             | Cut Lgth. | Shank Dia. | OAL     | Flutes | Coating | Price /Each |
|----------|------------------|-----------|------------|---------|--------|---------|-------------|
| 7007490  | 1/8" (0.1250")   | 3/8"      | 3/8"       | 2-5/16" | 2      | Bright  | 15.13       |
| 7007491  | 3/16" (0.1875")  | 1/2"      | 3/8"       | 2-3/8"  | 2      | Bright  | 15.13       |
| 7007492  | 1/4" (0.2500")   | 5/8"      | 3/8"       | 2-7/16" | 2      | Bright  | 14.45       |
| 7007493  | 5/16" (0.3125")  | 3/4"      | 3/8"       | 2-1/2"  | 2      | Bright  | 14.94       |
| 7007494  | 3/8" (0.3750")   | 3/4"      | 3/8"       | 2-1/2"  | 2      | Bright  | 14.94       |
| 7007495  | 7/16" (0.4375")  | 1"        | 1/2"       | 3-1/4"  | 2      | Bright  | 22.93       |
| 7007496  | 1/2" (0.5000")   | 1"        | 1/2"       | 3-1/4"  | 2      | Bright  | 22.93       |
| 7007497  | 9/16" (0.5625")  | 1-1/8"    | 1/2"       | 3-3/8"  | 2      | Bright  | 33.82       |
| 7007498  | 5/8" (0.6250")   | 1-1/8"    | 1/2"       | 3-3/8"  | 2      | Bright  | 38.68       |
| 7007499  | 5/8" (0.6250")   | 1-3/8"    | 5/8"       | 3-1/4"  | 2      | Bright  | 38.68       |
| 7007500  | 3/4" (0.7500")   | 1-5/16"   | 1/2"       | 3-5/8"  | 2      | Bright  | 45.63       |
| 7007501  | 3/4" (0.7500")   | 1-5/8"    | 3/4"       | 3-7/8"  | 2      | Bright  | 45.63       |
| 7007502  | 7/8" (0.8750")   | 2"        | 7/8"       | 4-1/8"  | 2      | Bright  | 57.29       |
| 7007503  | 1"               | 2-1/4"    | 1"         | 4-1/2"  | 2      | Bright  | 67.64       |
| 7007504  | 1-1/8" (1.1250") | 2-1/4"    | 1"         | 4-1/2"  | 2      | Bright  | 90.16       |
| 7007505  | 1-1/4" (1.2500") | 2-1/2"    | 1-1/4"     | 4-1/2"  | 2      | Bright  | 77.09       |
| 7007506  | 1-1/2" (1.5000") | 2-1/2"    | 1-1/4"     | 4-1/2"  | 2      | Bright  | 97.69       |

### High Helix CTD HGA-2

- 2 flute, high helix designed for aluminum
- 37° helix for faster chip ejection
- Titanium Carbonitride (TiCN) coating provides hardness and more wear resistance
- Center cutting ideal for plunging and machining bottom surfaces

| Part No. | Size             | Cut Lgth. | Shank Dia. | OAL     | Flutes | Coating | Price /Each |
|----------|------------------|-----------|------------|---------|--------|---------|-------------|
| 7007599  | 1/4" (0.2500")   | 5/8"      | 3/8"       | 2-7/16" | 2      | TICN    | 16.16       |
| 7007600  | 1/4" (0.2500")   | 1-1/4"    | 3/8"       | 3-1/16" | 2      | TICN    | 21.67       |
| 7007601  | 5/16" (0.3125")  | 3/4"      | 3/8"       | 2-1/2"  | 2      | TICN    | 16.60       |
| 7007602  | 5/16" (0.3125")  | 4-1/2"    | 1-3/8"     | 3-1/8"  | 2      | TICN    | 19.98       |
| 7007603  | 3/8" (0.3750")   | 3/4"      | 3/8"       | 2-1/2"  | 2      | TICN    | 16.60       |
| 7007604  | 3/8" (0.3750")   | 1-1/2"    | 3/8"       | 3-1/4"  | 2      | TICN    | 20.50       |
| 7007605  | 7/16" (0.4375")  | 1-3/4"    | 1/2"       | 3-1/4"  | 2      | TICN    | 27.75       |
| 7007606  | 1/2" (0.5000")   | 1-1/4"    | 1/2"       | 3-1/4"  | 2      | TICN    | 23.79       |
| 7007607  | 1/2" (0.5000")   | 2"        | 1/2"       | 4"      | 2      | TICN    | 28.36       |
| 7007608  | 5/8" (0.6250")   | 1-5/8"    | 5/8"       | 3-1/4"  | 2      | TICN    | 31.97       |
| 7007609  | 5/8" (0.6250")   | 2-1/2"    | 5/8"       | 4-5/8"  | 2      | TICN    | 39.33       |
| 7007610  | 3/4" (0.7500")   | 1-5/8"    | 3/4"       | 3-7/8"  | 2      | TICN    | 35.16       |
| 7007611  | 3/4" (0.7500")   | 3"        | 3/4"       | 5-1/4"  | 2      | TICN    | 51.01       |
| 7007612  | 7/8" (0.8750")   | 1-7/8"    | 7/8"       | 4-1/8"  | 2      | TICN    | 50.02       |
| 7007613  | 7/8" (0.8750")   | 3-1/2"    | 7/8"       | 5-3/4"  | 2      | TICN    | 69.60       |
| 7007614  | 1"               | 2"        | 1"         | 4-1/2"  | 2      | TICN    | 57.65       |
| 7007615  | 1"               | 4"        | 1"         | 6-1/2"  | 2      | TICN    | 87.75       |
| 7007616  | 1-1/4" (1.2500") | 2"        | 1-1/4"     | 4-1/2"  | 2      | TICN    | 89.58       |
| 7007617  | 1-1/4" (1.2500") | 4"        | 1-1/4"     | 6-1/2"  | 2      | TICN    | 124.18      |
| 7007618  | 1-1/2" (1.5000") | 2"        | 1-1/4"     | 4-1/2"  | 2      | TICN    | 116.57      |

# HSS END MILLS, POWDERED METAL END MILLS

## HSS End Mills Cont.



### HSS End Mills Center Cut-Single End



| Part No. | Size             | Cut Lgth. | Shank Dia. | OAL    | Flutes | Coating | Price /Each |
|----------|------------------|-----------|------------|--------|--------|---------|-------------|
| 7007553  | 5/8" (0.6250")   | 1-5/8"    | 5/8"       | 3-1/4" | 4      | Bright  | 30.08       |
| 7007554  | 5/8" (0.6250")   | 2-1/2"    | 5/8"       | 4-5/8" | 4      | Bright  | 38.31       |
| 7007555  | 5/8" (0.6250")   | 4"        | 5/8"       | 6-1/8" | 4      | Bright  | 45.21       |
| 7007556  | 3/4" (0.7500")   | 1-5/8"    | 3/4"       | 3-7/8" | 4      | Bright  | 35.44       |
| 7007557  | 3/4" (0.7500")   | 3"        | 3/4"       | 5-1/4" | 4      | Bright  | 46.89       |
| 7007558  | 3/4" (0.7500")   | 4"        | 3/4"       | 6-1/4" | 4      | Bright  | 54.43       |
| 7007559  | 7/8" (0.8750")   | 1-7/8"    | 3/4"       | 4-1/8" | 4      | Bright  | 49.07       |
| 7007560  | 7/8" (0.8750")   | 1-7/8"    | 7/8"       | 4-1/8" | 4      | Bright  | 43.87       |
| 7007561  | 1"               | 1-7/8"    | 3/4"       | 4-1/8" | 4      | Bright  | 53.78       |
| 7007562  | 1"               | 2"        | 1"         | 4-1/2" | 4      | Bright  | 53.78       |
| 7007563  | 1"               | 4"        | 1"         | 6-1/2" | 4      | Bright  | 78.82       |
| 7007564  | 1"               | 6"        | 1"         | 8-1/2" | 4      | Bright  | 96.03       |
| 7007565  | 1-1/8" (1.1250") | 2"        | 1"         | 4-1/2" | 4      | Bright  | 74.70       |
| 7007566  | 1-1/8" (1.1250") | 4"        | 1"         | 6-1/2" | 4      | Bright  | 92.70       |
| 7007567  | 1-1/4" (1.2500") | 2"        | 1"         | 4-1/2" | 4      | Bright  | 82.71       |
| 7007568  | 1-1/4" (1.2500") | 2"        | 1-1/4"     | 4-1/2" | 4      | Bright  | 82.71       |
| 7007569  | 1-1/4" (1.2500") | 4"        | 1"         | 6-1/2" | 4      | Bright  | 106.48      |
| 7007570  | 1-1/4" (1.2500") | 4"        | 1-1/4"     | 6-1/2" | 4      | Bright  | 106.48      |
| 7007571  | 1-1/4" (1.2500") | 6"        | 1-1/4"     | 8-1/2" | 4      | Bright  | 127.78      |
| 7007572  | 1-3/8" (1.3750") | 2"        | 1"         | 4-1/2" | 4      | Bright  | 98.04       |
| 7007573  | 1-1/2" (1.5000") | 2"        | 1-1/4"     | 4-1/2" | 4      | Bright  | 108.43      |
| 7007574  | 1-1/2" (1.5000") | 4"        | 1-1/4"     | 6-1/2" | 4      | Bright  | 134.71      |
| 7007575  | 1-3/4" (1.7500") | 2"        | 1-1/4"     | 4-1/2" | 4      | Bright  | 125.01      |
| 7007576  | 1-3/4" (1.7500") | 4"        | 1-1/4"     | 6-1/2" | 4      | Bright  | 170.69      |
| 7007577  | 2"               | 2"        | 1-1/4"     | 4-1/2" | 4      | Bright  | 155.66      |
| 7007578  | 2"               | 4"        | 1-1/4"     | 6-1/2" | 4      | Bright  | 208.33      |

### HSS Ball Nose End Mills-Single End CTD Series HG-4B

- 4 flutes ball nose
- Radius for contouring part surfaces
- Plunge and side cutting



| Part No. | Size             | Cut Lgth. | Shank Dia. | OAL     | Flutes | Coating | Price /Each |
|----------|------------------|-----------|------------|---------|--------|---------|-------------|
| 7007523  | 1/4" (0.2500")   | 5/8"      | 3/8"       | 2-7/16" | 4      | Bright  | 14.45       |
| 7007524  | 1/4" (0.2500")   | 1-1/4"    | 3/8"       | 3-1/16" | 4      | Bright  | 28.67       |
| 7007525  | 1/4" (0.2500")   | 1-3/4"    | 3/8"       | 3-9/16" | 4      | Bright  | 29.54       |
| 7007526  | 5/16" (0.3125")  | 3/4"      | 3/8"       | 2-1/2"  | 4      | Bright  | 28.17       |
| 7007527  | 5/16" (0.3125")  | 1-3/8"    | 3/8"       | 3-1/8"  | 4      | Bright  | 32.38       |
| 7007528  | 5/16" (0.3125")  | 2"        | 3/8"       | 3-1/4"  | 4      | Bright  | 33.30       |
| 7007529  | 3/8" (0.3750")   | 3/4"      | 3/8"       | 2-1/2"  | 4      | Bright  | 25.08       |
| 7007530  | 3/8" (0.3750")   | 1-1/2"    | 3/8"       | 3-1/4"  | 4      | Bright  | 33.89       |
| 7007531  | 3/8" (0.3750")   | 2-1/2"    | 3/8"       | 4-1/4"  | 4      | Bright  | 37.24       |
| 7007532  | 1/2" (0.5000")   | 1-1/4"    | 1/2"       | 3-1/4"  | 4      | Bright  | 33.33       |
| 7007533  | 1/2" (0.5000")   | 2"        | 1/2"       | 4"      | 4      | Bright  | 39.72       |
| 7007534  | 1/2" (0.5000")   | 3"        | 1/2"       | 5"      | 4      | Bright  | 52.21       |
| 7007535  | 5/8" (0.6250")   | 1-5/8"    | 5/8"       | 3-1/4"  | 4      | Bright  | 61.51       |
| 7007536  | 5/8" (0.6250")   | 2-1/2"    | 5/8"       | 4-5/8"  | 4      | Bright  | 69.82       |
| 7007537  | 5/8" (0.6250")   | 4"        | 5/8"       | 6-1/8"  | 4      | Bright  | 86.49       |
| 7007538  | 3/4" (0.7500")   | 1-5/8"    | 3/4"       | 3-7/8"  | 4      | Bright  | 69.42       |
| 7007539  | 3/4" (0.7500")   | 3"        | 3/4"       | 5-1/4"  | 4      | Bright  | 85.30       |
| 7007540  | 3/4" (0.7500")   | 4"        | 3/4"       | 6-1/4"  | 4      | Bright  | 107.26      |
| 7007541  | 7/8" (0.8750")   | 1-7/8"    | 7/8"       | 4-1/8"  | 4      | Bright  | 77.96       |
| 7007542  | 1"               | 2"        | 1"         | 4-1/2"  | 4      | Bright  | 117.47      |
| 7007543  | 1"               | 4"        | 1"         | 6-1/2"  | 4      | Bright  | 137.11      |
| 7007544  | 1"               | 6"        | 1"         | 8-1/2"  | 4      | Bright  | 169.89      |
| 7007545  | 1-1/4" (1.2500") | 2"        | 1-1/4"     | 4-1/2"  | 4      | Bright  | 136.76      |
| 7007546  | 1-1/4" (1.2500") | 4"        | 1-1/4"     | 6-1/2"  | 4      | Bright  | 214.72      |
| 7007547  | 1-1/4" (1.2500") | 6"        | 1-1/4"     | 8-1/2"  | 4      | Bright  | 232.74      |
| 7007548  | 1-1/2" (1.5000") | 2"        | 1-1/4"     | 4-1/2"  | 4      | Bright  | 203.42      |
| 7007549  | 1-1/2" (1.5000") | 4"        | 1-1/4"     | 6-1/2"  | 4      | Bright  | 223.49      |
| 7007550  | 2"               | 3"        | 2"         | 6-3/4"  | 4      | Bright  | 322.79      |
| 7007551  | 2"               | 4"        | 2"         | 7-3/4"  | 4      | Bright  | 335.57      |
| 7007552  | 2"               | 6"        | 2"         | 9-3/4"  | 4      | Bright  | 391.48      |

### HSS End Mills High Helix, Single End CTD HGA-2

| Part No. | Size             | Cut Lgth. | Shank Dia. | OAL     | Flutes | Coating | Price /Each |
|----------|------------------|-----------|------------|---------|--------|---------|-------------|
| 7007579  | 1/4" (0.2500")   | 5/8"      | 3/8"       | 2-7/16" | 2      | Bright  | 13.75       |
| 7007580  | 1/4" (0.2500")   | 1-1/4"    | 3/8"       | 3-1/16" | 2      | Bright  | 18.36       |
| 7007581  | 5/16" (0.3125")  | 3/4"      | 3/8"       | 2-1/2"  | 2      | Bright  | 14.22       |
| 7007582  | 5/16" (0.3125")  | 1-3/8"    | 3/8"       | 3-1/8"  | 2      | Bright  | 18.67       |
| 7007583  | 3/8" (0.3750")   | 3/4"      | 3/8"       | 2-1/2"  | 2      | Bright  | 14.22       |
| 7007584  | 3/8" (0.3750")   | 1-1/2"    | 3/8"       | 3-1/4"  | 2      | Bright  | 17.21       |
| 7007585  | 7/16" (0.4375")  | 1-3/4"    | 1/2"       | 3-1/4"  | 2      | Bright  | 23.59       |
| 7007586  | 1/2" (0.5000")   | 1-1/4"    | 1/2"       | 3-1/4"  | 2      | Bright  | 19.92       |
| 7007587  | 1/2" (0.5000")   | 2"        | 1/2"       | 4"      | 2      | Bright  | 24.48       |
| 7007588  | 5/8" (0.6250")   | 1-5/8"    | 5/8"       | 3-1/4"  | 2      | Bright  | 26.38       |
| 7007589  | 5/8" (0.6250")   | 2-1/2"    | 5/8"       | 4-5/8"  | 2      | Bright  | 33.24       |
| 7007590  | 3/4" (0.7500")   | 1-5/8"    | 3/4"       | 3-7/8"  | 2      | Bright  | 29.97       |
| 7007591  | 3/4" (0.7500")   | 3"        | 3/4"       | 5-1/4"  | 2      | Bright  | 42.78       |
| 7007592  | 7/8" (0.8750")   | 1-7/8"    | 7/8"       | 4-1/8"  | 2      | Bright  | 43.02       |
| 7007593  | 7/8" (0.8750")   | 3-1/2"    | 7/8"       | 5-3/4"  | 2      | Bright  | 58.77       |
| 7007594  | 1"               | 2"        | 1"         | 4-1/2"  | 2      | Bright  | 49.19       |
| 7007595  | 1"               | 4"        | 1"         | 6-1/2"  | 2      | Bright  | 74.28       |
| 7007596  | 1-1/4" (1.2500") | 2"        | 1-1/4"     | 4-1/2"  | 2      | Bright  | 76.81       |
| 7007597  | 1-1/4" (1.2500") | 4"        | 1-1/4"     | 6-1/2"  | 2      | Bright  | 104.76      |
| 7007598  | 1-1/2" (1.5000") | 2"        | 1-1/4"     | 4-1/2"  | 2      | Bright  | 99.84       |

### Powdered Metal End Mills



### Coarse Roughing End Mill - Powdered Metal-TiCN

- CTD Series PMRC
- Multi-flute Non-center cutting
- Powered metal for hard materials
- Titanium carbonitride (TiCN) coating provides a harder surface with more wear resistance.



| Part No. | Size           | Cut Lgth. | Shank Dia. | OAL    | Flutes | Coating | Price /Each |
|----------|----------------|-----------|------------|--------|--------|---------|-------------|
| 7007755  | 1/2" (0.5000") | 1/2"      | 1/2"       | 2-1/2" | 4      | TiCN    | 62.44       |
| 7007756  | 1/2" (0.5000") | 1-1/4"    | 1/2"       | 3-1/4" | 4      | TiCN    | 65.32       |
| 7007757  | 1/2" (0.5000") | 2"        | 1/2"       | 4"     | 4      | TiCN    | 67.59       |
| 7007758  | 5/8" (0.6250") | 5/8"      | 5/8"       | 2-3/4" | 4      | TiCN    | 64.89       |
| 7007759  | 5/8" (0.6250") | 1-5/8"    | 5/8"       | 3-3/4" | 4      | TiCN    | 65.72       |
| 7007760  | 5/8" (0.6250") | 2-1/2"    | 5/8"       | 4-5/8" | 4      | TiCN    | 82.98       |
| 7007761  | 3/4" (0.7500") | 3/4"      | 3/4"       | 3"     | 4      | TiCN    | 93.61       |
| 7007762  | 3/4" (0.7500") | 1-5/8"    | 3/4"       | 3-7/8" | 4      | TiCN    | 99.07       |
| 7007763  | 3/4" (0.7500") | 3"        | 3/4"       | 5-1/4" | 4      | TiCN    | 125.51      |
| 7007764  | 7/8" (0.8750") | 7/8"      | 7/8"       | 3-1/8" | 5      | TiCN    | 136.96      |
| 7007765  | 1"             | 1"        | 1"         | 3-1/2" | 5      | TiCN    | 147.49      |
| 7007766  | 1"             | 2"        | 1"         | 4-1/2" | 5      | TiCN    | 153.74      |
| 7007767  | 1"             | 3"        | 1"         | 5-1/2" | 5      | TiCN    | 160.27      |
| 7007768  | 1"             | 4"        | 1"         | 6-1/2" | 5      | TiCN    | 171.22      |

### Coarse Roughing End Mill - Powdered Metal-Bright

- CTD Series PMRC
- Multi-flute Non-center cutting
- Powered metal for hard materials



| Part No. | Size           | Cut Lgth. | Shank Dia. | OAL    | Flutes | Coating | Price /Each |
|----------|----------------|-----------|------------|--------|--------|---------|-------------|
| 7007769  | 1/2" (0.5000") | 1/2"      | 1/2"       | 2-1/2" | 4      | Bright  | 52.49       |
| 7007770  | 5/8" (0.6250") | 5/8"      | 5/8"       | 2-3/4" | 4      | Bright  | 55.35       |
| 7007771  | 3/4" (0.7500") | 3/4"      | 3/4"       | 3"     | 4      | Bright  | 79.38       |
| 7007772  | 7/8" (0.8750") | 7/8"      | 7/8"       | 3-1/8" | 5      | Bright  | 118.29      |
| 7007773  | 1"             | 1"        | 1"         | 3-1/2" | 5      | Bright  | 125.30      |
| 7007774  | 1"             | 2"        | 1"         | 4-1/2" | 5      | Bright  | 130.44      |
| 7007775  | 1/2" (0.5000") | 1-1/4"    | 1/2"       | 3-1/4" | 4      | Bright  | 54.72       |
| 7007776  | 5/8" (0.6250") | 1-5/8"    | 5/8"       | 3-3/4" | 4      | Bright  | 56.75       |
| 7007777  | 3/4" (0.7500") | 1-5/8"    | 3/4"       | 3-7/8" | 4      | Bright  | 82.48       |
| 7007778  | 3/4" (0.7500") | 3"        | 3/4"       | 5-1/4" | 4      | Bright  | 106.94      |
| 7007779  | 1"             | 3"        | 1"         | 5-1/2" | 5      | Bright  | 135.12      |
| 7007780  | 1"             | 4"        | 1"         | 6-1/2" | 5      | Bright  | 145.87      |

The : symbol after a price denotes that it is a Direct Ship Product (DSP) and shipping, availability & lead times may vary.



# POWDERED METAL END MILLS

## Powdered Metal End Mills Cont.



End Mills

### Fine Roughing End Mill - Powdered Metal - Bright

- CTD Series PMRF-C
- Multi-Flute center cutting
- Powdered metal for hard material
- Center cutting ideal for plunging



| Part No. | Size           | Cut Lgth. | Shank Dia. | OAL    | Flutes | Coating | Price /Each |
|----------|----------------|-----------|------------|--------|--------|---------|-------------|
| 7007781  | 1/2" (0.5000") | 1-1/4"    | 1/2"       | 3-1/4" | 4      | Bright  | 58.12       |
| 7007782  | 5/8" (0.6250") | 1-5/8"    | 5/8"       | 3-3/4" | 4      | Bright  | 75.88       |
| 7007783  | 3/4" (0.7500") | 1-5/8"    | 3/4"       | 3-7/8" | 4      | Bright  | 95.13       |
| 7007784  | 7/8" (0.8750") | 1-7/8"    | 7/8"       | 4-1/8" | 5      | Bright  | 82.51       |
| 7007785  | 1"             | 2"        | 1"         | 4-1/2" | 5      | Bright  | 145.57      |
| 7007786  | 3/4" (0.7500") | 2-1/4"    | 3/4"       | 4-1/2" | 4      | Bright  | 119.68      |
| 7007787  | 1"             | 3"        | 1"         | 5-1/2" | 5      | Bright  | 173.43      |
| 7007788  | 1/2" (0.5000") | 2"        | 1/2"       | 4"     | 4      | Bright  | 78.61       |
| 7007789  | 5/8" (0.6250") | 2-1/2"    | 5/8"       | 4-5/8" | 4      | Bright  | 98.51       |
| 7007790  | 3/4" (0.7500") | 3"        | 3/4"       | 5-1/4" | 4      | Bright  | 124.99      |
| 7007791  | 7/8" (0.8750") | 3-1/2"    | 7/8"       | 5-3/4" | 5      | Bright  | 161.15      |
| 7007792  | 1"             | 4"        | 1"         | 6-1/2" | 5      | Bright  | 196.81      |

### Fine Roughing End Mill - Powdered Metal - TiCN

- CTD Series PMRF-C
- Multi-Flute center cutting
- Powdered metal for hard material.
- Center cutting ideal for plunging.
- Titanium Carbonitride (TiCN) coating provides a harder surface with more wear resistance.



| Part No. | Size           | Cut Lgth. | Shank Dia. | OAL    | Flutes | Coating | Price /Each |
|----------|----------------|-----------|------------|--------|--------|---------|-------------|
| 7007793  | 1/2" (0.5000") | 1-1/4"    | 1/2"       | 3-1/4" | 4      | TiCN    | 65.10       |
| 7007794  | 5/8" (0.6250") | 1-5/8"    | 5/8"       | 3-3/4" | 4      | TiCN    | 83.46       |
| 7007795  | 3/4" (0.7500") | 1-5/8"    | 3/4"       | 3-7/8" | 4      | TiCN    | 103.71      |
| 7007796  | 7/8" (0.8750") | 1-7/8"    | 7/8"       | 4-1/8" | 5      | TiCN    | 91.58       |
| 7007797  | 1"             | 2"        | 1"         | 4-1/2" | 5      | TiCN    | 163.06      |
| 7007798  | 3/4" (0.7500") | 2-1/4"    | 3/4"       | 4-1/2" | 4      | TiCN    | 131.65      |
| 7007799  | 1"             | 3"        | 1"         | 5-1/2" | 5      | TiCN    | 192.51      |
| 7007800  | 1/2" (0.5000") | 2"        | 1/2"       | 4"     | 4      | TiCN    | 85.71       |
| 7007801  | 5/8" (0.6250") | 2-1/2"    | 5/8"       | 4-5/8" | 4      | TiCN    | 110.32      |
| 7007802  | 3/4" (0.7500") | 3"        | 3/4"       | 5-1/4" | 4      | TiCN    | 139.98      |
| 7007803  | 7/8" (0.8750") | 3-1/2"    | 7/8"       | 5-3/4" | 5      | TiCN    | 177.26      |
| 7007804  | 1"             | 4"        | 1"         | 6-1/2" | 5      | TiCN    | 214.52      |

### High Helix End Mill Single End - Powdered Metal - Bright

- CTD Series PM-539
- 3 flute center cutting
- High helix for aluminum

| Part No. | Size             | Cut Lgth. | Shank Dia. | OAL    | Flutes | Coating | Price /Each |
|----------|------------------|-----------|------------|--------|--------|---------|-------------|
| 7007832  | 3/8" (0.3750")   | 3/4"      | 3/8"       | 2-1/2" | 3      | Bright  | 23.27       |
| 7007833  | 3/8" (0.3750")   | 1-1/2"    | 3/8"       | 3-1/4" | 3      | Bright  | 26.80       |
| 7007834  | 1/2" (0.5000")   | 1-1/4"    | 1/2"       | 3-1/4" | 3      | Bright  | 31.37       |
| 7007835  | 1/2" (0.5000")   | 2"        | 1/2"       | 4"     | 3      | Bright  | 36.10       |
| 7007836  | 5/8" (0.6250")   | 1-5/8"    | 5/8"       | 3-7/8" | 3      | Bright  | 43.04       |
| 7007837  | 5/8" (0.6250")   | 2-1/2"    | 5/8"       | 4-5/8" | 3      | Bright  | 49.57       |
| 7007838  | 3/4" (0.7500")   | 1-5/8"    | 3/4"       | 3-3/4" | 3      | Bright  | 45.14       |
| 7007839  | 3/4" (0.7500")   | 2-1/4"    | 3/4"       | 4-1/2" | 3      | Bright  | 52.80       |
| 7007840  | 1"               | 2"        | 1"         | 4-1/2" | 3      | Bright  | 72.43       |
| 7007841  | 1"               | 3"        | 1"         | 5-1/2" | 3      | Bright  | 89.43       |
| 7007842  | 1-1/4" (1.2500") | 2"        | 1-1/4"     | 4-1/2" | 3      | Bright  | 119.66      |
| 7007843  | 1-1/4" (1.2500") | 3"        | 1-1/4"     | 5-1/2" | 3      | Bright  | 148.73      |
| 7007844  | 1-1/2" (1.5000") | 2"        | 1-1/4"     | 4-1/2" | 3      | Bright  | 164.77      |
| 7007845  | 2"               | 3"        | 2"         | 6-3/4" | 3      | Bright  | 372.97      |
| 7007846  | 2"               | 4"        | 2"         | 7-3/4" | 3      | Bright  | 405.24      |

### High Helix End Mill Single End - Powdered Metal - TiCN

- CTD Series PM-539
- 3 flute center cutting
- High helix for aluminum
- Titanium Carbonitride (TiCN) coating provides a hard surface with more wear resistance.

| Part No. | Size             | Cut Lgth. | Shank Dia. | OAL    | Flutes | Coating | Price /Each |
|----------|------------------|-----------|------------|--------|--------|---------|-------------|
| 7007847  | 3/8" (0.3750")   | 3/4"      | 3/8"       | 2-1/2" | 3      | TiCN    | 27.30       |
| 7007848  | 3/8" (0.3750")   | 1-1/2"    | 3/8"       | 3-1/4" | 3      | TiCN    | 32.43       |
| 7007849  | 1/2" (0.5000")   | 1-1/4"    | 1/2"       | 3-1/4" | 3      | TiCN    | 36.54       |
| 7007850  | 1/2" (0.5000")   | 2"        | 1/2"       | 4"     | 3      | TiCN    | 42.53       |
| 7007851  | 5/8" (0.6250")   | 1-5/8"    | 5/8"       | 3-7/8" | 3      | TiCN    | 52.53       |
| 7007852  | 5/8" (0.6250")   | 2-1/2"    | 5/8"       | 4-5/8" | 3      | TiCN    | 57.83       |
| 7007853  | 3/4" (0.7500")   | 1-5/8"    | 3/4"       | 3-3/4" | 3      | TiCN    | 52.18       |
| 7007854  | 3/4" (0.7500")   | 2-1/4"    | 3/4"       | 4-1/2" | 3      | TiCN    | 62.69       |
| 7007855  | 1"               | 2"        | 1"         | 4-1/2" | 3      | TiCN    | 87.63       |
| 7007856  | 1"               | 3"        | 1"         | 5-1/2" | 3      | TiCN    | 104.29      |
| 7007857  | 1-1/4" (1.2500") | 2"        | 1-1/4"     | 4-1/2" | 3      | TiCN    | 142.11      |
| 7007858  | 1-1/4" (1.2500") | 3"        | 1-1/4"     | 5-1/2" | 3      | TiCN    | 178.31      |
| 7007859  | 1-1/2" (1.5000") | 2"        | 1-1/4"     | 4-1/2" | 3      | TiCN    | 194.11      |
| 7007860  | 2"               | 3"        | 2"         | 6-3/4" | 3      | TiCN    | 455.31      |
| 7007861  | 2"               | 4"        | 2"         | 7-3/4" | 3      | TiCN    | 476.98      |

### Special Profile Roughing End Mill for Aluminum

- CTD Series PMR-538
- 3 flutes center cutting
- Powdered metal for hardness and toughness
- Special coarse pitch knuckle form design for aluminum
- High helix for faster chip removal



| Part No. | Size             | Cut Lgth. | Shank Dia. | OAL    | Flutes | Coating | Price /Each |
|----------|------------------|-----------|------------|--------|--------|---------|-------------|
| 7007862  | 1/2" (0.5000")   | 1-1/4"    | 1/2"       | 3-1/4" | 3      | Bright  | 41.95       |
| 7007863  | 1/2" (0.5000")   | 2"        | 1/2"       | 4"     | 3      | Bright  | 49.61       |
| 7007864  | 5/8" (0.6250")   | 1-3/8"    | 5/8"       | 3-3/4" | 3      | Bright  | 67.43       |
| 7007865  | 5/8" (0.6250")   | 2-1/2"    | 5/8"       | 4-5/8" | 3      | Bright  | 69.14       |
| 7007866  | 3/4" (0.7500")   | 1-5/8"    | 3/4"       | 3-7/8" | 3      | Bright  | 66.58       |
| 7007867  | 3/4" (0.7500")   | 1-5/8"    | 3/4"       | 3-7/8" | 3      | Bright  | 86.68       |
| 7007868  | 3/4" (0.7500")   | 3"        | 3/4"       | 5-1/4" | 3      | Bright  | 93.54       |
| 7007869  | 1"               | 2"        | 1"         | 4-1/2" | 3      | Bright  | 114.71      |
| 7007870  | 1"               | 3"        | 1"         | 5-1/2" | 3      | Bright  | 123.80      |
| 7007871  | 1-1/4" (1.2500") | 3"        | 1-1/4"     | 5-1/2" | 3      | Bright  | 163.74      |
| 7007872  | 1-1/2" (1.5000") | 2"        | 1-1/2"     | 4-1/2" | 3      | Bright  | 153.21      |
| 7007873  | 1-1/2" (1.5000") | 2"        | 1-1/4"     | 4-1/2" | 3      | Bright  | 252.59      |
| 7007874  | 2"               | 2"        | 2"         | 5-3/4" | 3      | Bright  | 352.20      |
| 7007875  | 2"               | 3"        | 2"         | 6-3/4" | 3      | Bright  | 362.12      |
| 7007876  | 2"               | 4"        | 2"         | 7-3/4" | 3      | Bright  | 384.81      |

### Special Profile Roughing End Mill TiCN

- CTD Series PMR-538
- 3 flutes center cutting
- Powdered metal for hardness and toughness.
- Special coarse pitch knuckle form design for aluminum
- High helix for faster chip removal.
- Titanium Carbonitride (TiCN) coating for a harder surface and more wear resistance.



| Part No. | Size             | Cut Lgth. | Shank Dia. | OAL    | Flutes | Coating | Price /Each |
|----------|------------------|-----------|------------|--------|--------|---------|-------------|
| 7007877  | 1/2" (0.5000")   | 1-1/4"    | 1/2"       | 3-1/4" | 3      | TiCN    | 49.77       |
| 7007878  | 1/2" (0.5000")   | 2"        | 1/2"       | 4"     | 3      | TiCN    | 58.37       |
| 7007879  | 5/8" (0.6250")   | 1-3/8"    | 5/8"       | 3-3/4" | 3      | TiCN    | 80.01       |
| 7007880  | 5/8" (0.6250")   | 2-1/2"    | 5/8"       | 4-5/8" | 3      | TiCN    | 83.82       |
| 7007881  | 3/4" (0.7500")   | 1-5/8"    | 3/4"       | 3-7/8" | 3      | TiCN    | 77.90       |
| 7007882  | 3/4" (0.7500")   | 1-5/8"    | 3/4"       | 3-7/8" | 3      | TiCN    | 102.83      |
| 7007883  | 3/4" (0.7500")   | 3"        | 3/4"       | 5-1/4" | 3      | TiCN    | 113.38      |
| 7007884  | 1"               | 2"        | 1"         | 4-1/2" | 3      | TiCN    | 135.29      |
| 7007885  | 1"               | 3"        | 1"         | 5-1/2" | 3      | TiCN    | 145.64      |
| 7007886  | 1-1/4" (1.2500") | 3"        | 1-1/4"     | 5-1/2" | 3      | TiCN    | 196.25      |
| 7007887  | 1-1/2" (1.5000") | 2"        | 1-1/4"     | 4-1/2" | 3      | TiCN    | 297.04      |

## Cobalt End Mills

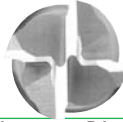


### Niagara Cutter

#### Multi-Flute Cobalt End Mill, General Purpose

##### 8% Cobalt Steel SPC408 - Single-End, Center-Cutting

- All Materials / High Temp Alloys
- Profile / Slotting

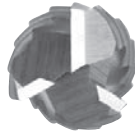


| Part No. | Diameter | Coating  | Flute Lgth. | Shank Dia. | Price /Each |
|----------|----------|----------|-------------|------------|-------------|
| 0327846  | 1/8      | Uncoated | 3/8         | 3/8        | \$14.48:    |
| 0327847  | 3/16     | Uncoated | 1/2         | 3/8        | 14.48:      |
| 0327848  | 1/4      | Uncoated | 5/8         | 3/8        | 14.48:      |
| 0327849  | 5/16     | Uncoated | 3/4         | 3/8        | 14.48:      |
| 0327850  | 3/8      | Uncoated | 3/4         | 3/8        | 14.48:      |
| 0327851  | 1/2      | Uncoated | 1-1/4       | 1/2        | 20.08:      |
| 0327852  | 5/8      | Uncoated | 1-5/8       | 5/8        | 29.75:      |
| 0327853  | 3/4      | Uncoated | 1-5/8       | 3/4        | 33.87:      |
| 0327854  | 1        | Uncoated | 2           | 1          | 50.80:      |
| 0327855  | 1/8      | TICN Ctd | 3/8         | 3/8        | 15.84:      |
| 0327856  | 3/16     | TICN Ctd | 1/2         | 3/8        | 15.84:      |
| 0327857  | 1/4      | TICN Ctd | 5/8         | 3/8        | 15.84:      |
| 0327858  | 5/16     | TICN Ctd | 3/4         | 3/8        | 15.84:      |
| 0327859  | 3/8      | TICN Ctd | 3/4         | 3/8        | 15.84:      |
| 0327860  | 1/2      | TICN Ctd | 1-1/4       | 1/2        | 22.14:      |
| 0327861  | 5/8      | TICN Ctd | 1-5/8       | 5/8        | 32.78:      |
| 0327862  | 3/4      | TICN Ctd | 1-5/8       | 3/4        | 37.26:      |
| 0327863  | 1        | TICN Ctd | 2           | 1          | 55.88:      |

#### Cobalt Roughing End Mill

##### RHC752 - Single-End, Center-Cutting, Coarse-Pitch

- High-Helix for Aluminum
- Profile / Slotting
- Aluminum / Non-Ferrous



| Part No. | Diameter | Coating  | Flute Lgth. | Shank Dia. | Price /Each |
|----------|----------|----------|-------------|------------|-------------|
| 0327864  | 1/4      | Uncoated | 5/8         | 3/8        | \$26.32:    |
| 0327865  | 3/8      | Uncoated | 3/4         | 3/8        | 26.32:      |
| 0327866  | 1/2      | Uncoated | 1-1/4       | 1/2        | 31.02:      |
| 0327867  | 1/2      | Uncoated | 2           | 1/2        | 40.10:      |
| 0327868  | 5/8      | Uncoated | 1-5/8       | 5/8        | 37.63:      |
| 0327869  | 3/4      | Uncoated | 1-5/8       | 3/4        | 46.37:      |
| 0327870  | 3/4      | Uncoated | 2           | 3/4        | 52.08:      |
| 0327871  | 1        | Uncoated | 1-1/2       | 3/4        | 86.24:      |
| 0327872  | 1        | Uncoated | 2           | 1          | 67.76:      |
| 0327873  | 1        | Uncoated | 3           | 1          | 77.17:      |
| 0327874  | 1/4      | TICN Ctd | 5/8         | 3/8        | 29.01:      |
| 0327875  | 3/8      | TICN Ctd | 3/4         | 3/8        | 29.01:      |
| 0327876  | 1/2      | TICN Ctd | 1-1/4       | 1/2        | 34.16:      |
| 0327877  | 1/2      | TICN Ctd | 2           | 1/2        | 44.13:      |
| 0327878  | 5/8      | TICN Ctd | 1-5/8       | 5/8        | 41.44:      |
| 0327879  | 3/4      | TICN Ctd | 1-5/8       | 3/4        | 50.96:      |
| 0327880  | 3/4      | TICN Ctd | 2           | 3/4        | 57.34:      |
| 0327881  | 1        | TICN Ctd | 1-1/2       | 3/4        | 94.86:      |
| 0327882  | 1        | TICN Ctd | 2           | 1          | 74.59:      |
| 0327883  | 1        | TICN Ctd | 3           | 1          | 84.90:      |

#### REM710 - Single End, Non-Center Cut

- All Materials
- Profile / Slotting



| Part No. | Diameter | Coating  | Flute Lgth. | Shank Dia. | Price /Each |
|----------|----------|----------|-------------|------------|-------------|
| 0327884  | 3/16     | Uncoated | 1/2         | 3/8        | \$24.42:    |
| 0327885  | 1/4      | Uncoated | 5/8         | 3/8        | 24.42:      |
| 0327886  | 5/16     | Uncoated | 3/4         | 3/8        | 24.42:      |
| 0327887  | 3/8      | Uncoated | 3/4         | 3/8        | 24.42:      |
| 0327888  | 3/8      | Uncoated | 1-1/2       | 3/8        | 29.12:      |
| 0327889  | 7/16     | Uncoated | 1           | 3/8        | 36.18:      |
| 0327890  | 1/2      | Uncoated | 1-1/4       | 1/2        | 32.03:      |
| 0327891  | 1/2      | Uncoated | 2           | 1/2        | 42.67:      |
| 0327892  | 5/8      | Uncoated | 1-5/8       | 5/8        | 38.86:      |
| 0327893  | 3/4      | Uncoated | 1-5/8       | 3/4        | 44.58:      |
| 0327894  | 3/4      | Uncoated | 3           | 3/4        | 58.35:      |
| 0327895  | 1        | Uncoated | 1-1/2       | 3/4        | 65.74:      |
| 0327896  | 1        | Uncoated | 2           | 1          | 67.09:      |
| 0327897  | 1        | Uncoated | 3           | 1          | 85.90:      |
| 0327898  | 1-1/4    | Uncoated | 2           | 1-1/4      | 89.04:      |
| 0327899  | 1-1/4    | Uncoated | 4           | 1-1/4      | 131.71:     |
| 0327900  | 3/16     | TICN Ctd | 1/2         | 3/8        | 26.88:      |
| 0327901  | 1/4      | TICN Ctd | 5/8         | 3/8        | 26.88:      |
| 0327902  | 5/16     | TICN Ctd | 3/4         | 3/8        | 26.88:      |
| 0327903  | 3/8      | TICN Ctd | 3/4         | 3/8        | 26.88:      |
| 0327904  | 3/8      | TICN Ctd | 1-1/2       | 3/8        | 32.10:      |
| 0327905  | 7/16     | TICN Ctd | 1           | 3/8        | 39.76:      |
| 0327906  | 1/2      | TICN Ctd | 1-1/4       | 1/2        | 35.28:      |
| 0327907  | 1/2      | TICN Ctd | 2           | 1/2        | 46.93:      |
| 0327908  | 5/8      | TICN Ctd | 1-5/8       | 5/8        | 42.78:      |
| 0327909  | 3/4      | TICN Ctd | 1-5/8       | 3/4        | 49.06:      |
| 0327910  | 3/4      | TICN Ctd | 3           | 3/4        | 64.18:      |
| 0327911  | 1        | TICN Ctd | 1-1/2       | 3/4        | 72.35:      |
| 0327912  | 1        | TICN Ctd | 2           | 1          | 73.81:      |
| 0327913  | 1        | TICN Ctd | 3           | 1          | 94.53:      |
| 0327914  | 1-1/4    | TICN Ctd | 2           | 1-1/4      | 98.00:      |
| 0327915  | 1-1/4    | TICN Ctd | 4           | 1-1/4      | 144.93:     |

#### Cobalt Roughing End Mill, Fine Pitch

##### REM445 - Single-End, Non-Center Cut

- Multi-Flute / M42 8% Cobalt Steel
- All materials / High Temp Alloys
- Profile / Slotting



| Part No. | Diameter | Coating  | Flute Lgth. | Shank Dia. | Price /Each |
|----------|----------|----------|-------------|------------|-------------|
| 0327916  | 3/16     | Uncoated | 1/2         | 3/8        | \$24.42:    |
| 0327917  | 1/4      | Uncoated | 5/8         | 3/8        | 24.42:      |
| 0327918  | 5/16     | Uncoated | 3/4         | 3/8        | 24.42:      |
| 0327919  | 3/8      | Uncoated | 3/4         | 3/8        | 24.42:      |
| 0327920  | 3/8      | Uncoated | 1-1/2       | 3/8        | 29.12:      |
| 0327921  | 1/2      | Uncoated | 1-1/4       | 1/2        | 32.03:      |
| 0327922  | 1/2      | Uncoated | 2           | 1/2        | 42.67:      |
| 0327923  | 5/8      | Uncoated | 1-5/8       | 5/8        | 38.86:      |
| 0327924  | 3/4      | Uncoated | 1-5/8       | 3/4        | 44.58:      |
| 0327925  | 3/4      | Uncoated | 3           | 3/4        | 58.35:      |
| 0327926  | 1        | Uncoated | 1-1/2       | 3/4        | 71.01:      |
| 0327927  | 1        | Uncoated | 2           | 1          | 67.09:      |
| 0327928  | 1        | Uncoated | 3           | 1          | 85.90:      |
| 0327929  | 1-1/4    | Uncoated | 2           | 1-1/4      | 89.04:      |
| 0327930  | 1-1/4    | Uncoated | 4           | 1-1/4      | 131.71:     |
| 0327931  | 3/16     | TICN Ctd | 1/2         | 3/8        | 26.88:      |
| 0327932  | 1/4      | TICN Ctd | 5/8         | 3/8        | 26.88:      |
| 0327933  | 5/16     | TICN Ctd | 3/4         | 3/8        | 26.88:      |
| 0327934  | 3/8      | TICN Ctd | 3/4         | 3/8        | 26.88:      |
| 0327935  | 3/8      | TICN Ctd | 1-1/2       | 3/8        | 32.10:      |
| 0327936  | 1/2      | TICN Ctd | 1-1/4       | 1/2        | 35.28:      |
| 0327937  | 1/2      | TICN Ctd | 2           | 1/2        | 46.93:      |
| 0327938  | 5/8      | TICN Ctd | 1-5/8       | 5/8        | 42.78:      |
| 0327939  | 3/4      | TICN Ctd | 1-5/8       | 3/4        | 49.06:      |
| 0327940  | 3/4      | TICN Ctd | 3           | 3/4        | 64.18:      |
| 0327941  | 1        | TICN Ctd | 1-1/2       | 3/4        | 78.06:      |
| 0327942  | 1        | TICN Ctd | 2           | 1          | 73.81:      |
| 0327943  | 1        | TICN Ctd | 3           | 1          | 94.53:      |
| 0327944  | 1-1/4    | TICN Ctd | 2           | 1-1/4      | 98.00:      |
| 0327945  | 1-1/4    | TICN Ctd | 4           | 1-1/4      | 144.93:     |

# COBALT END MILLS

## Cobalt End Mills Cont.



End Mills

### Cleveland WaveCut II Semi-Roughing End Mill for Titanium and Other Hard Materials

- CTD Series 620V
- WaveCut II Multi-Flute, Center Cutting M42 Semi-Roughing End Mills for Titanium and other hard materials
- Unique variable rake for machining at higher feeds and speeds

| Part No. | Size             | Cut Lgth. | Shank Dia. | OAL    | Flutes | Coating          | Price /Each |
|----------|------------------|-----------|------------|--------|--------|------------------|-------------|
| 7007310  | 3/4" (0.7500")   | 13/8"     | 3/4"       | 3-3/4" | 4      | Bright           | 84.45       |
| 7007311  | 1-1/4" (1.2500") | 2"        | 1"         | 4-1/2" | 4      | Bright           | 133.69      |
| 7007312  | 1-1/4" (1.2500") | 2"        | 1"         | 4-1/2" | 6      | Bright           | 108.95      |
| 7007313  | 3/4" (0.7500")   | 3"        | 1-1/4"     | 5-1/4" | 4      | Bright           | 126.65      |
| 7007314  | 1"               | 4"        | 1-1/4"     | 6-1/2" | 6      | Bright           | 126.65      |
| 7007315  | 1-1/4" (1.2500") | 3"        | 1-1/4"     | 5-1/2" | 4      | Bright           | 203.01      |
| 7007316  | 1"               | 4"        | 1-1/4"     | 6-1/2" | 6      | Bright           | 203.01      |
| 7007317  | 1"               | 2"        | 3/4"       | 4-1/2" | 4      | Bright           | 192.33      |
| 7007318  | 1-1/2" (1.5000") | 2"        | 1"         | 4-1/2" | 6      | Bright           | 192.33      |
| 7007319  | 3/4" (0.7500")   | 2-1/4"    | 1-1/4"     | 4-1/2" | 6      | Bright           | 287.22      |
| 7007320  | 1"               | 2"        | 3/4"       | 4-1/2" | 4      | Bright           | 287.22      |
| 7007321  | 1-1/4" (1.2500") | 4"        | 1-1/4"     | 6"     | 6      | Bright           | 242.64      |
| 7007322  | 1-1/2" (1.5000") | 2"        | 1"         | 4-1/2" | 6      | Bright           | 242.64      |
| 7007323  | 1-1/4" (1.2500") | 4"        | 1-1/4"     | 6-1/2" | 4      | Bright           | 247.59      |
| 7007324  | 2"               | 2"        | 2"         | 5-3/4" | 6      | Bright           | 436.32      |
| 7007325  | 2"               | 4"        | 2"         | 7-3/4" | 4      | Bright           | 558.10      |
| 7007326  | 2"               | 4"        | 2"         | 7-3/4" | 6      | Bright           | 558.10      |
| 7007327  | 2"               | 4"        | 2"         | 7-3/4" | 8      | Bright           | 614.93      |
| 7007328  | 2"               | 6"        | 2"         | 9-3/4" | 4      | Bright           | 696.58      |
| 7007329  | 2"               | 6"        | 2"         | 9-3/4" | 6      | Bright           | 702.77      |
| 7007330  | 2"               | 6"        | 2"         | 9-3/4" | 8      | Bright           | 785.46      |
| 7007331  | 7/8" (0.8750")   | 3-1/2"    | 3/4"       | 5-3/4" | 4      | Titanium Nitride | 98.80       |
| 7007332  | 3/4" (0.7500")   | 2-1/4"    | 5/8"       | 4-1/2" | 3      | TICN             | 156.42      |
| 7007333  | 1/2" (0.5000")   | 1/2"      | 3/4"       | 2-1/2" | 4      | TICN             | 123.53      |
| 7007334  | 1"               | 3"        | 2"         | 5-1/2" | 6      | TICN             | 148.21      |
| 7007335  | 1"               | 4"        | 2"         | 6-1/2" | 2      | TICN             | 148.21      |
| 7007336  | 5/8" (0.6250")   | 5/8"      | 1"         | 2-3/4" | 4      | TICN             | 237.54      |
| 7007337  | 5/8" (0.6250")   | 1-5/8"    | 1"         | 3-3/4" | 6      | TICN             | 237.54      |
| 7007338  | 5/8" (0.6250")   | 2-1/2"    | 1-1/4"     | 4-5/8" | 4      | TICN             | 225.05      |
| 7007339  | 3/4" (0.7500")   | 3/4"      | 1-1/4"     | 3"     | 6      | TICN             | 225.05      |
| 7007340  | 3/4" (0.7500")   | 1-5/8"    | 1-1/4"     | 3-7/8" | 4      | TICN             | 336.04      |
| 7007341  | 3/4" (0.7500")   | 3"        | 1-1/4"     | 5-1/4" | 6      | TICN             | 336.04      |
| 7007342  | 7/8" (0.8750")   | 7/8"      | 1-1/4"     | 3-1/8" | 4      | TICN             | 283.89      |
| 7007343  | 1"               | 1"        | 1-1/4"     | 3-1/2" | 6      | TICN             | 283.88      |
| 7007344  | 1"               | 2"        | 1-1/4"     | 4-1/2" | 6      | TICN             | 409.17      |
| 7007345  | 1"               | 3"        | 2"         | 5-1/2" | 6      | TICN             | 510.49      |
| 7007346  | 1"               | 4"        | 2"         | 6-1/2" | 2      | TICN             | 652.95      |
| 7007347  | 1/2" (0.5000")   | 1-1/4"    | 2"         | 3-1/4" | 2      | Bright           | 652.95      |
| 7007348  | 1/2" (0.5000")   | 2"        | 2"         | 4"     | 2      | Bright           | 719.46      |
| 7007349  | 5/8" (0.6250")   | 1-5/8"    | 2"         | 3-3/4" | 2      | Bright           | 814.99      |
| 7007350  | 5/8" (0.6250")   | 2-1/2"    | 2"         | 4-5/8" | 2      | Bright           | 822.24      |
| 7007351  | 3/4" (0.7500")   | 1-5/8"    | 2"         | 3-7/8" | 2      | Bright           | 918.96      |

### Cobalt Ball Nose End Mills CTD Series HGC-2B

- 2 flutes give maximum chip space
- Cobalt HSS material for maintaining edge strength and extended wear life.



| Part No. | Size             | Cut Lgth. | Shank Dia. | OAL     | Flutes | Coating | Price /Each |
|----------|------------------|-----------|------------|---------|--------|---------|-------------|
| 7007648  | 1/8" (0.1250")   | 3/8"      | 3/8"       | 2-5/16" | 2      | Bright  | 13.68       |
| 7007649  | 3/16" (0.1875")  | 1/2"      | 3/8"       | 2-3/8"  | 2      | Bright  | 13.68       |
| 7007650  | 1/4" (0.2500")   | 5/8"      | 3/8"       | 2-7/16" | 2      | Bright  | 13.68       |
| 7007651  | 5/16" (0.3125")  | 3/4"      | 3/8"       | 2-1/2"  | 2      | Bright  | 13.93       |
| 7007652  | 3/8" (0.3750")   | 3/4"      | 3/8"       | 2-1/2"  | 2      | Bright  | 13.93       |
| 7007653  | 1/2" (0.5000")   | 1"        | 1/2"       | 3-1/4"  | 2      | Bright  | 21.38       |
| 7007654  | 5/8" (0.6250")   | 1-3/8"    | 5/8"       | 3-1/4"  | 2      | Bright  | 42.44       |
| 7007655  | 3/4" (0.7500")   | 1-5/8"    | 3/4"       | 3-7/8"  | 2      | Bright  | 44.55       |
| 7007656  | 7/8" (0.8750")   | 1-7/8"    | 7/8"       | 4-1/8"  | 2      | Bright  | 69.75       |
| 7007657  | 1-1/4" (1.2500") | 2-1/2"    | 1-1/4"     | 4-1/2"  | 2      | Bright  | 126.39      |
| 7007658  | 1-1/2" (1.5000") | 2-1/2"    | 1-1/4"     | 4-1/2"  | 2      | Bright  | 160.45      |

### Single End Cobalt End Mills

- CTD Series HGC-2
- 2 flutes center cutting
- 2 flutes allows for maximum space for chip removal



| Part No. | Size             | Cut Lgth. | Shank Dia. | OAL      | Flutes | Coating | Price /Each |
|----------|------------------|-----------|------------|----------|--------|---------|-------------|
| 7007619  | 1/8" (0.1250")   | 3/8"      | 3/8"       | 2-5/16"  | 2      | Bright  | 9.79        |
| 7007620  | 5/32" (0.1562")  | 7/16"     | 3/8"       | 2-3/8"   | 2      | Bright  | 9.79        |
| 7007621  | 11/64" (0.1719") | 7/16"     | 3/8"       | 2-3/8"   | 2      | Bright  | 9.79        |
| 7007622  | 3/16" (0.1875")  | 7/16"     | 3/8"       | 2-3/8"   | 2      | Bright  | 9.79        |
| 7007623  | 13/64" (0.2031") | 1/2"      | 3/8"       | 2-7/16"  | 2      | Bright  | 14.25       |
| 7007624  | 7/32" (0.2188")  | 1/2"      | 3/8"       | 2-7/16"  | 2      | Bright  | 11.07       |
| 7007625  | 15/64" (0.2344") | 1/2"      | 3/8"       | 2-7/16"  | 2      | Bright  | 14.25       |
| 7007626  | 1/4" (0.2500")   | 1/2"      | 3/8"       | 2-7/16"  | 2      | Bright  | 9.79        |
| 7007627  | 17/64" (0.2656") | 9/16"     | 3/8"       | 2-1/2"   | 2      | Bright  | 14.52       |
| 7007628  | 9/32" (0.2812")  | 9/16"     | 3/8"       | 2-1/2"   | 2      | Bright  | 11.28       |
| 7007629  | 19/64" (0.2969") | 9/16"     | 3/8"       | 2-1/2"   | 2      | Bright  | 14.52       |
| 7007630  | 5/16" (0.3125")  | 9/16"     | 3/8"       | 2-1/2"   | 2      | Bright  | 9.97        |
| 7007631  | 21/64" (0.3281") | 9/16"     | 3/8"       | 2-1/2"   | 2      | Bright  | 14.52       |
| 7007632  | 11/32" (0.3438") | 9/16"     | 3/8"       | 2-1/2"   | 2      | Bright  | 11.28       |
| 7007633  | 23/64" (0.3594") | 9/16"     | 3/8"       | 2-1/2"   | 2      | Bright  | 14.52       |
| 7007634  | 3/8" (0.3750")   | 9/16"     | 3/8"       | 2-1/2"   | 2      | Bright  | 9.97        |
| 7007635  | 25/64" (0.3906") | 13/16"    | 3/8"       | 2-11/16" | 2      | Bright  | 20.18       |
| 7007636  | 13/32" (0.4062") | 13/16"    | 3/8"       | 2-11/16" | 2      | Bright  | 14.61       |
| 7007637  | 27/64" (0.4219") | 13/16"    | 3/8"       | 2-11/16" | 2      | Bright  | 18.75       |
| 7007638  | 7/16" (0.4375")  | 13/16"    | 3/8"       | 2-11/16" | 2      | Bright  | 14.04       |
| 7007639  | 29/64" (0.4531") | 1"        | 1/2"       | 3-1/4"   | 2      | Bright  | 18.68       |
| 7007640  | 15/32" (0.4688") | 1"        | 1/2"       | 3-1/4"   | 2      | Bright  | 16.17       |
| 7007641  | 31/64" (0.4844") | 1"        | 1/2"       | 3-1/4"   | 2      | Bright  | 18.68       |
| 7007642  | 1/2" (0.5000")   | 1"        | 1/2"       | 3-1/4"   | 2      | Bright  | 14.58       |
| 7007643  | 3/4" (0.7500")   | 1-5/16"   | 3/4"       | 3-7/8"   | 2      | Bright  | 29.93       |
| 7007644  | 1"               | 1-5/8"    | 1"         | 4-1/2"   | 2      | Bright  | 45.99       |
| 7007645  | 1"               | 2-1/4"    | 1"         | 4-1/2"   | 2      | Bright  | 65.98       |
| 7007646  | 1-1/4" (1.2500") | 1-5/8"    | 1-1/4"     | 4-1/2"   | 2      | Bright  | 82.67       |
| 7007647  | 1-1/2" (1.5000") | 1-5/8"    | 1-1/4"     | 4-1/2"   | 2      | Bright  | 111.04      |

### Single End 2 Flute Cobalt End Mills

| Part No. | Size             | Cut Lgth. | Shank Dia. | OAL     | Flutes | Coating | Price /Each |
|----------|------------------|-----------|------------|---------|--------|---------|-------------|
| 7007392  | 1/8" (0.1250")   | 3/8"      | 3/8"       | 3-1/16" | 2      | Bright  | 14.27       |
| 7007393  | 5/32" (0.1562")  | 7/16"     | 3/8"       | 3-1/8"  | 2      | Bright  | 15.15       |
| 7007394  | 3/16" (0.1875")  | 7/16"     | 3/8"       | 3-1/4"  | 2      | Bright  | 14.27       |
| 7007395  | 7/32" (0.2188")  | 1/2"      | 3/8"       | 3-1/4"  | 2      | Bright  | 15.15       |
| 7007396  | 1/4" (0.2500")   | 1/2"      | 3/8"       | 3-3/8"  | 2      | Bright  | 14.27       |
| 7007397  | 9/32" (0.2812")  | 9/16"     | 3/8"       | 3-3/8"  | 2      | Bright  | 15.44       |
| 7007398  | 5/16" (0.3125")  | 9/16"     | 3/8"       | 3-1/2"  | 2      | Bright  | 14.54       |
| 7007399  | 11/32" (0.3438") | 9/16"     | 3/8"       | 3-1/2"  | 2      | Bright  | 15.44       |
| 7007400  | 3/8" (0.3750")   | 9/16"     | 3/8"       | 3-1/2"  | 2      | Bright  | 16.29       |
| 7007401  | 13/32" (0.4062") | 13/16"    | 1/2"       | 4-1/8"  | 2      | Bright  | 23.46       |
| 7007402  | 7/16" (0.4375")  | 13/16"    | 1/2"       | 4-1/8"  | 2      | Bright  | 22.33       |
| 7007403  | 15/32" (0.4688") | 13/16"    | 1/2"       | 4-1/8"  | 2      | Bright  | 23.28       |
| 7007404  | 1/2" (0.5000")   | 13/16"    | 1/2"       | 4-1/8"  | 2      | Bright  | 21.27       |
| 7007405  | 5/8" (0.6250")   | 1-1/8"    | 5/8"       | 5"      | 2      | Bright  | 40.78       |
| 7007406  | 3/4" (0.7500")   | 1-5/16"   | 3/4"       | 5-5/8"  | 2      | Bright  | 52.90       |
| 7007407  | 7/8" (0.8750")   | 1-9/16"   | 7/8"       | 6-1/8"  | 2      | Bright  | 65.45       |
| 7007408  | 1"               | 1-5/8"    | 1"         | 6-3/8"  | 2      | Bright  | 75.96       |

## Cobalt End Mills Cont.



### Single End Cobalt Center Cutting End Mill

- CTD Series HGC-4C
- Multi-flutes center cutting
- Multi-flutes for smoother finish



| Part No. | Size             | Cut Lgth. | Shank Dia. | OAL      | Flutes | Coating | Price /Each |
|----------|------------------|-----------|------------|----------|--------|---------|-------------|
| 7007659  | 1/8" (0.1250")   | 3/8"      | 3/8"       | 2-5/16"  | 4      | Bright  | 12.58       |
| 7007660  | 5/32" (0.1562")  | 1/2"      | 3/8"       | 2-3/8"   | 4      | Bright  | 11.77       |
| 7007661  | 11/64" (0.1719") | 1/2"      | 3/8"       | 2-3/8"   | 4      | Bright  | 12.66       |
| 7007662  | 3/16" (0.1875")  | 1/2"      | 3/8"       | 2-3/8"   | 4      | Bright  | 11.46       |
| 7007663  | 13/64" (0.2031") | 5/8"      | 3/8"       | 2-7/16"  | 4      | Bright  | 12.66       |
| 7007664  | 7/32" (0.2188")  | 5/8"      | 3/8"       | 2-7/16"  | 4      | Bright  | 11.46       |
| 7007665  | 15/64" (0.2344") | 5/8"      | 3/8"       | 2-7/16"  | 4      | Bright  | 12.66       |
| 7007666  | 1/4" (0.2500")   | 5/8"      | 3/8"       | 2-7/16"  | 4      | Bright  | 11.48       |
| 7007667  | 1/4" (0.2500")   | 1-1/4"    | 3/8"       | 3-1/16"  | 4      | Bright  | 14.17       |
| 7007668  | 17/32" (0.5313") | 3-1/4"    | 3/8"       | 2-1/2"   | 4      | Bright  | 22.12       |
| 7007669  | 9/32" (0.2812")  | 3/4"      | 3/8"       | 2-1/2"   | 4      | Bright  | 13.99       |
| 7007670  | 19/64" (0.2969") | 3/4"      | 3/8"       | 2-1/2"   | 4      | Bright  | 12.91       |
| 7007671  | 5/16" (0.3125")  | 3/4"      | 3/8"       | 2-1/2"   | 4      | Bright  | 11.41       |
| 7007672  | 5/16" (0.3125")  | 1-3/8"    | 3/8"       | 3-1/8"   | 4      | Bright  | 15.01       |
| 7007673  | 21/64" (0.3281") | 3/4"      | 3/8"       | 2-1/2"   | 4      | Bright  | 12.91       |
| 7007674  | 11/32" (0.3438") | 3/4"      | 3/8"       | 2-1/2"   | 4      | Bright  | 11.68       |
| 7007675  | 23/64" (0.3594") | 3/4"      | 3/8"       | 2-1/2"   | 4      | Bright  | 12.91       |
| 7007676  | 3/8" (0.3750")   | 3/4"      | 3/8"       | 2-1/2"   | 4      | Bright  | 12.40       |
| 7007677  | 3/8" (0.3750")   | 1-1/2"    | 3/8"       | 3-1/4"   | 4      | Bright  | 14.20       |
| 7007678  | 25/64" (0.3906") | 1"        | 3/8"       | 2-11/16" | 4      | Bright  | 20.70       |
| 7007679  | 13/32" (0.4062") | 1"        | 3/8"       | 2-11/16" | 4      | Bright  | 16.26       |
| 7007680  | 27/64" (0.4219") | 1"        | 3/8"       | 2-11/16" | 4      | Bright  | 20.70       |
| 7007681  | 7/16" (0.4375")  | 1"        | 3/8"       | 2-11/16" | 4      | Bright  | 15.84       |
| 7007682  | 7/16" (0.4375")  | 1-3/4"    | 3/8"       | 3-1/4"   | 4      | Bright  | 18.39       |
| 7007683  | 29/64" (0.4531") | 1-1/4"    | 1/2"       | 3-1/4"   | 4      | Bright  | 20.18       |
| 7007684  | 15/32" (0.4688") | 1-1/4"    | 1/2"       | 3-1/4"   | 4      | Bright  | 18.07       |
| 7007685  | 31/64" (0.4844") | 1-1/4"    | 1/2"       | 3-1/4"   | 4      | Bright  | 20.18       |
| 7007686  | 1/2" (0.5000")   | 1-1/4"    | 1/2"       | 3-1/4"   | 4      | Bright  | 15.62       |
| 7007687  | 1/2" (0.5000")   | 1-1/4"    | 1/2"       | 3-1/4"   | 6      | Bright  | 17.73       |
| 7007688  | 1/2" (0.5000")   | 2"        | 1/2"       | 4"       | 4      | Bright  | 19.81       |
| 7007689  | 5/8" (0.6250")   | 1-5/8"    | 5/8"       | 3-1/4"   | 4      | Bright  | 31.32       |
| 7007690  | 5/8" (0.6250")   | 1-5/8"    | 5/8"       | 3-1/4"   | 6      | Bright  | 37.62       |
| 7007691  | 5/8" (0.6250")   | 2-1/2"    | 5/8"       | 4-5/8"   | 4      | Bright  | 45.84       |
| 7007692  | 3/4" (0.7500")   | 1-5/8"    | 3/4"       | 3-7/8"   | 4      | Bright  | 39.82       |
| 7007693  | 3/4" (0.7500")   | 1-5/8"    | 3/4"       | 3-7/8"   | 6      | Bright  | 42.14       |
| 7007694  | 3/4" (0.7500")   | 3"        | 3/4"       | 5-1/4"   | 4      | Bright  | 47.20       |
| 7007695  | 3/4" (0.7500")   | 3"        | 3/4"       | 5-1/4"   | 6      | Bright  | 55.24       |
| 7007696  | 7/8" (0.8750")   | 3-1/2"    | 7/8"       | 5-3/4"   | 4      | Bright  | 50.33       |
| 7007697  | 7/8" (0.8750")   | 3-1/2"    | 7/8"       | 5-3/4"   | 6      | Bright  | 71.52       |
| 7007698  | 1"               | 2"        | 1"         | 4-1/2"   | 4      | Bright  | 53.91       |
| 7007699  | 1"               | 2"        | 1"         | 4-1/2"   | 6      | Bright  | 58.35       |
| 7007700  | 1"               | 4"        | 1"         | 6-1/2"   | 4      | Bright  | 85.35       |
| 7007701  | 1"               | 4"        | 1"         | 6-1/2"   | 6      | Bright  | 98.30       |
| 7007702  | 1-1/4" (1.2500") | 2"        | 1-1/4"     | 4-1/2"   | 4      | Bright  | 86.45       |
| 7007703  | 1-1/4" (1.2500") | 2"        | 1-1/4"     | 4-1/2"   | 6      | Bright  | 97.70       |
| 7007705  | 1-1/4" (1.2500") | 4"        | 1-1/4"     | 4-1/8"   | 6      | Bright  | 129.09      |
| 7007706  | 1-1/2" (1.5000") | 2"        | 1-1/4"     | 4-1/2"   | 4      | Bright  | 109.73      |
| 7007707  | 1-1/2" (1.5000") | 2"        | 1-1/4"     | 4-1/2"   | 6      | Bright  | 113.76      |
| 7007708  | 2"               | 4"        | 2"         | 7-3/4"   | 6      | Bright  | 181.46      |
| 7007709  | 1/8" (0.1250")   | 3/8"      | 3/8"       | 2-5/16"  | 4      | Bright  | 12.58       |
| 7007710  | 3/16" (0.1875")  | 1/2"      | 3/8"       | 2-3/8"   | 4      | Bright  | 11.46       |
| 7007711  | 1/4" (0.2500")   | 5/8"      | 3/8"       | 2-7/16"  | 4      | Bright  | 11.48       |
| 7007712  | 5/16" (0.3125")  | 3/4"      | 3/8"       | 2-1/2"   | 4      | Bright  | 11.41       |
| 7007713  | 3/8" (0.3750")   | 3/4"      | 3/8"       | 2-1/2"   | 4      | Bright  | 12.40       |
| 7007714  | 1/2" (0.5000")   | 1-1/4"    | 1/2"       | 3-1/4"   | 4      | Bright  | 15.62       |
| 7007715  | 5/8" (0.6250")   | 1-5/8"    | 5/8"       | 3-1/4"   | 4      | Bright  | 31.32       |
| 7007716  | 3/4" (0.7500")   | 1-5/8"    | 3/4"       | 3-7/8"   | 4      | Bright  | 39.82       |
| 7007717  | 3/4" (0.7500")   | 1-5/8"    | 3/4"       | 3-7/8"   | 6      | Bright  | 42.14       |
| 7007718  | 1"               | 2"        | 1"         | 4-1/2"   | 4      | Bright  | 53.91       |
| 7007719  | 1"               | 2"        | 1"         | 4-1/2"   | 6      | Bright  | 58.35       |
| 7007720  | 1-1/4" (1.2500") | 2"        | 1-1/4"     | 4-1/2"   | 4      | Bright  | 86.45       |
| 7007721  | 1-1/2" (1.5000") | 2"        | 1-1/4"     | 4-1/2"   | 4      | Bright  | 109.73      |

## Cobalt Miniature End Mills-Double End

- CTD Series HMDC-2
- 2 flutes center cutting
- 2 flutes allow maximum space for chip removal



| Part No. | Size             | Cut Lgth. | Shank Dia. | OAL    | Flutes | Coating | Price /Each |
|----------|------------------|-----------|------------|--------|--------|---------|-------------|
| 7007722  | 1/32" (0.0312")  | 3/64"     | 3/16"      | 2"     | 2      | Bright  | 14.83       |
| 7007723  | 1/32" (0.0312")  | 3/32"     | 3/16"      | 2-1/4" | 2      | Bright  | 14.83       |
| 7007724  | 3/64" (0.0469")  | 1/16"     | 3/16"      | 2"     | 2      | Bright  | 14.83       |
| 7007725  | 3/64" (0.0469")  | 9/64"     | 3/16"      | 2-1/4" | 2      | Bright  | 14.83       |
| 7007726  | 1/16" (0.0625")  | 3/32"     | 3/16"      | 2"     | 2      | Bright  | 12.13       |
| 7007727  | 1/16" (0.0625")  | 3/16"     | 3/16"      | 2-1/4" | 2      | Bright  | 13.17       |
| 7007728  | 5/64" (0.0781")  | 1/8"      | 3/16"      | 2"     | 2      | Bright  | 12.13       |
| 7007729  | 5/64" (0.0781")  | 15/64"    | 3/16"      | 2-1/4" | 2      | Bright  | 13.17       |
| 7007730  | 3/32" (0.0938")  | 9/64"     | 3/16"      | 2"     | 2      | Bright  | 12.13       |
| 7007731  | 3/32" (0.0938")  | 9/32"     | 3/16"      | 2-1/4" | 2      | Bright  | 13.17       |
| 7007732  | 7/64" (0.1094")  | 5/32"     | 3/16"      | 2"     | 2      | Bright  | 12.13       |
| 7007733  | 7/64" (0.1094")  | 21/64"    | 3/16"      | 2-1/4" | 2      | Bright  | 13.17       |
| 7007734  | 1/8" (0.1250")   | 3/8"      | 3/16"      | 2-1/4" | 2      | Bright  | 13.17       |
| 7007735  | 1/8" (0.1250")   | 3/16"     | 3/16"      | 2"     | 2      | Bright  | 12.13       |
| 7007736  | 9/64" (0.1406")  | 7/32"     | 3/16"      | 2"     | 2      | Bright  | 12.13       |
| 7007737  | 9/64" (0.1406")  | 13/32"    | 3/16"      | 2-1/4" | 2      | Bright  | 13.14       |
| 7007738  | 5/32" (0.1562")  | 15/64"    | 3/16"      | 2"     | 2      | Bright  | 12.13       |
| 7007739  | 5/32" (0.1562")  | 7/16"     | 3/16"      | 2-1/4" | 2      | Bright  | 13.17       |
| 7007740  | 11/64" (0.1719") | 1/4"      | 3/16"      | 2"     | 2      | Bright  | 12.81       |
| 7007741  | 11/64" (0.1719") | 1/2"      | 3/16"      | 2-1/4" | 2      | Bright  | 13.17       |
| 7007742  | 3/16" (0.1875")  | 9/32"     | 3/16"      | 2"     | 2      | Bright  | 12.13       |
| 7007743  | 3/16" (0.1875")  | 1/2"      | 3/16"      | 2-1/4" | 2      | Bright  | 13.17       |

## Cobalt Miniature End Mills Center Cutting

- CTD Series HMDC-4
- 4 flutes center cutting
- 4 flutes for smoother finish



| Part No. | Size            | Cut Lgth. | Shank Dia. | OAL    | Flutes | Coating | Price /Each |
|----------|-----------------|-----------|------------|--------|--------|---------|-------------|
| 7007744  | 1/16" (0.0625") | 3/32"     | 3/16"      | 2"     | 4      | Bright  | 12.11       |
| 7007745  | 1/16" (0.0625") | 3/16"     | 3/16"      | 2-1/4" | 4      | Bright  | 13.17       |
| 7007746  | 3/32" (0.0938") | 9/64"     | 3/16"      | 2"     | 4      | Bright  | 12.11       |
| 7007747  | 3/32" (0.0938") | 9/32"     | 3/16"      | 2-1/4" | 4      | Bright  | 13.17       |
| 7007748  | 1/8" (0.1250")  | 3/16"     | 3/16"      | 2"     | 4      | Bright  | 12.11       |
| 7007749  | 1/8" (0.1250")  | 3/8"      | 3/16"      | 2-1/4" | 4      | Bright  | 13.17       |
| 7007750  | 5/32" (0.1562") | 15/64"    | 3/16"      | 2"     | 4      | Bright  | 13.01       |
| 7007751  | 5/32" (0.1562") | 7/16"     | 3/16"      | 2-1/4" | 4      | Bright  | 13.17       |
| 7007752  | 3/16" (0.1875") | 9/32"     | 3/16"      | 2"     | 4      | Bright  | 13.01       |

## Roughing End Mill Non-Center Cutting Fine



| Part No. | Size             | Cut Lgth. | Shank Dia. | OAL    | Flutes | Coating | Price /Each |
|----------|------------------|-----------|------------|--------|--------|---------|-------------|
| 7007805  | 1/2" (0.5000")   | 1-1/4"    | 1/2"       | 3-1/4" | 4      | Bright  | 36.43       |
| 7007806  | 1/2" (0.5000")   | 2"        | 1/2"       | 4"     | 4      | Bright  | 48.65       |
| 7007807  | 5/8" (0.6250")   | 1-5/8"    | 5/8"       | 3-3/4" | 4      | Bright  | 44.30       |
| 7007808  | 5/8" (0.6250")   | 2-1/2"    | 5/8"       | 4-5/8" | 4      | Bright  | 59.24       |
| 7007809  | 3/4" (0.7500")   | 1-5/8"    | 3/4"       | 3-7/8" | 4      | Bright  | 51.45       |
| 7007810  | 3/4" (0.7500")   | 3"        | 3/4"       | 5-1/4" | 4      | Bright  | 72.09       |
| 7007811  | 7/8" (0.8750")   | 1-7/8"    | 7/8"       | 4-1/8" | 5      | Bright  | 73.73       |
| 7007812  | 7/8" (0.8750")   | 3-1/2"    | 7/8"       | 5-3/4" | 5      | Bright  | 85.84       |
| 7007813  | 1"               | 1-1/2"    | 3/4"       | 3-3/4" | 5      | Bright  | 83.09       |
| 7007814  | 1"               | 2"        | 1"         | 4-1/2" | 5      | Bright  | 77.16       |
| 7007815  | 1"               | 3"        | 1"         | 5-1/2" | 5      | Bright  | 101.83      |
| 7007816  | 1-1/4" (1.2500") | 1-1/2"    | 3/4"       | 3-3/4" | 6      | Bright  | 114.60      |
| 7007817  | 1-1/4" (1.2500") | 2"        | 1-1/4"     | 4-1/2" | 6      | Bright  | 102.40      |
| 7007818  | 1-1/4" (1.2500") | 3"        | 1-1/4"     | 5-1/2" | 6      | Bright  | 137.23      |



# CARBIDE END MILLS

## Carbide End Mills

# FASTENAL

### Roughing End Mill Center Cutting-Coarse

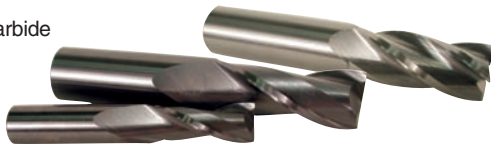


| Part No. | Size  | Decimal | Flute Lgth. | Length | Coating | Flutes | Shank Dia. | Price /Each |
|----------|-------|---------|-------------|--------|---------|--------|------------|-------------|
| 7007819  | 1-1/4 | 1.25    | 2           | 4-1/2  | BRIGHT  | 4      | 1/2        | \$36.43     |
| 7007820  | 1-1/4 | 1.25    | 2           | 4-1/2  | BRIGHT  | 6      | 1/2        | 48.65       |
| 7007821  | 1-1/2 | 1.5     | 2           | 4-1/2  | BRIGHT  | 4      | 5/8        | 53.32       |
| 7007822  | 1-1/2 | 1.5     | 2           | 4-1/2  | BRIGHT  | 4      | 5/8        | 71.79       |
| 7007823  | 1-1/2 | 1.5     | 2           | 4-1/2  | BRIGHT  | 4      | 3/4        | 61.32       |
| 7007824  | 2     | 2       | 2           | 7-3/4  | BRIGHT  | 4      | 3/4        | 80.02       |
| 7007825  | 3/8   | 0.375   | 1-1/2       | 3-1/4  | BRIGHT  | 3      | 7/8        | 69.03       |
| 7007826  | 1/2   | 0.5     | 2           | 4      | TIN     | 54     | 1          | 93.76       |
| 7007827  | 5/8   | 0.625   | 2-1/2       | 4-5/8  | BRIGHT  | 3      | 1          | 116.66      |
| 7007828  | 3/4   | 0.75    | 3           | 5-1/4  | BRIGHT  | 3      | 1          | 124.79      |
| 7007829  | 3/4   | 0.75    | 3           | 5-1/4  | BRIGHT  | 3      | 1-1/4      | 123.30      |
| 7007830  | 1     | 1       | 4           | 6-1/2  | BRIGHT  | 3      | 1-1/4      | 166.63      |
| 7007831  | 1     | 1       | 4           | 6-1/2  | BRIGHT  | 3      | 1-1/4      | 188.84      |

### 2 & 4 Flute

- 10% Cobalt
- Submicrograin Carbide
- 30° Helix Angle
- Center Cutting

Tolerances:  
+.000/- .0025



### Regular Length

| Part No.                    | Diameter | Shank Dia. | Cut Lgth. | Overall Lgth. | Price /Each |
|-----------------------------|----------|------------|-----------|---------------|-------------|
| <b>2 Flute Uncoated</b>     |          |            |           |               |             |
| 0321344                     | 1/32     | 1/8        | 1/8       | 1-1/2         | \$9.11      |
| 0321346                     | 1/16     | 1/8        | 1/4       | 1-1/2         | 8.47        |
| 0321348                     | 3/32     | 1/8        | 3/8       | 1-1/2         | 8.47        |
| 0321350                     | 1/8      | 1/8        | 1/2       | 1-1/2         | 7.40        |
| 0321352                     | 5/32     | 3/16       | 9/16      | 2             | 10.98       |
| 0321354                     | 3/16     | 3/16       | 5/8       | 2             | 10.03       |
| 0321356                     | 7/32     | 1/4        | 5/8       | 2-1/2         | 13.83       |
| 0321358                     | 1/4      | 1/4        | 3/4       | 2-1/2         | 12.22       |
| 0321360                     | 9/32     | 5/16       | 3/4       | 2-1/2         | 17.74       |
| 0321362                     | 5/16     | 5/16       | 13/16     | 2-1/2         | 17.14       |
| 0321364                     | 11/32    | 3/8        | 1         | 2-1/2         | 20.36       |
| 0321366                     | 3/8      | 3/8        | 1         | 2-1/2         | 21.00       |
| 0321367                     | 7/16     | 7/16       | 1         | 2-1/2         | 27.32       |
| 0321368                     | 1/2      | 1/2        | 1         | 3             | 29.25       |
| 0321369                     | 9/16     | 9/16       | 1-1/4     | 3-1/2         | 53.56       |
| 0321370                     | 5/8      | 5/8        | 1-1/4     | 3-1/2         | 58.92       |
| 0321371                     | 11/16    | 3/4        | 1-1/2     | 4             | 101.77      |
| 0321372                     | 3/4      | 3/4        | 1-1/2     | 4             | 91.06       |
| 0321374                     | 1        | 1          | 1-1/2     | 4             | 139.26      |
| <b>2 Flute AITIN Coated</b> |          |            |           |               |             |
| 0322550                     | 1/32     | 1/8        | 1/8       | 1-1/2         | \$13.13     |
| 0322552                     | 1/16     | 1/8        | 1/4       | 1-1/2         | 12.59       |
| 0322554                     | 3/32     | 1/8        | 3/8       | 1-1/2         | 12.59       |
| 0322556                     | 1/8      | 1/8        | 1/2       | 1-1/2         | 11.69       |
| 0322558                     | 5/32     | 3/16       | 9/16      | 2             | 17.09       |
| 0322560                     | 3/16     | 3/16       | 5/8       | 2             | 16.34       |
| 0322562                     | 7/32     | 1/4        | 5/8       | 2-1/2         | 23.95       |
| 0322564                     | 1/4      | 1/4        | 3/4       | 2-1/2         | 22.45       |
| 0322566                     | 9/32     | 5/16       | 3/4       | 2-1/2         | 33.75       |
| 0322568                     | 5/16     | 5/16       | 13/16     | 2-1/2         | 32.04       |
| 0322570                     | 11/32    | 3/8        | 1         | 2-1/2         | 35.57       |
| 0322572                     | 3/8      | 3/8        | 1         | 2-1/2         | 36.37       |
| 0322573                     | 7/16     | 7/16       | 1         | 2-1/2         | 47.09       |
| 0322574                     | 1/2      | 1/2        | 1         | 3             | 51.37       |
| 0322575                     | 9/16     | 9/16       | 1-1/4     | 3-1/2         | 90.52       |
| 0322576                     | 5/8      | 5/8        | 1-1/4     | 3-1/2         | 96.31       |
| 0322577                     | 11/16    | 3/4        | 1-1/2     | 4             | 142.45      |
| 0322578                     | 3/4      | 3/4        | 1-1/2     | 4             | 130.61      |
| 0322579                     | 1        | 7/8        | 1-1/2     | 4             | 196.63      |
| 0322580                     | 1        | 1          | 1-1/2     | 4             | 209.92      |

| Part No.                    | Diameter | Shank Dia. | Cut Lgth. | Overall Lgth. | Price /Each |
|-----------------------------|----------|------------|-----------|---------------|-------------|
| <b>4 Flute Uncoated</b>     |          |            |           |               |             |
| 0321765                     | 1/32     | 1/8        | 1/8       | 1-1/2         | \$9.11      |
| 0321767                     | 1/16     | 1/8        | 1/4       | 1-1/2         | 8.47        |
| 0321769                     | 3/32     | 1/8        | 3/8       | 1-1/2         | 8.47        |
| 0321771                     | 1/8      | 1/8        | 1/2       | 1-1/2         | 7.40        |
| 0321775                     | 3/16     | 3/16       | 5/8       | 2             | 10.03       |
| 0321777                     | 7/32     | 1/4        | 5/8       | 2-1/2         | 13.83       |
| 0321779                     | 1/4      | 1/4        | 3/4       | 2-1/2         | 12.59       |
| 0321781                     | 9/32     | 3/16       | 3/4       | 2-1/2         | 17.74       |
| 0321783                     | 5/16     | 5/16       | 13/16     | 2-1/2         | 17.14       |
| 0321785                     | 11/32    | 3/8        | 1         | 2-1/2         | 20.36       |
| 0321787                     | 3/8      | 3/8        | 1         | 2-1/2         | 21.00       |
| 0321788                     | 7/16     | 7/16       | 1         | 2-1/2         | 27.32       |
| 0321789                     | 1/2      | 1/2        | 1         | 3             | 29.25       |
| 0321790                     | 9/16     | 9/16       | 1-1/4     | 3-1/2         | 53.56       |
| 0321791                     | 5/8      | 5/8        | 1-1/4     | 3-1/2         | 58.92       |
| 0321792                     | 11/16    | 3/4        | 1-1/2     | 4             | 101.77      |
| 0321793                     | 3/4      | 3/4        | 1-1/2     | 4             | 91.06       |
| 0321794                     | 7/8      | 7/8        | 1-1/2     | 4             | 128.55      |
| <b>4 Flute AITIN Coated</b> |          |            |           |               |             |
| 0322680                     | 1/32     | 1/8        | 1/8       | 1-1/2         | 13.13       |
| 0322682                     | 1/16     | 1/8        | 1/4       | 1-1/2         | 12.59       |
| 0322684                     | 3/32     | 1/8        | 3/8       | 1-1/2         | 12.59       |
| 0322686                     | 1/8      | 1/8        | 1/2       | 1-1/2         | 11.69       |
| 0322688                     | 3/16     | 3/16       | 9/16      | 2             | 17.09       |
| 0322690                     | 7/32     | 3/16       | 5/8       | 2             | 16.34       |
| 0322692                     | 1/4      | 1/4        | 5/8       | 2-1/2         | 23.95       |
| 0322694                     | 9/32     | 1/4        | 3/4       | 2-1/2         | 22.45       |
| 0322696                     | 5/16     | 5/16       | 3/4       | 2-1/2         | 33.75       |
| 0322698                     | 11/32    | 5/16       | 13/16     | 2-1/2         | 32.04       |
| 0322700                     | 3/8      | 3/8        | 1         | 2-1/2         | 35.57       |
| 0322702                     | 7/16     | 3/8        | 1         | 2-1/2         | 36.37       |
| 0322703                     | 1/2      | 7/16       | 1         | 2-1/2         | 47.09       |
| 0322704                     | 9/16     | 1/2        | 1         | 3             | 51.37       |
| 0322705                     | 5/8      | 9/16       | 1-1/4     | 3-1/2         | 90.52       |
| 0322706                     | 11/16    | 5/8        | 1-1/4     | 3-1/2         | 96.31       |
| 0322707                     | 3/4      | 3/4        | 1-1/2     | 4             | 142.45      |
| 0322708                     | 7/8      | 3/4        | 1-1/2     | 4             | 130.61      |
| 0322709                     | 7/8      | 7/8        | 1-1/2     | 4             | 196.63      |
| 0322710                     | 1        | 1          | 1-1/2     | 4             | 209.92      |

### Long Length Single End



| Diameter | Shank Dia. | Cut Lgth. | Overall Lgth. | 2 Flute Uncoated |             | 4 Flute Uncoated |             |
|----------|------------|-----------|---------------|------------------|-------------|------------------|-------------|
|          |            |           |               | Part No.         | Price /Each | Part No.         | Price /Each |
| 1/8      | 1/8        | 3/4       | 2-1/4         | 0321407          | \$13.88     | 0321828          | \$13.88     |
| 5/32     | 3/16       | 3/4       | 2-1/4         | 0321408          | 18.75       | 0321829          | 18.75       |
| 3/16     | 3/16       | 3/4       | 2-1/2         | 0321409          | 15.92       | 0321830          | 15.92       |
| 1/4      | 1/4        | 1-1/8     | 3             | 0321410          | 19.82       | 0321831          | 19.82       |
| 5/16     | 5/16       | 1-1/8     | 3             | 0321411          | 26.25       | 0321832          | 26.25       |
| 3/8      | 3/8        | 1-1/8     | 3             | 0321412          | 33.06       | 0321833          | 33.06       |
| 7/16     | 7/16       | 2         | 4             | 0321413          | 53.03       | 0321834          | 53.03       |
| 1/2      | 1/2        | 2         | 4             | 0321414          | 58.82       | 0321835          | 58.82       |
| 5/8      | 5/8        | 2-1/4     | 5             | 0321415          | 119.90      | 0321836          | 119.90      |
| 3/4      | 3/4        | 2-1/4     | 5             | 0321416          | 149.46      | 0321837          | 149.46      |
| 1        | 1          | 2-1/4     | 5             |                  |             | 0321838          | 263.48      |

### Extra Long Length Single End



| Diameter | Shank Dia. | Overall Lgth. | 2 Flute Uncoated |             | 4 Flute Uncoated |             |
|----------|------------|---------------|------------------|-------------|------------------|-------------|
|          |            |               | Part No.         | Price /Each | Part No.         | Price /Each |
| 1/8      | 1/8        | 3             | 0321418          | \$16.61     | 0321839          | \$16.61     |
| 5/32     | 3/16       | 3             | 0321419          | 22.45       | 0321840          | 22.45       |
| 3/16     | 3/16       | 3             | 0321420          | 19.18       | 0321841          | 19.18       |
| 1/4      | 1/4        | 4             | 0321421          | 23.47       | 0321842          | 23.47       |
| 5/16     | 5/16       | 4             | 0321422          | 30.53       | 0321843          | 30.53       |
| 3/8      | 3/8        | 4             | 0321423          | 42.80       | 0321844          | 42.80       |
| 7/16     | 7/16       | 6             | 0321424          | 79.54       | 0321845          | 79.54       |
| 1/2      | 1/2        | 6             | 0321425          | 83.83       | 0321846          | 83.83       |
| 3/4      | 3/4        | 6             | 0321427          | 185.92      | 0321848          | 185.92      |

## Carbide End Mills Cont.

# FASTENAL

### 2 & 4 Flute Ball End Regular Length Single End

- 10% Cobalt
- Submicrograin Carbide
- 30° Helix Angle
- Center Cutting

Tolerances:  
+ .000/- .0025



| Part No.                    | Diameter | Shank Dia. | Cut Lgth. | Overall Lgth. | Price /Each |
|-----------------------------|----------|------------|-----------|---------------|-------------|
| <b>2 Flute Uncoated</b>     |          |            |           |               |             |
| 0321454                     | 1/32     | 1/8        | 1/8       | 1-1/2         | \$10.98     |
| 0321456                     | 1/16     | 1/8        | 1/8       | 1-1/2         | 10.18       |
| 0321460                     | 1/8      | 1/8        | 1/8       | 1-1/2         | 9.27        |
| 0321462                     | 5/32     | 3/16       | 3/16      | 2             | 13.39       |
| 0321464                     | 3/16     | 3/16       | 3/16      | 2             | 12.76       |
| 0321466                     | 7/32     | 1/4        | 1/4       | 2-1/2         | 17.09       |
| 0321468                     | 1/4      | 1/4        | 1/4       | 2-1/2         | 16.40       |
| 0321470                     | 5/16     | 5/16       | 5/16      | 2-1/2         | 21.38       |
| 0321472                     | 3/8      | 3/8        | 3/8       | 2-1/2         | 26.73       |
| 0321474                     | 1/2      | 1/2        | 1/2       | 3             | 41.73       |
| 0321475                     | 9/16     | 9/16       | 9/16      | 3-1/2         | 73.38       |
| 0321476                     | 5/8      | 5/8        | 5/8       | 3-1/2         | 80.88       |
| 0321478                     | 3/4      | 3/4        | 3/4       | 4             | 117.84      |
| 0321479                     | 7/8      | 7/8        | 1-1/2     | 4             | 182.01      |
| 0321480                     | 1        | 1          | 1-1/2     | 4             | 191.79      |
| <b>2 Flute AITin Coated</b> |          |            |           |               |             |
| 0322582                     | 1/32     | 1/8        | 1/8       | 1-1/2         | \$14.73     |
| 0322584                     | 1/16     | 1/8        | 1/4       | 1-1/2         | 13.88       |
| 0322586                     | 3/32     | 1/8        | 3/8       | 1-1/2         | 13.88       |
| 0322588                     | 1/8      | 1/8        | 1/2       | 1-1/2         | 12.86       |
| 0322590                     | 5/32     | 3/16       | 9/16      | 2             | 18.48       |
| 0322592                     | 3/16     | 3/16       | 5/8       | 2             | 17.68       |
| 0322594                     | 7/32     | 1/4        | 5/8       | 2-1/2         | 26.09       |
| 0322596                     | 1/4      | 1/4        | 3/4       | 2-1/2         | 25.71       |
| 0322597                     | 9/32     | 5/16       | 3/4       | 2-1/2         | 38.52       |
| 0322598                     | 5/16     | 5/16       | 13/16     | 2-1/2         | 34.28       |
| 0322599                     | 11/32    | 3/8        | 1         | 2-1/2         | 40.02       |
| 0322600                     | 3/8      | 3/8        | 1         | 2-1/2         | 39.64       |
| 0322601                     | 7/16     | 7/16       | 1         | 2-1/2         | 51.32       |
| 0322602                     | 1/2      | 1/2        | 1         | 3             | 57.85       |
| 0322603                     | 9/16     | 9/16       | 1-1/4     | 3-1/2         | 99.09       |
| 0322604                     | 5/8      | 5/8        | 1-1/4     | 3-1/2         | 107.12      |
| 0322605                     | 11/16    | 3/4        | 1-1/2     | 4             | 163.88      |
| 0322606                     | 3/4      | 3/4        | 1-1/2     | 4             | 148.94      |
| 0322607                     | 7/8      | 7/8        | 1-1/2     | 4             | 219.50      |
| 0322608                     | 1        | 1          | 1-1/2     | 4             | 230.31      |
| <b>4 Flute Uncoated</b>     |          |            |           |               |             |
| 0321660                     | 1/32     | 1/8        | 1/8       | 1-1/2         | \$10.98     |
| 0321662                     | 1/16     | 1/8        | 1/4       | 1-1/2         | 10.18       |
| 0321664                     | 3/32     | 1/8        | 3/8       | 1-1/2         | 10.18       |
| 0321666                     | 1/8      | 1/8        | 1/2       | 1-1/2         | 9.27        |
| 0321668                     | 5/32     | 3/16       | 9/16      | 2             | 13.39       |
| 0321670                     | 3/16     | 3/16       | 5/8       | 2             | 12.76       |
| 0321672                     | 7/32     | 1/4        | 5/8       | 2-1/2         | 17.09       |
| 0321674                     | 1/4      | 1/4        | 3/4       | 2-1/2         | 16.40       |
| 0321676                     | 5/16     | 5/16       | 13/16     | 2-1/2         | 21.38       |
| 0321678                     | 3/8      | 3/8        | 1         | 2-1/2         | 26.73       |
| 0321679                     | 7/16     | 7/16       | 1         | 2-3/4         | 35.89       |
| 0321680                     | 1/2      | 1/2        | 1         | 3             | 41.73       |
| 0321681                     | 9/16     | 9/16       | 1-1/4     | 3-1/2         | 73.38       |
| 0321682                     | 5/8      | 5/8        | 1-1/4     | 3-1/2         | 80.88       |
| 0321684                     | 3/4      | 3/4        | 1-1/2     | 4             | 117.84      |
| 0321686                     | 1        | 1          | 1-1/2     | 4             | 191.79      |
| <b>4 Flute Coated</b>       |          |            |           |               |             |
| 0322652                     | 1/32     | 1/8        | 1/8       | 1-1/2         | \$14.73     |
| 0322654                     | 1/16     | 1/8        | 1/4       | 1-1/2         | 13.88       |
| 0322656                     | 3/32     | 1/8        | 3/8       | 1-1/2         | 13.88       |
| 0322658                     | 1/8      | 1/8        | 1/2       | 1-1/2         | 12.86       |

| Part No.                    | Diameter | Shank Dia. | Cut Lgth. | Overall Lgth. | Price /Each |
|-----------------------------|----------|------------|-----------|---------------|-------------|
| <b>4 Flute Coated Cont.</b> |          |            |           |               |             |
| 0322660                     | 5/32     | 3/16       | 9/16      | 2             | \$18.48     |
| 0322662                     | 3/16     | 3/16       | 5/8       | 2             | 17.68       |
| 0322664                     | 7/32     | 1/4        | 5/8       | 2-1/2         | 26.09       |
| 0322666                     | 1/4      | 1/4        | 3/4       | 2-1/2         | 25.71       |
| 0322667                     | 9/32     | 5/16       | 3/4       | 2-1/2         | 38.52       |
| 0322668                     | 5/16     | 5/16       | 13/16     | 2-1/2         | 34.28       |
| 0322669                     | 11/30    | 3/8        | 1         | 2-1/2         | 40.02       |
| 0322670                     | 3/8      | 3/8        | 1         | 2-1/2         | 39.64       |
| 0322671                     | 7/16     | 7/16       | 1         | 2-1/2         | 51.32       |
| 0322672                     | 1/2      | 1/2        | 1         | 3             | 57.85       |
| 0322673                     | 9/16     | 9/16       | 1-1/4     | 3-1/2         | 99.09       |
| 0322674                     | 5/8      | 5/8        | 1-1/4     | 3-1/2         | 107.12      |
| 0322675                     | 11/16    | 3/4        | 1-1/2     | 4             | 163.88      |
| 0322676                     | 3/4      | 3/4        | 1-1/2     | 4             | 148.94      |
| 0322677                     | 7/8      | 7/8        | 1-1/2     | 4             | 219.50      |
| 0322678                     | 1        | 1          | 1-1/2     | 4             | 230.31      |

### 2 & 4 Flute Ball End Long Length Single End

| Part No.                | Diameter | Shank Dia. | Cut Lgth. | Overall Lgth. | Price /Each |
|-------------------------|----------|------------|-----------|---------------|-------------|
| <b>2 Flute Uncoated</b> |          |            |           |               |             |
| 0321509                 | 1/8      | 1/8        | 3/4       | 2-1/4         | \$15.97     |
| 0321511                 | 3/16     | 3/16       | 3/4       | 2-1/2         | 18.28       |
| 0321512                 | 1/4      | 1/4        | 1-1/8     | 3             | 22.56       |
| 0321513                 | 5/16     | 5/16       | 1-1/8     | 3             | 29.95       |
| 0321514                 | 3/8      | 3/8        | 1-1/8     | 3             | 38.03       |
| 0321515                 | 7/16     | 7/16       | 2         | 4             | 60.53       |
| 0321516                 | 1/2      | 1/2        | 2         | 4             | 66.95       |
| 0321517                 | 5/8      | 5/8        | 2-1/4     | 5             | 138.13      |
| 0321518                 | 3/4      | 3/4        | 2-1/4     | 5             | 171.29      |
| 0321519                 | 1        | 1          | 2-1/4     | 5             | 299.84      |
| <b>4 Flute Uncoated</b> |          |            |           |               |             |
| 0321715                 | 1/8      | 1/8        | 3/4       | 2-1/4         | \$15.97     |
| 0321717                 | 3/16     | 3/16       | 3/4       | 2-1/2         | 18.28       |
| 0321718                 | 1/4      | 1/4        | 1-1/8     | 3             | 22.56       |
| 0321719                 | 5/16     | 5/16       | 1-1/8     | 3             | 29.95       |
| 0321720                 | 3/8      | 3/8        | 1-1/8     | 3             | 38.03       |
| 0321721                 | 7/16     | 7/16       | 2         | 4             | 60.53       |
| 0321722                 | 1/2      | 1/2        | 2         | 4             | 66.95       |
| 0321723                 | 5/8      | 5/8        | 2-1/4     | 5             | 138.13      |
| 0321724                 | 3/4      | 3/4        | 2-1/4     | 5             | 171.29      |
| 0321725                 | 1        | 1          | 2-1/4     | 5             | 299.84      |

### 2 & 4 Flute Ball End Extra Long Length Single End

| Part No.                | Diameter | Shank Dia. | Cut Lgth. | Overall Lgth. | Price   |
|-------------------------|----------|------------|-----------|---------------|---------|
| <b>2 Flute Uncoated</b> |          |            |           |               |         |
| 0321520                 | 1/8      | 1/8        | 1         | 3             | \$20.31 |
| 0321522                 | 3/16     | 3/16       | 1-1/8     | 3             | 23.47   |
| 0321523                 | 1/4      | 1/4        | 1-1/2     | 4             | 28.39   |
| 0321524                 | 5/16     | 5/16       | 1-5/8     | 4             | 37.39   |
| 0321525                 | 3/8      | 3/8        | 1-3/4     | 4             | 52.39   |
| 0321526                 | 7/16     | 7/16       | 3         | 6             | 97.43   |
| 0321527                 | 1/2      | 1/2        | 3         | 6             | 102.74  |
| 0321528                 | 5/8      | 5/8        | 3         | 6             | 179.43  |
| 0321529                 | 3/4      | 3/4        | 3         | 6             | 227.12  |
| 0321530                 | 1        | 1          | 3         | 6             | 360.50  |
| <b>4 Flute Uncoated</b> |          |            |           |               |         |
| 0321726                 | 1/8      | 1/8        | 1         | 3             | 20.31   |
| 0321728                 | 3/16     | 3/16       | 1-1/8     | 3             | 23.47   |
| 0321729                 | 1/4      | 1/4        | 1-1/2     | 4             | 28.39   |
| 0321730                 | 5/16     | 5/16       | 1-5/8     | 4             | 37.39   |
| 0321731                 | 3/8      | 3/8        | 1-3/4     | 4             | 52.39   |
| 0321732                 | 7/16     | 7/16       | 3         | 6             | 97.43   |
| 0321733                 | 1/2      | 1/2        | 3         | 6             | 102.74  |
| 0321734                 | 5/8      | 5/8        | 3         | 6             | 179.43  |
| 0321735                 | 3/4      | 3/4        | 3         | 6             | 227.12  |
| 0321736                 | 1        | 1          | 3         | 6             | 360.50  |

### 3 & 5 Flute End Mills

#### ECCENTRIC GROUND FEATURES:

- 10% Cobalt
- Submicrograin Carbide
- 50° Helix Angle
- Special Eccentric Edge Grind
- Center Cutting
- AITIN Coating

TOLERANCES: +.000/- .0015

| Part No.                           | Diameter | Shank Dia. | Cut Lgth. | Overall Lgth. | Price /Each |
|------------------------------------|----------|------------|-----------|---------------|-------------|
| <b>3 Flute AITIN Coated</b>        |          |            |           |               |             |
| 0322757                            | 1/4      | 1/4        | 3/4       | 2-1/2         | \$34.82     |
| 0322758                            | 5/16     | 5/16       | 13/16     | 2-1/2         | 38.52       |
| 0322759                            | 3/8      | 3/8        | 1         | 2-1/2         | 51.69       |
| 0322760                            | 7/16     | 7/16       | 1         | 2-3/4         | 69.10       |
| 0322761                            | 1/2      | 1/2        | 1         | 3             | 81.68       |
| 0322762                            | 9/16     | 9/16       | 1-1/4     | 3-1/2         | 92.03       |
| 0322763                            | 5/8      | 5/8        | 1-1/4     | 3-1/2         | 99.89       |
| 0322764                            | 11/16    | 11/16      | 1-1/2     | 4             | 154.2       |
| 0322765                            | 3/4      | 3/4        | 1-1/2     | 4             | 192.31      |
| <b>3 Flute AITIN Coated (Long)</b> |          |            |           |               |             |
| 0322766                            | 1/4      | 1/4        | 1-1/8     | 3             | \$41.68     |
| 0322767                            | 5/16     | 5/16       | 1-1/8     | 3             | 46.33       |
| 0322768                            | 3/8      | 3/8        | 1-1/8     | 3             | 61.87       |
| 0322769                            | 7/16     | 7/16       | 2         | 4             | 90.25       |
| 0322770                            | 1/2      | 1/2        | 2         | 4             | 110.32      |
| 0322771                            | 5/8      | 5/8        | 2-1/4     | 5             | 170.88      |
| 0322772                            | 3/4      | 3/4        | 2-1/4     | 5             | 220.63      |
| <b>5 Flute AITIN Coated</b>        |          |            |           |               |             |
| 0322773                            | 3/8      | 3/8        | 1         | 2-1/2         | 67.39       |
| 0322774                            | 7/16     | 7/16       | 1         | 2-3/4         | 84.58       |
| 0322775                            | 1/2      | 1/2        | 1         | 3             | 99.89       |
| 0322776                            | 9/16     | 9/16       | 1-1/4     | 3-1/2         | 113.82      |
| 0322777                            | 5/8      | 5/8        | 1-1/4     | 3-1/2         | 127.00      |
| 0322778                            | 11/16    | 11/16      | 1-1/2     | 4             | 168.10      |
| 0322779                            | 3/4      | 3/4        | 1-1/2     | 4             | 208.17      |
| 0322780                            | 7/8      | 7/8        | 1-1/2     | 4             | 234.54      |
| 0322781                            | 1        | 1          | 1-1/2     | 4             | 292.42      |
| <b>5 Flute AITIN Coated (Long)</b> |          |            |           |               |             |
| 0322782                            | 3/8      | 3/8        | 1-1/8     | 3             | \$74.94     |
| 0322783                            | 7/16     | 7/16       | 2         | 4             | 100.97      |
| 0322784                            | 1/2      | 1/2        | 2         | 4             | 119.90      |
| 0322785                            | 5/8      | 5/8        | 2-1/4     | 5             | 174.59      |
| 0322786                            | 3/4      | 3/4        | 2-1/4     | 5             | 227.12      |
| 0322787                            | 1        | 1          | 2-1/4     | 5             | 337.43      |

### Stub Length End Mills Double End, 2 Flute Square End

| Part No.                    | Diameter | Shank Dia. | Cut Lgth. | Overall Lgth. | Price /Each |
|-----------------------------|----------|------------|-----------|---------------|-------------|
| <b>2 Flute Uncoated</b>     |          |            |           |               |             |
| 0321533                     | 1/16     | 1/8        | 1/8       | 1-1/2         | \$9.71      |
| 0321535                     | 3/32     | 1/8        | 3/16      | 1-1/2         | 9.71        |
| 0321537                     | 1/8      | 1/8        | 1/4       | 1-1/2         | 8.84        |
| 0321539                     | 5/32     | 3/16       | 5/16      | 2             | 13.66       |
| 0321541                     | 3/16     | 3/16       | 3/8       | 2             | 12.81       |
| 0321543                     | 7/32     | 1/4        | 1/2       | 2-1/2         | 17.68       |
| 0321545                     | 1/4      | 1/4        | 1/2       | 2-1/2         | 16.94       |
| 0321547                     | 5/16     | 5/16       | 1/2       | 2-1/2         | 18.86       |
| 0321549                     | 3/8      | 3/8        | 9/16      | 2-1/2         | 22.03       |
| 0321550                     | 7/16     | 7/16       | 5/8       | 2-1/2         | 32.04       |
| 0321551                     | 1/2      | 1/2        | 5/8       | 3             | 37.45       |
| <b>2 Flute AITIN Coated</b> |          |            |           |               |             |
| 0322611                     | 1/16     | 1/8        | 1/8       | 1-1/2         | \$20.89     |
| 0322613                     | 3/32     | 1/8        | 3/16      | 1-1/2         | 20.89       |
| 0322615                     | 1/8      | 1/8        | 1/4       | 1-1/2         | 19.18       |
| 0322617                     | 5/32     | 3/16       | 5/16      | 2             | 28.39       |
| 0322619                     | 3/16     | 3/16       | 3/8       | 2             | 27.75       |
| 0322621                     | 7/32     | 1/4        | 1/2       | 2-1/2         | 39.59       |
| 0322623                     | 1/4      | 1/4        | 1/2       | 2-1/2         | 38.47       |
| 0322625                     | 5/16     | 5/16       | 1/2       | 2-1/2         | 51.32       |
| 0322627                     | 3/8      | 3/8        | 9/16      | 2-1/2         | 53.46       |
| 0322628                     | 7/16     | 7/16       | 5/8       | 2-1/2         | 72.31       |
| 0322629                     | 1/2      | 1/2        | 5/8       | 3             | 79.22       |

End Mills

# CARBIDE END MILLS

## Carbide End Mills Cont.

# FASTENAL

End Mills

### Stub Length End Mills Double End, 2 Flute Square End Cont.

| Part No.                    | Diameter | Shank Dia. | Cut Lgth. | Overall Lgth. | Price /Each |
|-----------------------------|----------|------------|-----------|---------------|-------------|
| <b>4 Flute Uncoated</b>     |          |            |           |               |             |
| 0321879                     | 1/16     | 1/8        | 1/8       | 1-1/2         | \$9.71      |
| 0321881                     | 3/32     | 1/8        | 3/16      | 1-1/2         | 9.71        |
| 0321883                     | 1/8      | 1/8        | 1/4       | 1-1/2         | 8.84        |
| 0321885                     | 5/32     | 3/16       | 5/16      | 2             | 13.66       |
| 0321887                     | 3/16     | 3/16       | 3/8       | 2             | 12.81       |
| 0321889                     | 7/32     | 1/4        | 1/2       | 2-1/2         | 17.68       |
| 0321891                     | 1/4      | 1/4        | 1/2       | 2-1/2         | 16.94       |
| 0321893                     | 5/16     | 5/16       | 1/2       | 2-1/2         | 18.86       |
| 0321895                     | 3/8      | 3/8        | 9/16      | 2-1/2         | 22.03       |
| 0321896                     | 7/16     | 7/16       | 5/8       | 2-1/2         | 32.04       |
| 0321897                     | 1/2      | 1/2        | 5/8       | 3             | 37.45       |
| <b>4 Flute AITIN Coated</b> |          |            |           |               |             |
| 0322713                     | 1/16     | 1/8        | 1/8       | 1-1/2         | \$17.74     |
| 0322715                     | 3/32     | 1/8        | 3/16      | 1-1/2         | 17.74       |
| 0322717                     | 1/8      | 1/8        | 1/4       | 1-1/2         | 16.61       |
| 0322719                     | 5/32     | 3/16       | 5/16      | 2             | 24.37       |
| 0322721                     | 3/16     | 3/16       | 3/8       | 2             | 23.52       |
| 0322723                     | 7/32     | 1/4        | 1/2       | 2-1/2         | 34.82       |
| 0322725                     | 1/4      | 1/4        | 1/2       | 2-1/2         | 34.23       |
| 0322727                     | 5/16     | 5/16       | 1/2       | 2-1/2         | 43.87       |
| 0322729                     | 3/8      | 3/8        | 9/16      | 2-1/2         | 47.67       |
| 0322730                     | 7/16     | 7/16       | 5/8       | 2-1/2         | 64.17       |
| 0322731                     | 1/2      | 1/2        | 5/8       | 3             | 69.58       |

### Double Ball End Stub Length

- 10% Cobalt
- Submicrograin Carbide
- 30° Helix Angle
- Center Cutting

Tolerances:

+ .000/- .0025



| Part No.                    | Diameter | Shank Dia. | Cut Lgth. | Overall Lgth. | Price /Each |
|-----------------------------|----------|------------|-----------|---------------|-------------|
| <b>2 Flute Uncoated</b>     |          |            |           |               |             |
| 0321575                     | 1/16     | 1/8        | 1/8       | 1-1/2         | 13.66       |
| 0321577                     | 3/32     | 1/8        | 3/16      | 1-1/2         | 13.66       |
| 0321579                     | 1/8      | 1/8        | 1/4       | 1-1/2         | 11.74       |
| 0321581                     | 5/32     | 3/16       | 5/16      | 2             | 18.16       |
| 0321583                     | 3/16     | 3/16       | 3/8       | 2             | 16.88       |
| 0321585                     | 7/32     | 1/4        | 1/2       | 2-1/2         | 23.04       |
| 0321587                     | 1/4      | 1/4        | 1/2       | 2-1/2         | 21.81       |
| 0321589                     | 5/16     | 5/16       | 1/2       | 2-1/2         | 27.32       |
| 0321591                     | 3/8      | 3/8        | 9/16      | 2-1/2         | 28.82       |
| 0321592                     | 7/16     | 7/16       | 5/8       | 2-1/2         | 41.73       |
| 0321593                     | 1/2      | 1/2        | 5/8       | 3             | 49.18       |
| <b>2 Flute AITIN Coated</b> |          |            |           |               |             |
| 0322632                     | 1/16     | 1/8        | 1/8       | 1-1/2         | \$20.89     |
| 0322634                     | 3/32     | 1/8        | 3/16      | 1-1/2         | 20.89       |
| 0322636                     | 1/8      | 1/8        | 1/4       | 1-1/2         | 19.18       |
| 0322638                     | 5/32     | 3/16       | 5/16      | 2             | 28.39       |
| 0322640                     | 3/16     | 3/16       | 3/8       | 2             | 27.75       |
| 0322642                     | 7/32     | 1/4        | 1/2       | 2-1/2         | 39.59       |
| 0322644                     | 1/4      | 1/4        | 1/2       | 2-1/2         | 38.47       |
| 0322646                     | 5/16     | 5/16       | 1/2       | 2-1/2         | 51.32       |
| 0322648                     | 3/8      | 3/8        | 9/16      | 2-1/2         | 53.46       |
| 0322649                     | 7/16     | 7/16       | 5/8       | 2-1/2         | 72.31       |
| 0322650                     | 1/2      | 1/2        | 5/8       | 3             | 79.22       |

| Part No.                    | Diameter | Shank Dia. | Cut Lgth. | Overall Lgth. | Price /Each |
|-----------------------------|----------|------------|-----------|---------------|-------------|
| <b>4 Flute Uncoated</b>     |          |            |           |               |             |
| 0321921                     | 1/16     | 1/8        | 1/8       | 1-1/2         | \$13.66     |
| 0321923                     | 3/32     | 1/8        | 3/16      | 1-1/2         | 13.66       |
| 0321925                     | 1/8      | 1/8        | 1/4       | 1-1/2         | 11.74       |
| 0321927                     | 5/32     | 3/16       | 5/16      | 2             | 18.16       |
| 0321929                     | 3/16     | 3/16       | 3/8       | 2             | 16.88       |
| 0321931                     | 7/32     | 1/4        | 1/2       | 2-1/2         | 23.04       |
| 0321933                     | 1/4      | 1/4        | 1/2       | 2-1/2         | 21.81       |
| 0321935                     | 5/16     | 5/16       | 1/2       | 2-1/2         | 27.32       |
| 0321937                     | 3/8      | 3/8        | 9/16      | 2-1/2         | 28.82       |
| 0321938                     | 7/16     | 7/16       | 5/8       | 2-1/2         | 41.73       |
| 0321939                     | 1/2      | 1/2        | 5/8       | 3             | 49.18       |
| <b>4 Flute AITIN Coated</b> |          |            |           |               |             |
| 0322734                     | 1/16     | 1/8        | 1/8       | 1-1/2         | \$20.89     |
| 0322736                     | 3/32     | 1/8        | 3/16      | 1-1/2         | 20.89       |
| 0322738                     | 1/8      | 1/8        | 1/4       | 1-1/2         | 19.18       |
| 0322740                     | 5/32     | 3/16       | 5/16      | 2             | 28.39       |
| 0322742                     | 3/16     | 3/16       | 3/8       | 2             | 27.75       |
| 0322744                     | 7/32     | 1/4        | 1/2       | 2-1/2         | 39.59       |
| 0322746                     | 1/4      | 1/4        | 1/2       | 2-1/2         | 38.47       |
| 0322748                     | 5/16     | 5/16       | 1/2       | 2-1/2         | 51.32       |
| 0322750                     | 3/8      | 3/8        | 9/16      | 2-1/2         | 53.46       |
| 0322751                     | 7/16     | 7/16       | 5/8       | 2-1/2         | 72.31       |
| 0322752                     | 1/2      | 1/2        | 5/8       | 3             | 79.22       |

### End Mill Speed & Feed Chart for Solid Carbide End Mills

| Description             | Speed (S.F.M.) | End Mill Dia. Up to 1/4" | Feed Per Tooth (Inches) Up to 1/2" | Up to 1"    |
|-------------------------|----------------|--------------------------|------------------------------------|-------------|
| Aluminum                | 600-1200       | .0002-.0020              | .0020-.0040                        | .0040-.0080 |
| Brass/Bronze            | 200-350        | .0005-.0020              | .0020-.0030                        | .0030-.0050 |
| Copper Alloys           | 350-900        | .0005-.0020              | .0020                              | .0020-.0060 |
| Iron-Cast (soft)        | 200-500        | .0005-.0020              | .0020-.0030                        | .0030-.0080 |
| Iron-Cast (hard)        | 80-350         | .0003-.0008              | .0008-.0020                        | .0020-.0040 |
| Iron-Ductile            | 80-400         | .0002-.0010              | .0010-.0020                        | .0020-.0060 |
| Iron-Malleable          | 200-600        | .0002-.0010              | .0010-.0030                        | .0030-.0070 |
| Magnesium               | 800-1400       | .0005-.0020              | .0020-.0040                        | .0040-.0100 |
| Monel/High/Nickel Steel | 150-300        | .0002-.0010              | .0010-.0020                        | .0020-.0040 |
| Alloys                  | 20-130         | .0005-.0008              | .0008-.0010                        | .0010-.0020 |
| Plastics                | 600-1200       | .0006-.0030              | .0030-.0060                        | .0060-.0150 |
| Glass Filled            | 300-800        | .0006-.0030              | .0030-.0040                        | .0040-.0120 |
| Retractory/Alloys       | 80-400         | .0002-.0010              | .0010                              | .0010-.0020 |
| Steel-Low/Carbon        | 200-500        | .0002-.0010              | .0010-.0030                        | .0030-.0070 |
| Steel-Medium/Carbon     | 100-250        | .0004-.0015              | .0015-.0020                        | .0020-.0050 |
| Steel-Hardened          | 25-120         | .0002-.0005              | .0005-.0010                        | .0010-.0030 |
| Steel-Mold              | 200-350        | .0002-.0010              | .0010-.0020                        | .0020-.0060 |
| Steel-Tool              | 100-300        | .0002-.0010              | .0010-.0020                        | .0020-.0080 |
| Stainless/Steel-Hard    | 50-200         | .0002-.0005              | .0005-.0010                        | .0010-.0050 |
| Titanium-Soft           | 120-350        | .0002-.0010              | .0010-.0020                        | .0020-.0060 |
| Titanium-Hard           | 30-150         | .0002-.0005              | .0005-.0010                        | .0010-.0040 |



## Niagara Cutter

### Elite Series 2 Flute Carbide End Mill

#### A245 - Single-End, Center-Cutting

- 30° Helix
- Maximum Metal Removal Rates
- Optimal Feed Rates
- Standard with Chamfer
- Form Ground Flutes



| Part No. | Diameter | Coating  | Flute Lgth. | Shank Dia. | Price /Each |
|----------|----------|----------|-------------|------------|-------------|
| 0327270  | 1/8      | Uncoated | 1/4         | 1/8        | \$12.82:    |
| 0327271  | 1/8      | Uncoated | 3/8         | 1/8        | 14.15:      |
| 0327272  | 1/4      | Uncoated | 3/8         | 1/4        | 23.82:      |
| 0327273  | 1/4      | Uncoated | 1-1/4       | 1/4        | 41.25:      |
| 0327274  | 3/8      | Uncoated | 1/2         | 3/8        | 30.12:      |
| 0327275  | 3/8      | Uncoated | 1           | 3/8        | 33.26:      |
| 0327276  | 1/2      | Uncoated | 5/8         | 1/2        | 48.50:      |
| 0327277  | 1/2      | Uncoated | 1-1/4       | 1/2        | 53.83:      |
| 0327278  | 1/2      | Uncoated | 2           | 1/2        | 84.79:      |
| 0327279  | 5/8      | Uncoated | 1-5/8       | 5/8        | 102.21:     |
| 0327280  | 3/4      | Uncoated | 1-5/8       | 3/4        | 141.04:     |
| 0327281  | 3/4      | Uncoated | 2-1/4       | 3/4        | 184.95:     |
| 0327282  | 1        | Uncoated | 2           | 1          | 253.53:     |
| 0327283  | 1/8      | TiCN Ctd | 1/4         | 1/8        | 14.40:      |
| 0327284  | 1/8      | TiCN Ctd | 3/8         | 1/8        | 15.84:      |
| 0327285  | 1/4      | TiCN Ctd | 3/8         | 1/4        | 26.73:      |
| 0327286  | 1/4      | TiCN Ctd | 1-1/4       | 1/4        | 46.20:      |
| 0327287  | 3/8      | TiCN Ctd | 1/2         | 3/8        | 33.75:      |
| 0327288  | 3/8      | TiCN Ctd | 1           | 3/8        | 37.26:      |
| 0327289  | 1/2      | TiCN Ctd | 5/8         | 1/2        | 54.31:      |
| 0327290  | 1/2      | TiCN Ctd | 1-1/4       | 1/2        | 60.24:      |
| 0327291  | 1/2      | TiCN Ctd | 2           | 1/2        | 94.95:      |
| 0327292  | 5/8      | TiCN Ctd | 1-5/8       | 5/8        | 114.43:     |
| 0327293  | 3/4      | TiCN Ctd | 1-5/8       | 3/4        | 157.97:     |
| 0327294  | 3/4      | TiCN Ctd | 2-1/4       | 3/4        | 207.08:     |
| 0327295  | 1        | TiCN Ctd | 2           | 1          | 284.02:     |

## Carbide End Mills Cont.

# FASTENAL

### High Performance 3 Flute Roughing End Mill

#### AR330 - Single-End, Center-Cutting

- 30° Helix
- Maximum Metal Removal Rates
- Optimal Feed Rates
- Standard with Chamfer
- Form Ground Flutes



| Part No. | Diameter | No. of Flutes | Coating  | Flute Lgth. | Shank Dia. | Price /Each |
|----------|----------|---------------|----------|-------------|------------|-------------|
| 0327296  | 1/4      | 3             | Uncoated | 3/4         | 1/4        | \$41.85:    |
| 0327297  | 3/8      | 3             | Uncoated | 1           | 3/8        | 58.67:      |
| 0327298  | 1/2      | 3             | Uncoated | 5/8         | 1/2        | 70.28:      |
| 0327299  | 1/2      | 3             | Uncoated | 1-1/4       | 1/2        | 77.05:      |
| 0327300  | 5/8      | 3             | Uncoated | 1-5/8       | 5/8        | 128.70:     |
| 0327301  | 3/4      | 3             | Uncoated | 1-5/8       | 3/4        | 169.46:     |
| 0327302  | 1/4      | 3             | TiCN Ctd | 3/4         | 1/4        | 46.94:      |
| 0327303  | 3/8      | 3             | TiCN Ctd | 1           | 3/8        | 65.69:      |
| 0327304  | 1/2      | 3             | TiCN Ctd | 5/8         | 1/2        | 78.74:      |
| 0327305  | 1/2      | 3             | TiCN Ctd | 1-1/4       | 1/2        | 86.25:      |
| 0327306  | 5/8      | 3             | TiCN Ctd | 1-5/8       | 5/8        | 144.18:     |
| 0327307  | 3/4      | 3             | TiCN Ctd | 1-5/8       | 3/4        | 189.79:     |

### Elite Series 3 Flute Carbide End Mills

#### A345 - Single-End, Center-Cutting

- Full Form Ground Flute Shape
- Eccentric Primary Relief
- Ideal for Peripheral Milling
- Cylindrical Land
- Ultra High Transverse Rupture Strength



| Part No. | Diameter | Coating  | Flute Lgth. | Shank Dia. | Price /Each |
|----------|----------|----------|-------------|------------|-------------|
| 0327308  | 1/8      | Uncoated | 1/4         | 1/8        | \$12.82:    |
| 0327309  | 1/8      | Uncoated | 3/8         | 1/8        | 14.15:      |
| 0327310  | 3/16     | Uncoated | 5/16        | 3/16       | 17.54:      |
| 0327311  | 3/16     | Uncoated | 9/16        | 3/16       | 25.52:      |
| 0327312  | 1/4      | Uncoated | 3/8         | 1/4        | 23.82:      |
| 0327313  | 1/4      | Uncoated | 3/4         | 1/4        | 26.49:      |
| 0327314  | 1/4      | Uncoated | 1-1/4       | 1/4        | 41.25:      |
| 0327315  | 5/16     | Uncoated | 7/16        | 5/16       | 28.31:      |
| 0327316  | 5/16     | Uncoated | 13/16       | 5/16       | 31.45:      |
| 0327317  | 3/8      | Uncoated | 1/2         | 3/8        | 35.08:      |
| 0327318  | 3/8      | Uncoated | 1           | 3/8        | 38.94:      |
| 0327319  | 3/8      | Uncoated | 1-1/2       | 3/8        | 59.64:      |
| 0327320  | 1/2      | Uncoated | 5/8         | 1/2        | 53.59:      |
| 0327321  | 1/2      | Uncoated | 1-1/4       | 1/2        | 59.64:      |
| 0327322  | 1/2      | Uncoated | 2           | 1/2        | 84.79:      |
| 0327323  | 5/8      | Uncoated | 1-5/8       | 5/8        | 130.27:     |
| 0327324  | 3/4      | Uncoated | 1-5/8       | 3/4        | 153.38:     |
| 0327325  | 1        | Uncoated | 2-5/8       | 1          | 273.61:     |
| 0327326  | 1/8      | TiCN Ctd | 1/4         | 1/8        | 14.40:      |
| 0327327  | 1/8      | TiCN Ctd | 3/8         | 1/8        | 15.84:      |
| 0327328  | 3/16     | TiCN Ctd | 5/16        | 3/16       | 19.59:      |
| 0327329  | 3/16     | TiCN Ctd | 9/16        | 3/16       | 28.54:      |
| 0327330  | 1/4      | TiCN Ctd | 3/8         | 1/4        | 26.73:      |
| 0327331  | 1/4      | TiCN Ctd | 3/4         | 1/4        | 29.64:      |
| 0327332  | 1/4      | TiCN Ctd | 1-1/4       | 1/4        | 46.20:      |
| 0327333  | 5/16     | TiCN Ctd | 7/16        | 5/16       | 31.69:      |
| 0327334  | 5/16     | TiCN Ctd | 13/16       | 5/16       | 35.20:      |
| 0327335  | 3/8      | TiCN Ctd | 1/2         | 3/8        | 39.31:      |
| 0327336  | 3/8      | TiCN Ctd | 1           | 3/8        | 43.66:      |
| 0327337  | 3/8      | TiCN Ctd | 1-1/2       | 3/8        | 66.77:      |
| 0327338  | 1/2      | TiCN Ctd | 5/8         | 1/2        | 59.99:      |
| 0327339  | 1/2      | TiCN Ctd | 1-1/4       | 1/2        | 66.77:      |
| 0327340  | 1/2      | TiCN Ctd | 2           | 1/2        | 94.95:      |
| 0327341  | 5/8      | TiCN Ctd | 1-5/8       | 5/8        | 145.88:     |
| 0327342  | 3/4      | TiCN Ctd | 1-5/8       | 3/4        | 171.76:     |
| 0327343  | 1        | TiCN Ctd | 2-5/8       | 1          | 306.40:     |

### Elite Series 3Flute Carbide End Mill

#### S335 - Single-End, Center Cutting

- Advanced Flute Geometries
- Ideal for Slotting
- Ultra High Transverse Rupture Strength
- Standard With Corner Radius



| Part No. | Diameter | Coating   | Flute Lgth. | Shank Dia. | Price /Each |
|----------|----------|-----------|-------------|------------|-------------|
| 0327344  | 1/8      | Uncoated  | 1/4         | 1/8        | \$16.82:    |
| 0327345  | 1/8      | Uncoated  | 1/2         | 1/8        | 18.75:      |
| 0327346  | 5/32     | Uncoated  | 5/16        | 3/16       | 20.20:      |
| 0327347  | 3/16     | Uncoated  | 5/16        | 3/16       | 18.14:      |
| 0327348  | 3/16     | Uncoated  | 9/16        | 3/16       | 20.20:      |
| 0327349  | 7/32     | Uncoated  | 3/8         | 1/4        | 21.54:      |
| 0327350  | 1/4      | Uncoated  | 3/8         | 1/4        | 19.59:      |
| 0327351  | 1/4      | Uncoated  | 3/4         | 1/4        | 21.77:      |
| 0327352  | 5/16     | Uncoated  | 7/16        | 5/16       | 24.68:      |
| 0327353  | 5/16     | Uncoated  | 13/16       | 5/16       | 27.33:      |
| 0327354  | 3/8      | Uncoated  | 1/2         | 3/8        | 30.48:      |
| 0327355  | 3/8      | Uncoated  | 1           | 3/8        | 33.87:      |
| 0327356  | 1/2      | Uncoated  | 5/8         | 1/2        | 46.94:      |
| 0327357  | 1/2      | Uncoated  | 1-1/4       | 1/2        | 52.13:      |
| 0327358  | 5/8      | Uncoated  | 1-5/8       | 5/8        | 109.84:     |
| 0327359  | 3/4      | Uncoated  | 1-5/8       | 3/4        | 142.25:     |
| 0327360  | 1        | Uncoated  | 2           | 1          | 226.31:     |
| 0327361  | 1/8      | TiAIN Ctd | 1/4         | 1/8        | 18.87:      |
| 0327362  | 1/8      | TiAIN Ctd | 1/2         | 1/8        | 21.05:      |
| 0327363  | 5/32     | TiAIN Ctd | 5/16        | 3/16       | 22.62:      |
| 0327364  | 3/16     | TiAIN Ctd | 5/16        | 3/16       | 20.33:      |
| 0327365  | 3/16     | TiAIN Ctd | 9/16        | 3/16       | 22.62:      |
| 0327366  | 7/32     | TiAIN Ctd | 3/8         | 1/4        | 24.07:      |
| 0327367  | 1/4      | TiAIN Ctd | 3/8         | 1/4        | 21.89:      |
| 0327368  | 1/4      | TiAIN Ctd | 3/4         | 1/4        | 24.43:      |
| 0327369  | 5/16     | TiAIN Ctd | 7/16        | 5/16       | 27.58:      |
| 0327370  | 5/16     | TiAIN Ctd | 13/16       | 5/16       | 30.61:      |
| 0327371  | 3/8      | TiAIN Ctd | 1/2         | 3/8        | 34.11:      |
| 0327372  | 3/8      | TiAIN Ctd | 1           | 3/8        | 37.98:      |
| 0327373  | 1/2      | TiAIN Ctd | 5/8         | 1/2        | 52.62:      |
| 0327374  | 1/2      | TiAIN Ctd | 1-1/4       | 1/2        | 58.43:      |
| 0327375  | 5/8      | TiAIN Ctd | 1-5/8       | 5/8        | 123.01:     |
| 0327376  | 3/4      | TiAIN Ctd | 1-5/8       | 3/4        | 159.30:     |
| 0327377  | 1        | TiAIN Ctd | 2           | 1          | 253.53:     |

### Elite Series Multi Flute Carbide Roughing End Mill

#### S420 - Single-End, Center-Cutting

- Advanced Flute Geometries
- Ideal for Slotting
- Ultra High Transverse Rupture Strength
- Standard with Corner Chamfer Radius



| Part No. | Diameter | Coating   | Flute Lgth. | Shank Dia. | Price /Each |
|----------|----------|-----------|-------------|------------|-------------|
| 0327378  | 1/4      | Uncoated  | 3/8         | 1/4        | \$35.32:    |
| 0327379  | 1/4      | Uncoated  | 3/4         | 1/4        | 41.85:      |
| 0327380  | 5/16     | Uncoated  | 7/16        | 5/16       | 46.20:      |
| 0327381  | 5/16     | Uncoated  | 13/16       | 5/16       | 49.96:      |
| 0327382  | 3/8      | Uncoated  | 1/2         | 3/8        | 49.47:      |
| 0327383  | 3/8      | Uncoated  | 1           | 3/8        | 58.67:      |
| 0327384  | 7/16     | Uncoated  | 1           | 7/16       | 70.88:      |
| 0327385  | 1/2      | Uncoated  | 5/8         | 1/2        | 70.28:      |
| 0327386  | 1/2      | Uncoated  | 1-1/4       | 1/2        | 77.05:      |
| 0327387  | 5/8      | Uncoated  | 1-5/8       | 5/8        | 128.70:     |
| 0327388  | 3/4      | Uncoated  | 1-5/8       | 3/4        | 169.46:     |
| 0327389  | 1        | Uncoated  | 2           | 1          | 284.26:     |
| 0327390  | 1/4      | TiAIN Ctd | 3/8         | 1/4        | 39.55:      |
| 0327391  | 1/4      | TiAIN Ctd | 3/4         | 1/4        | 46.94:      |
| 0327392  | 5/16     | TiAIN Ctd | 7/16        | 5/16       | 51.78:      |
| 0327393  | 5/16     | TiAIN Ctd | 13/16       | 5/16       | 56.01:      |
| 0327394  | 3/8      | TiAIN Ctd | 1/2         | 3/8        | 55.40:      |
| 0327395  | 3/8      | TiAIN Ctd | 1           | 3/8        | 65.69:      |
| 0327396  | 7/16     | TiAIN Ctd | 1           | 7/16       | 79.35:      |
| 0327397  | 1/2      | TiAIN Ctd | 5/8         | 1/2        | 78.74:      |
| 0327398  | 1/2      | TiAIN Ctd | 1-1/4       | 1/2        | 86.25:      |
| 0327399  | 5/8      | TiAIN Ctd | 1-5/8       | 5/8        | 144.18:     |
| 0327400  | 3/4      | TiAIN Ctd | 1-5/8       | 3/4        | 189.79:     |
| 0327401  | 1        | TiAIN Ctd | 2           | 1          | 318.36:     |



# CARBIDE END MILLS

## Carbide End Mills Cont.



### Niagara Cutter

#### Elite Series 5 Flute Carbide End Mill

##### S545 - Single End, Center Cutting

- Ideal for Peripheral Finish Milling
- Eccentric Primary Relief



| Part No. | Diameter | Coating   | Flute Lgth. | Shank Dia. | Price /Each |
|----------|----------|-----------|-------------|------------|-------------|
| 0327402  | 1/8      | Uncoated  | 1/4         | 1/8        | \$16.57:    |
| 0327403  | 1/8      | Uncoated  | 1/2         | 1/8        | 18.26:      |
| 0327404  | 5/32     | Uncoated  | 5/16        | 3/16       | 20.20:      |
| 0327405  | 3/16     | Uncoated  | 5/16        | 3/16       | 18.14:      |
| 0327406  | 3/16     | Uncoated  | 9/16        | 3/16       | 20.20:      |
| 0327407  | 1/4      | Uncoated  | 3/8         | 1/4        | 19.59:      |
| 0327408  | 1/4      | Uncoated  | 3/4         | 1/4        | 21.77:      |
| 0327409  | 5/16     | Uncoated  | 7/16        | 5/16       | 24.68:      |
| 0327410  | 5/16     | Uncoated  | 13/16       | 5/16       | 27.33:      |
| 0327411  | 3/8      | Uncoated  | 1/2         | 3/8        | 30.48:      |
| 0327412  | 3/8      | Uncoated  | 1           | 3/8        | 33.87:      |
| 0327413  | 3/8      | Uncoated  | 1-1/2       | 3/8        | 52.13:      |
| 0327414  | 1/2      | Uncoated  | 5/8         | 1/2        | 46.94:      |
| 0327415  | 1/2      | Uncoated  | 1-1/4       | 1/2        | 52.13:      |
| 0327416  | 1/2      | Uncoated  | 2           | 1/2        | 75.36:      |
| 0327417  | 5/8      | Uncoated  | 1-5/8       | 5/8        | 108.26:     |
| 0327418  | 3/4      | Uncoated  | 1           | 3/4        | 124.10:     |
| 0327419  | 3/4      | Uncoated  | 1-5/8       | 3/4        | 139.10:     |
| 0327420  | 3/4      | Uncoated  | 2-1/4       | 3/4        | 184.95:     |
| 0327421  | 1        | Uncoated  | 2           | 1          | 220.03:     |
| 0327422  | 1        | Uncoated  | 3-1/4       | 1          | 300.82:     |
| 0327423  | 1/8      | TiAIN Ctd | 1/4         | 1/8        | 18.51:      |
| 0327424  | 1/8      | TiAIN Ctd | 1/2         | 1/8        | 20.44:      |
| 0327425  | 5/32     | TiAIN Ctd | 5/16        | 3/16       | 22.62:      |
| 0327426  | 3/16     | TiAIN Ctd | 5/16        | 3/16       | 20.33:      |
| 0327427  | 3/16     | TiAIN Ctd | 9/16        | 3/16       | 22.62:      |
| 0327428  | 1/4      | TiAIN Ctd | 3/8         | 1/4        | 21.89:      |
| 0327429  | 1/4      | TiAIN Ctd | 3/4         | 1/4        | 24.43:      |
| 0327430  | 5/16     | TiAIN Ctd | 7/16        | 5/16       | 27.58:      |
| 0327431  | 5/16     | TiAIN Ctd | 13/16       | 5/16       | 30.61:      |
| 0327432  | 3/8      | TiAIN Ctd | 1/2         | 3/8        | 34.11:      |
| 0327433  | 3/8      | TiAIN Ctd | 1           | 3/8        | 37.98:      |
| 0327434  | 3/8      | TiAIN Ctd | 1-1/2       | 3/8        | 58.43:      |
| 0327435  | 1/2      | TiAIN Ctd | 5/8         | 1/2        | 52.62:      |
| 0327436  | 1/2      | TiAIN Ctd | 1-1/4       | 1/2        | 58.43:      |
| 0327437  | 1/2      | TiAIN Ctd | 2           | 1/2        | 84.43:      |
| 0327438  | 5/8      | TiAIN Ctd | 1-5/8       | 5/8        | 121.20:     |
| 0327439  | 3/4      | TiAIN Ctd | 1           | 3/4        | 138.99:     |
| 0327440  | 3/4      | TiAIN Ctd | 1-5/8       | 3/4        | 155.80:     |
| 0327441  | 3/4      | TiAIN Ctd | 2-1/4       | 3/4        | 207.08:     |
| 0327442  | 1        | TiAIN Ctd | 2           | 1          | 246.39:     |
| 0327443  | 1        | TiAIN Ctd | 3-1/4       | 1          | 336.87:     |

## 2 Flute Carbide End Mill, General Purpose

### C230 - Single End, Center-Cutting



| Part No. | Diameter | Coating   | Flute Lgth. | Shank Dia. | Price /Each |
|----------|----------|-----------|-------------|------------|-------------|
| 0327444  | 1/16     | Uncoated  | 3/16        | 1/8        | \$9.19:     |
| 0327445  | 1/16     | Uncoated  | 1/4         | 1/8        | 9.19:       |
| 0327446  | 3/32     | Uncoated  | 9/32        | 1/8        | 8.70:       |
| 0327447  | 3/32     | Uncoated  | 3/8         | 1/8        | 8.70:       |
| 0327448  | 1/8      | Uncoated  | 1/4         | 1/8        | 7.26:       |
| 0327449  | 1/8      | Uncoated  | 1/2         | 1/8        | 8.10:       |
| 0327450  | 5/32     | Uncoated  | 1/2         | 3/16       | 11.98:      |
| 0327451  | 3/16     | Uncoated  | 5/8         | 3/16       | 11.25:      |
| 0327452  | 7/32     | Uncoated  | 5/8         | 1/4        | 15.00:      |
| 0327453  | 1/4      | Uncoated  | 1/2         | 1/4        | 12.46:      |
| 0327454  | 1/4      | Uncoated  | 3/4         | 1/4        | 13.67:      |
| 0327455  | 1/4      | Uncoated  | 1-1/8       | 1/4        | 20.68:      |
| 0327456  | 1/4      | Uncoated  | 1-1/2       | 1/4        | 24.68:      |
| 0327457  | 9/32     | Uncoated  | 3/4         | 5/16       | 17.91:      |
| 0327458  | 5/16     | Uncoated  | 1/2         | 5/16       | 16.33:      |
| 0327459  | 5/16     | Uncoated  | 13/16       | 5/16       | 18.63:      |
| 0327460  | 3/8      | Uncoated  | 1           | 3/8        | 23.59:      |
| 0327461  | 1/2      | Uncoated  | 1           | 1/2        | 38.10:      |
| 0327462  | 1/2      | Uncoated  | 2           | 1/2        | 52.13:      |
| 0327463  | 5/8      | Uncoated  | 1-1/4       | 5/8        | 73.55:      |
| 0327464  | 3/4      | Uncoated  | 1-1/2       | 3/4        | 107.89:     |
| 0327465  | 1        | Uncoated  | 1-1/2       | 1          | 161.36:     |
| 0327466  | 1/16     | TiAIN Ctd | 3/16        | 1/8        | 10.28:      |
| 0327467  | 1/16     | TiAIN Ctd | 1/4         | 1/8        | 10.28:      |
| 0327468  | 3/32     | TiAIN Ctd | 9/32        | 1/8        | 9.80:       |
| 0327469  | 3/32     | TiAIN Ctd | 3/8         | 1/8        | 9.80:       |
| 0327470  | 1/8      | TiAIN Ctd | 1/4         | 1/8        | 8.10:       |
| 0327471  | 1/8      | TiAIN Ctd | 1/2         | 1/8        | 9.07:       |
| 0327472  | 5/32     | TiAIN Ctd | 1/2         | 3/16       | 13.42:      |
| 0327473  | 3/16     | TiAIN Ctd | 5/8         | 3/16       | 12.58:      |
| 0327474  | 7/32     | TiAIN Ctd | 5/8         | 1/4        | 16.82:      |
| 0327475  | 1/4      | TiAIN Ctd | 1/2         | 1/4        | 13.91:      |
| 0327476  | 1/4      | TiAIN Ctd | 3/4         | 1/4        | 15.36:      |
| 0327477  | 1/4      | TiAIN Ctd | 1-1/8       | 1/4        | 23.22:      |
| 0327478  | 1/4      | TiAIN Ctd | 1-1/2       | 1/4        | 27.58:      |
| 0327479  | 9/32     | TiAIN Ctd | 3/4         | 5/16       | 20.08:      |
| 0327480  | 5/16     | TiAIN Ctd | 1/2         | 5/16       | 18.26:      |
| 0327481  | 5/16     | TiAIN Ctd | 13/16       | 5/16       | 20.80:      |
| 0327482  | 3/8      | TiAIN Ctd | 1           | 3/8        | 26.37:      |
| 0327483  | 1/2      | TiAIN Ctd | 1           | 1/2        | 42.70:      |
| 0327484  | 1/2      | TiAIN Ctd | 2           | 1/2        | 58.43:      |
| 0327485  | 5/8      | TiAIN Ctd | 1-1/4       | 5/8        | 82.37:      |
| 0327486  | 3/4      | TiAIN Ctd | 1-1/2       | 3/4        | 120.84:     |
| 0327487  | 1        | TiAIN Ctd | 1-1/2       | 1          | 180.72:     |

## CB230 - Ball-End, Center-Cutting



| Part No. | Diameter | Coating   | Flute Lgth. | Shank Dia. | Price /Each |
|----------|----------|-----------|-------------|------------|-------------|
| 0327488  | 1/16     | Uncoated  | 1/8         | 1/8        | \$9.31:     |
| 0327489  | 1/16     | Uncoated  | 3/16        | 1/8        | 11.98:      |
| 0327490  | 1/8      | Uncoated  | 1/2         | 1/8        | 10.28:      |
| 0327491  | 1/8      | Uncoated  | 1           | 1/8        | 21.05:      |
| 0327492  | 3/16     | Uncoated  | 5/8         | 3/16       | 13.67:      |
| 0327493  | 3/16     | Uncoated  | 1           | 3/16       | 25.52:      |
| 0327494  | 1/4      | Uncoated  | 3/4         | 1/4        | 16.93:      |
| 0327495  | 1/4      | Uncoated  | 1           | 1/4        | 28.91:      |
| 0327496  | 3/8      | Uncoated  | 1           | 3/8        | 27.22:      |
| 0327497  | 1/2      | Uncoated  | 1           | 1/2        | 48.27:      |
| 0327498  | 5/8      | Uncoated  | 1-1/4       | 5/8        | 81.77:      |
| 0327499  | 3/4      | Uncoated  | 1-1/2       | 3/4        | 119.51:     |
| 0327500  | 1        | Uncoated  | 3           | 1          | 328.17:     |
| 0327501  | 1/16     | TiAIN Ctd | 1/8         | 1/8        | 10.40:      |
| 0327502  | 1/16     | TiAIN Ctd | 3/16        | 1/8        | 13.42:      |
| 0327503  | 1/8      | TiAIN Ctd | 1/2         | 1/8        | 11.49:      |
| 0327504  | 1/8      | TiAIN Ctd | 1           | 1/8        | 23.59:      |
| 0327505  | 3/16     | TiAIN Ctd | 5/8         | 3/16       | 15.36:      |
| 0327506  | 3/16     | TiAIN Ctd | 1           | 3/16       | 28.54:      |
| 0327507  | 1/4      | TiAIN Ctd | 3/4         | 1/4        | 18.99:      |
| 0327508  | 1/4      | TiAIN Ctd | 1           | 1/4        | 32.42:      |
| 0327509  | 3/8      | TiAIN Ctd | 1           | 3/8        | 30.48:      |
| 0327510  | 1/2      | TiAIN Ctd | 1           | 1/2        | 54.06:      |
| 0327511  | 5/8      | TiAIN Ctd | 1-1/4       | 5/8        | 91.56:      |
| 0327512  | 3/4      | TiAIN Ctd | 1-1/2       | 3/4        | 133.90:     |
| 0327513  | 1        | TiAIN Ctd | 3           | 1          | 367.60:     |

## CD230 - Double-End, Center-Cutting

- Weldon Set Screw Flat on Shank



| Part No. | Diameter | Coating   | Flute Lgth. | Shank Dia. | Price /Each |
|----------|----------|-----------|-------------|------------|-------------|
| 0327514  | 1/8      | Uncoated  | 3/8         | 3/8        | \$31.69:    |
| 0327515  | 3/16     | Uncoated  | 1/2         | 3/8        | 34.84:      |
| 0327516  | 1/4      | Uncoated  | 5/8         | 3/8        | 35.08:      |
| 0327517  | 3/8      | Uncoated  | 3/4         | 3/8        | 40.28:      |
| 0327518  | 1/2      | Uncoated  | 1           | 1/2        | 59.88:      |
| 0327519  | 1/8      | TiAIN Ctd | 3/8         | 3/8        | 35.45:      |
| 0327520  | 3/16     | TiAIN Ctd | 1/2         | 3/8        | 39.07:      |
| 0327521  | 1/4      | TiAIN Ctd | 5/8         | 3/8        | 39.31:      |
| 0327522  | 3/8      | TiAIN Ctd | 3/4         | 3/8        | 45.12:      |
| 0327523  | 1/2      | TiAIN Ctd | 1           | 1/2        | 67.01:      |

## C430 - Single-End, Center-Cutting



| Part No. | Diameter | Coating  | Flute Lgth. | Shank Dia. | Price /Each |
|----------|----------|----------|-------------|------------|-------------|
| 0327524  | 1/16     | Uncoated | 1/8         | 1/8        | \$7.86:     |
| 0327525  | 1/16     | Uncoated | 3/16        | 1/8        | 9.19:       |
| 0327526  | 1/16     | Uncoated | 1/4         | 1/8        | 9.19:       |
| 0327527  | 5/64     | Uncoated | 3/16        | 1/8        | 9.19:       |
| 0327528  | 5/64     | Uncoated | 1/4         | 1/8        | 9.19:       |
| 0327529  | 3/32     | Uncoated | 3/16        | 1/8        | 7.50:       |
| 0327530  | 3/32     | Uncoated | 9/32        | 1/8        | 8.70:       |
| 0327531  | 3/32     | Uncoated | 3/8         | 1/8        | 8.70:       |
| 0327532  | 1/8      | Uncoated | 1/4         | 1/8        | 7.26:       |
| 0327533  | 1/8      | Uncoated | 1/2         | 1/8        | 8.10:       |
| 0327534  | 1/8      | Uncoated | 1           | 1/8        | 18.14:      |
| 0327535  | 5/32     | Uncoated | 1/2         | 3/16       | 11.98:      |
| 0327536  | 3/16     | Uncoated | 3/8         | 3/16       | 9.68:       |
| 0327537  | 3/16     | Uncoated | 5/8         | 3/16       | 11.25:      |
| 0327538  | 7/32     | Uncoated | 5/8         | 1/4        | 15.00:      |
| 0327539  | 1/4      | Uncoated | 1/2         | 1/4        | 12.46:      |
| 0327540  | 1/4      | Uncoated | 3/4         | 1/4        | 13.67:      |

## Carbide End Mills Cont.

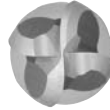


### Niagara Cutter

#### C430 - Single-End, Center-Cutting Cont.

| Part No. | Diameter | Coating   | Flute Lgth. | Shank Dia. | Price /Each |
|----------|----------|-----------|-------------|------------|-------------|
| 0327541  | 1/4      | Uncoated  | 1-1/2       | 1/4        | \$24.68:    |
| 0327542  | 9/32     | Uncoated  | 3/4         | 5/16       | 17.91:      |
| 0327543  | 5/16     | Uncoated  | 13/16       | 5/16       | 18.63:      |
| 0327544  | 5/16     | Uncoated  | 1-5/8       | 5/16       | 30.73:      |
| 0327545  | 3/8      | Uncoated  | 5/8         | 3/8        | 21.29:      |
| 0327546  | 3/8      | Uncoated  | 1           | 3/8        | 23.59:      |
| 0327547  | 3/8      | Uncoated  | 1-3/4       | 3/8        | 35.56:      |
| 0327548  | 7/16     | Uncoated  | 1           | 7/16       | 29.03:      |
| 0327549  | 1/2      | Uncoated  | 1           | 1/2        | 38.10:      |
| 0327550  | 1/2      | Uncoated  | 2           | 1/2        | 52.13:      |
| 0327551  | 5/8      | Uncoated  | 1-1/4       | 5/8        | 73.55:      |
| 0327552  | 3/4      | Uncoated  | 1-1/2       | 3/4        | 107.89:     |
| 0327553  | 3/4      | Uncoated  | 3           | 3/4        | 170.32:     |
| 0327554  | 1        | Uncoated  | 1-1/2       | 1          | 161.36:     |
| 0327555  | 1        | Uncoated  | 3           | 1          | 282.44:     |
| 0327556  | 1/16     | TiAIN Ctd | 1/8         | 1/8        | 8.83:       |
| 0327557  | 1/16     | TiAIN Ctd | 3/16        | 1/8        | 10.28:      |
| 0327558  | 1/16     | TiAIN Ctd | 1/4         | 1/8        | 10.28:      |
| 0327559  | 5/64     | TiAIN Ctd | 3/16        | 1/8        | 10.28:      |
| 0327560  | 5/64     | TiAIN Ctd | 1/4         | 1/8        | 10.28:      |
| 0327561  | 3/32     | TiAIN Ctd | 3/16        | 1/8        | 8.35:       |
| 0327562  | 3/32     | TiAIN Ctd | 9/32        | 1/8        | 9.80:       |
| 0327563  | 3/32     | TiAIN Ctd | 3/8         | 1/8        | 9.80:       |
| 0327564  | 1/8      | TiAIN Ctd | 1/4         | 1/8        | 8.10:       |
| 0327565  | 1/8      | TiAIN Ctd | 1/2         | 1/8        | 9.07:       |
| 0327566  | 1/8      | TiAIN Ctd | 1           | 1/8        | 20.33:      |
| 0327567  | 5/32     | TiAIN Ctd | 1/2         | 3/16       | 13.42:      |
| 0327568  | 3/16     | TiAIN Ctd | 3/8         | 3/16       | 10.89:      |
| 0327569  | 3/16     | TiAIN Ctd | 5/8         | 3/16       | 12.58:      |
| 0327570  | 7/32     | TiAIN Ctd | 5/8         | 1/4        | 16.82:      |
| 0327571  | 1/4      | TiAIN Ctd | 1/2         | 1/4        | 13.91:      |
| 0327572  | 1/4      | TiAIN Ctd | 3/4         | 1/4        | 15.36:      |
| 0327573  | 1/4      | TiAIN Ctd | 1-1/2       | 1/4        | 27.58:      |
| 0327574  | 9/32     | TiAIN Ctd | 3/4         | 5/16       | 20.08:      |
| 0327575  | 5/16     | TiAIN Ctd | 13/16       | 5/16       | 20.80:      |
| 0327576  | 5/16     | TiAIN Ctd | 1-5/8       | 5/16       | 34.35:      |
| 0327577  | 3/8      | TiAIN Ctd | 5/8         | 3/8        | 23.82:      |
| 0327578  | 3/8      | TiAIN Ctd | 1           | 3/8        | 26.37:      |
| 0327579  | 3/8      | TiAIN Ctd | 1-3/4       | 3/8        | 39.80:      |
| 0327580  | 7/16     | TiAIN Ctd | 1           | 7/16       | 32.54:      |
| 0327581  | 1/2      | TiAIN Ctd | 1           | 1/2        | 42.70:      |
| 0327582  | 1/2      | TiAIN Ctd | 2           | 1/2        | 58.43:      |
| 0327583  | 5/8      | TiAIN Ctd | 1-1/4       | 5/8        | 82.37:      |
| 0327584  | 3/4      | TiAIN Ctd | 1-1/2       | 3/4        | 120.84:     |
| 0327585  | 3/4      | TiAIN Ctd | 3           | 3/4        | 190.75:     |
| 0327586  | 1        | TiAIN Ctd | 1-1/2       | 1          | 180.72:     |
| 0327587  | 1        | TiAIN Ctd | 3           | 1          | 316.31:     |

#### 4 Flute Carbide End Mill, General Purpose CB430 - Ball-End, Center-Cutting



| Part No. | Diameter | Coating   | Flute Lgth. | Shank Dia. | Price /Each |
|----------|----------|-----------|-------------|------------|-------------|
| 0327588  | 1/16     | Uncoated  | 1/8         | 1/8        | \$9.31:     |
| 0327589  | 1/16     | Uncoated  | 3/16        | 1/8        | 11.98:      |
| 0327590  | 1/8      | Uncoated  | 1/2         | 1/8        | 10.28:      |
| 0327591  | 1/8      | Uncoated  | 1           | 1/8        | 21.05:      |
| 0327592  | 3/16     | Uncoated  | 5/8         | 3/16       | 13.67:      |
| 0327593  | 3/16     | Uncoated  | 1-1/8       | 3/16       | 23.71:      |
| 0327594  | 1/4      | Uncoated  | 3/4         | 1/4        | 16.93:      |
| 0327595  | 1/4      | Uncoated  | 1           | 1/4        | 28.91:      |
| 0327596  | 3/8      | Uncoated  | 1           | 3/8        | 27.22:      |
| 0327597  | 1/2      | Uncoated  | 1           | 1/2        | 48.27:      |
| 0327598  | 5/8      | Uncoated  | 1-1/4       | 5/8        | 81.77:      |
| 0327599  | 3/4      | Uncoated  | 1-1/2       | 3/4        | 119.51:     |
| 0327600  | 1        | Uncoated  | 4           | 1          | 328.17:     |
| 0327601  | 1/16     | TiAIN Ctd | 1/8         | 1/8        | 10.40:      |
| 0327602  | 1/16     | TiAIN Ctd | 3/16        | 1/8        | 13.42:      |
| 0327603  | 1/8      | TiAIN Ctd | 1/2         | 1/8        | 11.49:      |
| 0327604  | 1/8      | TiAIN Ctd | 1           | 1/8        | 23.59:      |
| 0327605  | 3/16     | TiAIN Ctd | 5/8         | 3/16       | 15.36:      |
| 0327606  | 3/16     | TiAIN Ctd | 1-1/8       | 3/16       | 26.61:      |
| 0327607  | 1/4      | TiAIN Ctd | 3/4         | 1/4        | 18.99:      |
| 0327608  | 1/4      | TiAIN Ctd | 1           | 1/4        | 32.42:      |
| 0327609  | 3/8      | TiAIN Ctd | 1           | 3/8        | 30.48:      |
| 0327610  | 1/2      | TiAIN Ctd | 1           | 1/2        | 54.06:      |
| 0327611  | 5/8      | TiAIN Ctd | 1-1/4       | 5/8        | 91.56:      |
| 0327612  | 3/4      | TiAIN Ctd | 1-1/2       | 3/4        | 133.90:     |
| 0327613  | 1        | TiAIN Ctd | 4           | 1          | 367.60:     |

#### CD430 - Double End, Center-Cutting Welding • Cutting Set Screw Flat on Shank



| Part No. | Diameter | Coating   | Flute Lgth. | Shank Dia. | Price /Each |
|----------|----------|-----------|-------------|------------|-------------|
| 0327614  | 1/8      | Uncoated  | 3/8         | 3/8        | \$31.69:    |
| 0327615  | 3/16     | Uncoated  | 1/2         | 3/8        | 34.84:      |
| 0327616  | 1/4      | Uncoated  | 5/8         | 3/8        | 35.08:      |
| 0327617  | 3/8      | Uncoated  | 3/4         | 3/8        | 40.28:      |
| 0327618  | 1/2      | Uncoated  | 1           | 1/2        | 59.88:      |
| 0327619  | 1/8      | TiAIN Ctd | 3/8         | 3/8        | 35.45:      |
| 0327620  | 3/16     | TiAIN Ctd | 1/2         | 3/8        | 39.07:      |
| 0327621  | 1/4      | TiAIN Ctd | 5/8         | 3/8        | 39.31:      |
| 0327622  | 3/8      | TiAIN Ctd | 3/4         | 3/8        | 45.12:      |
| 0327623  | 1/2      | TiAIN Ctd | 1           | 1/2        | 67.01:      |

#### 4 Flute Solid-Carbide End Mill with Stabilizing Flute Geometry STS430 Square Corner, Single-End, Center-Cutting

- Eccentric Primary Relief
- Standard with Radius
- Weldon set screw flat on shank sizes 3/8" and larger



| Part No. | Diameter | Coating   | Flute Lgth. | Shank Dia. | Price /Each |
|----------|----------|-----------|-------------|------------|-------------|
| 0327946  | 1/8      | TiAIN Ctd | 3/8         | 1/8        | \$15.49:    |
| 0327947  | 3/16     | TiAIN Ctd | 3/16        | 3/16       | 18.51:      |
| 0327948  | 3/16     | TiAIN Ctd | 7/16        | 3/16       | 21.41:      |
| 0327949  | 1/4      | TiAIN Ctd | 1/4         | 1/4        | 24.07:      |
| 0327950  | 1/4      | TiAIN Ctd | 1/2         | 1/4        | 26.85:      |
| 0327951  | 5/16     | TiAIN Ctd | 5/16        | 5/16       | 30.36:      |
| 0327952  | 5/16     | TiAIN Ctd | 13/16       | 5/16       | 33.63:      |
| 0327953  | 3/8      | TiAIN Ctd | 3/8         | 3/8        | 37.50:      |
| 0327954  | 3/8      | TiAIN Ctd | 7/8         | 3/8        | 41.73:      |
| 0327955  | 1/2      | TiAIN Ctd | 1/2         | 1/2        | 57.94:      |
| 0327956  | 1/2      | TiAIN Ctd | 1           | 1/2        | 64.23:      |
| 0327957  | 5/8      | TiAIN Ctd | 1-1/4       | 5/8        | 135.36:     |
| 0327958  | 3/4      | TiAIN Ctd | 3/4         | 3/4        | 157.73:     |
| 0327959  | 3/4      | TiAIN Ctd | 1-1/2       | 3/4        | 175.27:     |

#### 4 Flute Solid Carbide End Mill with Stabilizing Flute Geometry STR430 With Radius, Single-Cutting, Center-Cutting

- Eccentric Primary Relief
- Standard with Radius



| Part No. | Diameter | Coating   | Flute Lgth. | Shank Dia. | Price /Each |
|----------|----------|-----------|-------------|------------|-------------|
| 0327960  | 1/8      | TiAIN Ctd | 3/8         | 1/8        | \$15.84:    |
| 0327961  | 3/16     | TiAIN Ctd | 3/16        | 3/16       | 19.12:      |
| 0327962  | 3/16     | TiAIN Ctd | 7/16        | 3/16       | 22.01:      |
| 0327963  | 1/4      | TiAIN Ctd | 1/4         | 1/4        | 25.16:      |
| 0327964  | 1/4      | TiAIN Ctd | 1/2         | 1/4        | 28.06:      |
| 0327965  | 5/16     | TiAIN Ctd | 5/16        | 5/16       | 31.69:      |
| 0327966  | 5/16     | TiAIN Ctd | 13/16       | 5/16       | 35.20:      |
| 0327967  | 3/8      | TiAIN Ctd | 3/8         | 3/8        | 39.19:      |
| 0327968  | 3/8      | TiAIN Ctd | 7/8         | 3/8        | 43.66:      |
| 0327969  | 1/2      | TiAIN Ctd | 1/2         | 1/2        | 60.48:      |
| 0327970  | 1/2      | TiAIN Ctd | 1           | 1/2        | 67.13:      |
| 0327971  | 5/8      | TiAIN Ctd | 1-1/4       | 5/8        | 141.52:     |
| 0327972  | 3/4      | TiAIN Ctd | 3/4         | 3/4        | 164.87:     |
| 0327973  | 3/4      | TiAIN Ctd | 1-1/2       | 3/4        | 183.25:     |



#### MICRO MONSTER® Solid Carbide Miniature Mills Decimal - 2 Flute Single End - Square End

- Ground primary relief angles
- +0.005/-0.005 in tolerance on cutting diameter
- All endmills have 1/8" shank
- LOC equals 3x diameter
- Hand selection to .0002 on diameter available
- Stub LOC 2x diameter in stock



| Part No. | Cut Dia. | Flute Lgth. | Price /Each |
|----------|----------|-------------|-------------|
| 0360889  | .005"    | 0.015"      | \$30.70     |
| 0360913  | .006"    | 0.018"      | 30.70       |
| 0360914  | .007"    | 0.021"      | 30.70       |
| 0360915  | .008"    | 0.024"      | 30.70       |
| 0360916  | .009"    | 0.027"      | 30.70       |
| 0360890  | .010"    | 0.03"       | 17.54       |
| 0360917  | .011"    | 0.033"      | 17.54       |
| 0360918  | .012"    | 0.036"      | 17.54       |
| 0360919  | .013"    | 0.039"      | 17.54       |
| 0360920  | .014"    | 0.042"      | 17.54       |
| 0360891  | .015"    | 0.045"      | 17.54       |
| 0360921  | .016"    | 0.048"      | 17.54       |
| 0360922  | .017"    | 0.051"      | 17.54       |
| 0360923  | .018"    | 0.054"      | 17.54       |
| 0360924  | .019"    | 0.057"      | 17.54       |
| 0360892  | .020"    | 0.06"       | 13.16       |
| 0360925  | .021"    | 0.063"      | 13.16       |
| 0360926  | .022"    | 0.066"      | 13.16       |
| 0360927  | .023"    | 0.069"      | 13.16       |
| 0360928  | .024"    | 0.072"      | 13.16       |
| 0360893  | .025"    | 0.075"      | 13.16       |
| 0360929  | .026"    | 0.078"      | 13.16       |
| 0360930  | .027"    | 0.081"      | 13.16       |
| 0360931  | .028"    | 0.084"      | 13.16       |
| 0360932  | .029"    | 0.087"      | 13.16       |
| 0360894  | .030"    | 0.09"       | 8.77        |
| 0360933  | .031"    | 0.093"      | 8.77        |
| 0360934  | .032"    | 0.096"      | 8.77        |

# CARBIDE END MILLS

## Carbide End Mills Cont.



**MICRO MONSTER®**

End Mills

### Solid Carbide Miniature Mills Decimal - 2 Flute Single End - Square End Cont.

| Part No. | Cut Dia. | Flute Lgth. | Price /Each |
|----------|----------|-------------|-------------|
| 0360935  | .033"    | 0.099"      | \$8.77      |
| 0360936  | .034"    | 0.102"      | 8.77        |
| 0360895  | .035"    | 0.105"      | 8.77        |
| 0360937  | .036"    | 0.108"      | 8.77        |
| 0360938  | .037"    | 0.111"      | 8.77        |
| 0360939  | .038"    | 0.114"      | 8.77        |
| 0360940  | .039"    | 0.117"      | 8.77        |
| 0360896  | .040"    | 0.12"       | 8.77        |
| 0360941  | .041"    | 0.123"      | 8.77        |
| 0360942  | .042"    | 0.126"      | 8.77        |
| 0360943  | .043"    | 0.129"      | 8.77        |
| 0360944  | .044"    | 0.132"      | 8.77        |
| 0360897  | .045"    | 0.135"      | 8.77        |
| 0360945  | .046"    | 0.138"      | 8.77        |
| 0360946  | .047"    | 0.141"      | 8.77        |
| 0360947  | .048"    | 0.144"      | 8.77        |
| 0360948  | .049"    | 0.147"      | 8.77        |
| 0360898  | .050"    | 0.15"       | 8.77        |
| 0360949  | .051"    | 0.153"      | 8.77        |
| 0360950  | .052"    | 0.156"      | 8.77        |
| 0360951  | .053"    | 0.159"      | 8.77        |
| 0360952  | .054"    | 0.162"      | 8.77        |
| 0360899  | .055"    | 0.165"      | 8.77        |
| 0360953  | .056"    | 0.168"      | 8.77        |
| 0360954  | .057"    | 0.171"      | 8.77        |
| 0360955  | .058"    | 0.174"      | 8.77        |
| 0360956  | .059"    | 0.177"      | 8.77        |
| 0360900  | .060"    | 0.18"       | 7.13        |
| 0360957  | .061"    | 0.183"      | 7.13        |
| 0360958  | .062"    | 0.186"      | 7.13        |
| 0360959  | .063"    | 0.189"      | 7.13        |
| 0360960  | .064"    | 0.192"      | 7.13        |
| 0360901  | .065"    | 0.195"      | 7.13        |
| 0360902  | .070"    | 0.21"       | 7.13        |
| 0360903  | .075"    | 0.225"      | 7.13        |
| 0360904  | .080"    | 0.24"       | 7.13        |
| 0360905  | .085"    | 0.255"      | 7.13        |
| 0360906  | .090"    | 0.27"       | 7.13        |
| 0360907  | .095"    | 0.285"      | 7.13        |
| 0360908  | .100"    | 0.3"        | 7.13        |
| 0360909  | .105"    | 0.315"      | 7.13        |
| 0360910  | .110"    | 0.33"       | 7.13        |
| 0360911  | .115"    | 0.345"      | 7.13        |
| 0360912  | .120"    | 0.36"       | 7.13        |

### Solid Carbide Miniature Mills Decimal - 2 Flute Single End - Ballnose

| Part No. | Cut Dia. | Flute Lgth. | Price /Each |
|----------|----------|-------------|-------------|
| 0360961  | .010"    | 0.03"       | \$27.41     |
| 0360962  | .011"    | 0.033"      | 27.41       |
| 0358485  | .012"    | 0.036"      | 27.41       |
| 0358487  | .013"    | 0.039"      | 27.41       |
| 0358489  | .014"    | 0.042"      | 27.41       |
| 0358491  | .015"    | 0.045"      | 27.41       |
| 0358493  | .016"    | 0.048"      | 24.12       |
| 0358495  | .017"    | 0.051"      | 24.12       |
| 0358497  | .018"    | 0.054"      | 24.12       |
| 0358499  | .019"    | 0.057"      | 24.12       |
| 0358501  | .020"    | 0.06"       | 24.12       |
| 0358507  | .021"    | 0.063"      | 24.12       |
| 0358509  | .022"    | 0.066"      | 24.12       |
| 0358511  | .023"    | 0.069"      | 24.12       |
| 0358513  | .024"    | 0.072"      | 24.12       |
| 0358515  | .025"    | 0.075"      | 18.64       |

| Part No. | Cut Dia. | Flute Lgth. | Price /Each |
|----------|----------|-------------|-------------|
| 0358517  | .026"    | 0.078"      | \$18.64     |
| 0358519  | .027"    | 0.081"      | 18.64       |
| 0358521  | .028"    | 0.084"      | 18.64       |
| 0358523  | .029"    | 0.087"      | 18.64       |
| 0358525  | .030"    | 0.09"       | 12.06       |
| 0358532  | .031"    | 0.093"      | 12.06       |
| 0358534  | .032"    | 0.096"      | 12.06       |
| 0358536  | .033"    | 0.099"      | 12.06       |
| 0358538  | .034"    | 0.102"      | 12.06       |
| 0358540  | .035"    | 0.105"      | 12.06       |
| 0358544  | .037"    | 0.111"      | 12.06       |
| 0358546  | .038"    | 0.114"      | 12.06       |
| 0360940  | .039"    | 0.117"      | 8.77        |
| 0358550  | .040"    | 0.12"       | 12.06       |
| 0358557  | .041"    | 0.123"      | 12.06       |
| 0358559  | .042"    | 0.126"      | 12.06       |
| 0358561  | .043"    | 0.129"      | 12.06       |
| 0358563  | .044"    | 0.132"      | 12.06       |
| 0358566  | .045"    | 0.135"      | 12.06       |
| 0358568  | .046"    | 0.138"      | 12.06       |
| 0358570  | .047"    | 0.141"      | 12.06       |
| 0358572  | .048"    | 0.144"      | 12.06       |
| 0358574  | .049"    | 0.147"      | 12.06       |
| 0358576  | .050"    | 0.15"       | 12.06       |
| 0358583  | .051"    | 0.153"      | 12.06       |
| 0358585  | .052"    | 0.156"      | 12.06       |
| 0358587  | .053"    | 0.159"      | 12.06       |
| 0358589  | .054"    | 0.162"      | 12.06       |
| 0358591  | .055"    | 0.165"      | 12.06       |
| 0358594  | .056"    | 0.168"      | 12.06       |
| 0358596  | .057"    | 0.171"      | 12.06       |
| 0358598  | .058"    | 0.174"      | 12.06       |
| 0358600  | .059"    | 0.177"      | 12.06       |
| 0358602  | .060"    | 0.18"       | 10.42       |
| 0358609  | .061"    | 0.183"      | 10.42       |
| 0358611  | .062"    | 0.186"      | 10.42       |
| 0358613  | .063"    | 0.189"      | 10.42       |
| 0358615  | .064"    | 0.192"      | 10.42       |
| 0358617  | .065"    | 0.195"      | 10.42       |
| 0358620  | .070"    | 0.21"       | 10.42       |
| 0358627  | .075"    | 0.225"      | 10.42       |
| 0358630  | .080"    | 0.24"       | 10.42       |
| 0358637  | .085"    | 0.255"      | 10.42       |
| 0358640  | .090"    | 0.27"       | 10.42       |
| 0358648  | .095"    | 0.285"      | 10.42       |
| 0358650  | .100"    | 0.3"        | 10.42       |
| 0358655  | .105"    | 0.315"      | 10.42       |
| 0358657  | .110"    | 0.33"       | 10.42       |
| 0358659  | .115"    | 0.345"      | 10.42       |
| 0358661  | .120"    | 0.36"       | 10.42       |

### Solid Carbide Miniature Mills Decimal - 4 Flute Single End - Square End

- Ground primary relief angles
- +0.005/-0.005 in tolerance on cutting diameter
- All endmills have 1/8" shank
- LOC equals 3x diameter
- Hand selection to .0002 on diameter available
- Stub LOC 2x diameter in stock

| Part No.          | Cut Dia. | Flute Lgth. | Overall Lgth. | Price /Each |
|-------------------|----------|-------------|---------------|-------------|
| <b>Square End</b> |          |             |               |             |
| 0359960           | .005"    | 0.015"      | 1-1/2"        | \$30.70     |
| 0360438           | .006"    | 0.018"      | 1-1/2"        | 30.70       |
| 0360439           | .007"    | 0.021"      | 1-1/2"        | 30.70       |
| 0360440           | .008"    | 0.024"      | 1-1/2"        | 30.70       |
| 0360441           | .009"    | 0.027"      | 1-1/2"        | 30.70       |
| 0359961           | .010"    | 0.03"       | 1-1/2"        | 17.54       |
| 0360442           | .011"    | 0.033"      | 1-1/2"        | 17.54       |
| 0360443           | .012"    | 0.036"      | 1-1/2"        | 17.54       |
| 0360444           | .013"    | 0.039"      | 1-1/2"        | 17.54       |
| 0360445           | .014"    | 0.042"      | 1-1/2"        | 17.54       |
| 0359962           | .015"    | 0.045"      | 1-1/2"        | 17.54       |

### Solid Carbide Miniature Mills Decimal - 4 Flute Single End - Square End Cont.

| Part No.                | Cut Dia. | Flute Lgth. | Overall Lgth. | Price /Each |
|-------------------------|----------|-------------|---------------|-------------|
| <b>Square End cont.</b> |          |             |               |             |
| 0360446                 | .016"    | 0.048"      | 1-1/2"        | \$17.54     |
| 0360447                 | .017"    | 0.051"      | 1-1/2"        | 17.54       |
| 0360448                 | .018"    | 0.054"      | 1-1/2"        | 17.54       |
| 0360449                 | .019"    | 0.057"      | 1-1/2"        | 17.54       |
| 0359963                 | .020"    | 0.06"       | 1-1/2"        | 13.16       |
| 0360450                 | .021"    | 0.063"      | 1-1/2"        | 13.16       |
| 0360451                 | .022"    | 0.066"      | 1-1/2"        | 13.16       |
| 0360452                 | .023"    | 0.069"      | 1-1/2"        | 13.16       |
| 0360453                 | .024"    | 0.072"      | 1-1/2"        | 13.16       |
| 0359964                 | .025"    | 0.075"      | 1-1/2"        | 13.16       |
| 0360454                 | .026"    | 0.078"      | 1-1/2"        | 13.16       |
| 0360455                 | .027"    | 0.081"      | 1-1/2"        | 13.16       |
| 0360456                 | .028"    | 0.084"      | 1-1/2"        | 13.16       |
| 0360457                 | .029"    | 0.087"      | 1-1/2"        | 13.16       |
| 0359965                 | .030"    | 0.09"       | 1-1/2"        | 8.77        |
| 0360458                 | .031"    | 0.093"      | 1-1/2"        | 8.77        |
| 0360459                 | .032"    | 0.096"      | 1-1/2"        | 8.77        |
| 0360460                 | .033"    | 0.099"      | 1-1/2"        | 8.77        |
| 0360461                 | .034"    | 0.102"      | 1-1/2"        | 8.77        |
| 0359966                 | .035"    | 0.105"      | 1-1/2"        | 8.77        |
| 0360462                 | .036"    | 0.108"      | 1-1/2"        | 8.77        |
| 0360463                 | .037"    | 0.111"      | 1-1/2"        | 8.77        |
| 0360464                 | .038"    | 0.114"      | 1-1/2"        | 8.77        |
| 0360465                 | .039"    | 0.117"      | 1-1/2"        | 8.77        |
| 0359967                 | .040"    | 0.12"       | 1-1/2"        | 8.77        |
| 0360466                 | .041"    | 0.123"      | 1-1/2"        | 8.77        |
| 0360467                 | .042"    | 0.126"      | 1-1/2"        | 8.77        |
| 0360468                 | .043"    | 0.129"      | 1-1/2"        | 8.77        |
| 0360469                 | .044"    | 0.132"      | 1-1/2"        | 8.77        |
| 0359968                 | .045"    | 0.135"      | 1-1/2"        | 8.77        |
| 0360470                 | .046"    | 0.138"      | 1-1/2"        | 8.77        |
| 0360471                 | .047"    | 0.141"      | 1-1/2"        | 8.77        |
| 0360472                 | .048"    | 0.144"      | 1-1/2"        | 8.77        |
| 0360473                 | .049"    | 0.147"      | 1-1/2"        | 8.77        |
| 0359969                 | .050"    | 0.15"       | 1-1/2"        | 8.77        |
| 0360474                 | .051"    | 0.153"      | 1-1/2"        | 8.77        |
| 0360475                 | .052"    | 0.156"      | 1-1/2"        | 8.77        |
| 0360476                 | .053"    | 0.159"      | 1-1/2"        | 8.77        |
| 0360477                 | .054"    | 0.162"      | 1-1/2"        | 8.77        |
| 0359970                 | .055"    | 0.165"      | 1-1/2"        | 8.77        |
| 0360478                 | .056"    | 0.168"      | 1-1/2"        | 8.77        |
| 0360479                 | .057"    | 0.171"      | 1-1/2"        | 8.77        |
| 0360480                 | .058"    | 0.174"      | 1-1/2"        | 8.77        |
| 0360481                 | .059"    | 0.177"      | 1-1/2"        | 8.77        |
| 0359971                 | .060"    | 0.18"       | 1-1/2"        | 7.13        |
| 0360482                 | .061"    | 0.183"      | 1-1/2"        | 7.13        |
| 0360483                 | .062"    | 0.186"      | 1-1/2"        | 7.13        |
| 0360484                 | .063"    | 0.189"      | 1-1/2"        | 7.13        |
| 0360485                 | .064"    | 0.192"      | 1-1/2"        | 7.13        |
| 0359972                 | .065"    | 0.195"      | 1-1/2"        | 7.13        |
| 0359973                 | .070"    | 0.21"       | 1-1/2"        | 7.13        |
| 0359974                 | .075"    | 0.225"      | 1-1/2"        | 7.13        |
| 0359975                 | .080"    | 0.24"       | 1-1/2"        | 7.13        |
| 0359976                 | .085"    | 0.255"      | 1-1/2"        | 7.13        |
| 0359977                 | .090"    | 0.27"       | 1-1/2"        | 7.13        |
| 0359978                 | .095"    | 0.285"      | 1-1/2"        | 7.13        |
| 0359979                 | .100"    | 0.3"        | 1-1/2"        | 7.13        |
| 0359980                 | .105"    | 0.315"      | 1-1/2"        | 7.13        |
| 0359981                 | .110"    | 0.33"       | 1-1/2"        | 7.13        |
| 0359982                 | .115"    | 0.345"      | 1-1/2"        | 7.13        |
| 0359983                 | .120"    | 0.36"       | 1-1/2"        | 7.13        |

## Carbide End Mills Cont.



### Solid Carbide Miniature Mills Decimal - 4 Flute Single End - Ballnose

| Part No.            | Cut Dia. | Flute Lgth. | Overall Lgth. | Price /Each |
|---------------------|----------|-------------|---------------|-------------|
| <b>Ballnose End</b> |          |             |               |             |
| 0358478             | .010"    | 0.03"       | 1-1/2"        | \$27.41     |
| 0358484             | .011"    | 0.033"      | 1-1/2"        | 27.41       |
| 0358486             | .012"    | 0.036"      | 1-1/2"        | 27.41       |
| 0358488             | .013"    | 0.039"      | 1-1/2"        | 27.41       |
| 0358490             | .014"    | 0.042"      | 1-1/2"        | 27.41       |
| 0358492             | .015"    | 0.045"      | 1-1/2"        | 27.41       |
| 0358494             | .016"    | 0.048"      | 1-1/2"        | 24.12       |
| 0358496             | .017"    | 0.051"      | 1-1/2"        | 24.12       |
| 0358498             | .018"    | 0.054"      | 1-1/2"        | 24.12       |
| 0358500             | .019"    | 0.057"      | 1-1/2"        | 24.12       |
| 0358502             | .020"    | 0.06"       | 1-1/2"        | 24.12       |
| 0358508             | .021"    | 0.063"      | 1-1/2"        | 24.12       |
| 0358510             | .022"    | 0.066"      | 1-1/2"        | 24.12       |
| 0358512             | .023"    | 0.069"      | 1-1/2"        | 24.12       |
| 0358514             | .024"    | 0.072"      | 1-1/2"        | 24.12       |
| 0358516             | .025"    | 0.075"      | 1-1/2"        | 18.64       |
| 0358518             | .026"    | 0.078"      | 1-1/2"        | 18.64       |
| 0358520             | .027"    | 0.081"      | 1-1/2"        | 18.64       |

| Part No.            | Cut Dia. | Flute Lgth. | Overall Lgth. | Price /Each |
|---------------------|----------|-------------|---------------|-------------|
| <b>Ballnose End</b> |          |             |               |             |
| 0358522             | .028"    | 0.084"      | 1-1/2"        | \$18.64     |
| 0358524             | .029"    | 0.087"      | 1-1/2"        | 18.64       |
| 0358526             | .030"    | 0.09"       | 1-1/2"        | 12.06       |
| 0358533             | .031"    | 0.093"      | 1-1/2"        | 12.06       |
| 0358535             | .032"    | 0.096"      | 1-1/2"        | 12.06       |
| 0358537             | .033"    | 0.099"      | 1-1/2"        | 12.06       |
| 0358539             | .034"    | 0.102"      | 1-1/2"        | 12.06       |
| 0358541             | .035"    | 0.105"      | 1-1/2"        | 12.06       |
| 0358543             | .036"    | 0.108"      | 1-1/2"        | 12.06       |
| 0358545             | .037"    | 0.111"      | 1-1/2"        | 12.06       |
| 0358547             | .038"    | 0.114"      | 1-1/2"        | 12.06       |
| 0358549             | .039"    | 0.117"      | 1-1/2"        | 12.06       |
| 0358551             | .040"    | 0.12"       | 1-1/2"        | 12.06       |
| 0358558             | .041"    | 0.123"      | 1-1/2"        | 12.06       |
| 0358560             | .042"    | 0.126"      | 1-1/2"        | 12.06       |
| 0358562             | .043"    | 0.129"      | 1-1/2"        | 12.06       |
| 0358564             | .044"    | 0.132"      | 1-1/2"        | 12.06       |
| 0358567             | .045"    | 0.135"      | 1-1/2"        | 12.06       |
| 0358569             | .046"    | 0.138"      | 1-1/2"        | 12.06       |
| 0358571             | .047"    | 0.141"      | 1-1/2"        | 12.06       |
| 0358573             | .048"    | 0.144"      | 1-1/2"        | 12.06       |
| 0358575             | .049"    | 0.147"      | 1-1/2"        | 12.06       |
| 0358577             | .050"    | 0.15"       | 1-1/2"        | 12.06       |
| 0358584             | .051"    | 0.153"      | 1-1/2"        | 12.06       |
| 0358586             | .052"    | 0.156"      | 1-1/2"        | 12.06       |

| Part No.            | Cut Dia. | Flute Lgth. | Overall Lgth. | Price /Each |
|---------------------|----------|-------------|---------------|-------------|
| <b>Ballnose End</b> |          |             |               |             |
| 0358588             | .053"    | 0.159"      | 1-1/2"        | \$12.06     |
| 0358590             | .054"    | 0.162"      | 1-1/2"        | 12.06       |
| 0358592             | .055"    | 0.165"      | 1-1/2"        | 12.06       |
| 0358595             | .056"    | 0.168"      | 1-1/2"        | 12.06       |
| 0358597             | .057"    | 0.171"      | 1-1/2"        | 12.06       |
| 0358599             | .058"    | 0.174"      | 1-1/2"        | 12.06       |
| 0358601             | .059"    | 0.177"      | 1-1/2"        | 12.06       |
| 0358599             | .058"    | 0.174"      | 1-1/2"        | 12.06       |
| 0358601             | .059"    | 0.177"      | 1-1/2"        | 12.06       |
| 0358603             | .060"    | 0.18"       | 1-1/2"        | 10.42       |
| 0358610             | .061"    | 0.183"      | 1-1/2"        | 10.42       |
| 0358612             | .062"    | 0.186"      | 1-1/2"        | 10.42       |
| 0358614             | .063"    | 0.189"      | 1-1/2"        | 10.42       |
| 0358616             | .064"    | 0.192"      | 1-1/2"        | 10.42       |
| 0358618             | .065"    | 0.195"      | 1-1/2"        | 10.42       |
| 0358621             | .070"    | 0.21"       | 1-1/2"        | 10.42       |
| 0358628             | .075"    | 0.225"      | 1-1/2"        | 10.42       |
| 0358631             | .080"    | 0.24"       | 1-1/2"        | 10.42       |
| 0358638             | .085"    | 0.255"      | 1-1/2"        | 10.42       |
| 0358641             | .090"    | 0.27"       | 1-1/2"        | 10.42       |
| 0358649             | .095"    | 0.285"      | 1-1/2"        | 10.42       |
| 0358651             | .100"    | 0.3"        | 1-1/2"        | 10.42       |
| 0358656             | .105"    | 0.315"      | 1-1/2"        | 10.42       |
| 0358658             | .110"    | 0.33"       | 1-1/2"        | 10.42       |
| 0358660             | .115"    | 0.345"      | 1-1/2"        | 10.42       |
| 0358662             | .120"    | 0.36"       | 1-1/2"        | 10.42       |

End Mills



### 2 Flute Single End Regular Square End Endmills Solid Micrograin Carbide - Regular Lengths 30° RH Spiral RHC

Mill Monster carbide regular end mills are manufactured from premium micrograin tungsten carbide with an advanced tool geometry that will outperform conventional style endmills. All endmills are center cutting allowing for 3 axis capability of plunging, ramping and profile milling.



| Cut Dia. | Flute Lgth. | Shank Dia. | Overall Lgth. | Uncoated Part No. | Price /Each | TiAlN Coated Part No. | Price /Each |
|----------|-------------|------------|---------------|-------------------|-------------|-----------------------|-------------|
| 1/64     | 3/64        | 1/8        | 1-1/2         | 0360589           | 17.43       |                       |             |
| 1/32     | 1/8         | 1/8        | 1-1/2         | 0360590           | 7.56        | 0360591               | \$10.41     |
| 3/64     | 1/8         | 1/8        | 1-1/2         | 0360592           | 7.56        | 0360593               | 10.41       |
| 1/16     | 1/4         | 1/8        | 1-1/2         | 0360594           | 6.46        | 0360595               | 9.32        |
| 5/64     | 1/4         | 1/8        | 1-1/2         | 0360596           | 6.46        | 0360597               | 9.32        |
| 3/32     | 3/8         | 1/8        | 1-1/2         | 0360598           | 6.46        | 0360599               | 9.32        |
| 7/64     | 3/8         | 1/8        | 1-1/2         | 0360600           | 6.46        | 0360601               | 9.32        |
| 1/8      | 1/2         | 1/8        | 1-1/2         | 0360602           | 6.02        | 0360603               | 8.89        |
| 9/64     | 9/16        | 3/16       | 2             | 0360604           | 9.98        | 0360605               | 13.05       |
| 5/32     | 9/16        | 3/16       | 2             | 0360606           | 9.98        | 0360607               | 13.05       |
| 11/64    | 9/16        | 3/16       | 2             | 0360608           | 9.98        | 0360609               | 13.05       |
| 3/16     | 5/8         | 3/16       | 2             | 0360610           | 8.67        | 0360611               | 11.95       |
| 13/64    | 5/8         | 1/4        | 2-1/2         | 0360612           | 12.83       | 0360613               | 16.67       |
| 7/32     | 5/8         | 1/4        | 2-1/2         | 0360614           | 12.83       | 0360615               | 16.67       |
| 15/64    | 3/4         | 1/4        | 2-1/2         | 0360616           | 12.83       | 0360617               | 16.67       |
| 1/4      | 3/4         | 1/4        | 2-1/2         | 0360618           | 11.51       | 0360619               | 15.35       |
| 17/64    | 3/4         | 5/16       | 2-1/2         | 0360620           | 17.88       | 0360621               | 24.67       |
| 9/32     | 3/4         | 5/16       | 2-1/2         | 0360622           | 17.88       | 0360623               | 24.67       |
| 19/64    | 13/16       | 5/16       | 2-1/2         | 0360624           | 17.88       | 0360649               | 24.67       |
| 5/16     | 13/16       | 5/16       | 2-1/2         | 0360625           | 15.90       | 0360626               | 21.60       |
| 21/64    | 1           | 3/8        | 2-1/2         | 0360627           | 22.04       | 0360650               | 28.29       |
| 11/32    | 1           | 3/8        | 2-1/2         | 0360628           | 22.04       | 0360629               | 28.29       |
| 23/64    | 1           | 3/8        | 2-1/2         | 0360630           | 22.04       | 0360651               | 28.29       |
| 3/8      | 1           | 3/8        | 2-1/2         | 0360631           | 19.19       | 0360632               | 26.86       |
| 7/16     | 1           | 7/16       | 2-3/4         | 0360633           | 27.63       | 0360634               | 37.93       |
| 1/2      | 1           | 1/2        | 3             | 0360635           | 30.60       | 0360636               | 41.56       |
| 9/16     | 1-1/4       | 9/16       | 3-1/2         | 0360637           | 53.95       | 0360638               | 70.51       |
| 5/8      | 1-1/4       | 5/8        | 3-1/2         | 0360639           | 56.25       | 0360640               | 72.80       |
| 11/16    | 1-1/2       | 3/4        | 4             | 0360641           | 102.85      | 0360642               | 119.30      |
| 3/4      | 1-1/2       | 3/4        | 4             | 0360643           | 90.46       | 0360644               | 106.91      |
| 7/8      | 1-1/2       | 7/8        | 4             | 0360645           | 148.80      | 0360646               | 179.50      |
| 1        | 1-1/2       | 1          | 4             | 0360647           | 168.75      | 0360648               | 199.45      |

### 4 Flute Single End Regular Square End Endmills

Four flute endmills are ideal for use in titanium, inconel alloys & hardened steels, stainless steel, and heat treated steels.



| Cut Dia. | Flute Lgth. | Shank Dia. | Overall Lgth. | Uncoated Part No. | Price /Each | TiAlN Coated Part No. | Price /Each |
|----------|-------------|------------|---------------|-------------------|-------------|-----------------------|-------------|
| 1/64     | 3/64        | 1/8        | 1-1/2         | 0360666           | \$17.43     |                       |             |
| 1/32     | 1/8         | 1/8        | 1-1/2         | 0360667           | 7.56        | 0360668               | \$10.41     |
| 3/64     | 1/8         | 1/8        | 1-1/2         | 0360669           | 7.56        | 0360670               | 10.41       |
| 1/16     | 1/4         | 1/8        | 1-1/2         | 0360671           | 6.46        | 0360672               | 9.32        |
| 5/64     | 1/4         | 1/8        | 1-1/2         | 0360673           | 6.46        | 0360674               | 9.32        |
| 3/32     | 3/8         | 1/8        | 1-1/2         | 0360675           | 6.46        | 0360676               | 9.32        |
| 7/64     | 3/8         | 1/8        | 1-1/2         | 0360677           | 6.46        | 0360678               | 9.32        |
| 1/8      | 1/2         | 1/8        | 1-1/2         | 0360679           | 6.02        | 0360680               | 8.89        |
| 9/64     | 9/16        | 3/16       | 2             | 0360681           | 9.98        | 0360682               | 13.05       |
| 5/32     | 9/16        | 3/16       | 2             | 0360683           | 9.98        | 0360684               | 13.05       |
| 11/64    | 9/16        | 3/16       | 2             | 0360685           | 9.98        | 0360686               | 13.05       |
| 3/16     | 5/8         | 3/16       | 2             | 0360687           | 8.67        | 0360688               | 11.95       |
| 13/64    | 5/8         | 1/4        | 2-1/2         | 0360689           | 12.83       | 0360690               | 16.67       |
| 7/32     | 5/8         | 1/4        | 2-1/2         | 0360691           | 12.83       | 0360692               | 16.67       |
| 15/64    | 3/4         | 1/4        | 2-1/2         | 0360693           | 12.83       | 0360694               | 16.67       |
| 1/4      | 3/4         | 1/4        | 2-1/2         | 0360695           | 11.51       | 0360698               | 15.35       |
| 17/64    | 3/4         | 5/16       | 2-1/2         | 0360696           | 17.88       | 0360697               | 24.67       |
| 9/32     | 3/4         | 5/16       | 2-1/2         | 0360699           | 17.88       | 0360700               | 24.67       |
| 19/64    | 13/16       | 5/16       | 2-1/2         | 0360701           | 17.88       | 0360726               | 24.67       |
| 5/16     | 13/16       | 5/16       | 2-1/2         | 0360702           | 15.90       | 0360703               | 21.60       |
| 21/64    | 1           | 3/8        | 2-1/2         | 0360704           | 22.04       | 0360727               | 28.29       |
| 11/32    | 1           | 3/8        | 2-1/2         | 0360705           | 22.04       | 0360706               | 28.29       |
| 23/64    | 1           | 3/8        | 2-1/2         | 0360707           | 22.04       | 0360728               | 28.29       |
| 3/8      | 1           | 3/8        | 2-1/2         | 0360708           | 19.19       | 0360709               | 26.86       |
| 7/16     | 1           | 7/16       | 2-3/4         | 0360710           | 27.63       | 0360711               | 37.93       |
| 1/2      | 1           | 1/2        | 3             | 0360712           | 30.60       | 0360713               | 41.56       |
| 9/16     | 1-1/4       | 9/16       | 3-1/2         | 0360714           | 53.95       | 0360715               | 70.51       |
| 5/8      | 1-1/4       | 5/8        | 3-1/2         | 0360716           | 56.25       | 0360717               | 72.80       |
| 11/16    | 1-1/2       | 3/4        | 4             | 0360718           | 102.85      | 0360719               | 119.30      |
| 3/4      | 1-1/2       | 3/4        | 4             | 0360720           | 90.46       | 0360721               | 106.91      |
| 7/8      | 1-1/2       | 7/8        | 4             | 0360722           | 148.80      | 0360723               | 179.50      |
| 1        | 1-1/2       | 1          | 4             | 0360724           | 168.75      | 0360725               | 199.45      |

The : symbol after a price denotes that it is a Direct Ship Product (DSP) and shipping, availability & lead times may vary.



# CARBIDE END MILLS

## Carbide End Mills Cont.



End Mills

### 2 Flute Single End Regular Ballnose Endmills Solid Micrograin Carbide - Regular Lengths 30° RH Spiral RHC

Two flute endmills are ideal for soft non-ferrous materials, aluminum, cast iron, and copper



| Cut Dia. | Flute Lgth. | Shank Dia. | Overall Lgth. | Uncoated Part No. | Price /Each | TiAlN Coated Part No. | Price /Each |
|----------|-------------|------------|---------------|-------------------|-------------|-----------------------|-------------|
| 1/64     | 3/64        | 1/8        | 1-1/2         | 0360749           | \$21.82     |                       |             |
| 1/32     | 1/8         | 1/8        | 1-1/2         | 0360751           | 9.53        | 0360758               | \$12.40     |
| 3/64     | 1/8         | 1/8        | 1-1/2         | 0360752           | 9.54        | 0360756               | 12.39       |
| 1/16     | 1/4         | 1/8        | 1-1/2         | 0360753           | 8.89        | 0360750               | 11.74       |
| 5/64     | 1/4         | 1/8        | 1-1/2         | 0360754           | 8.89        | 0360760               | 11.74       |
| 3/32     | 3/8         | 1/8        | 1-1/2         | 0360755           | 8.89        | 0360761               | 11.74       |
| 7/64     | 3/8         | 1/8        | 1-1/2         | 0360757           | 8.89        | 0360759               | 11.74       |
| 1/8      | 1/2         | 1/8        | 1-1/2         | 0360762           | 8.45        | 0360763               | 11.30       |
| 9/64     | 9/16        | 3/16       | 2             | 0360764           | 13.05       | 0360765               | 16.12       |
| 5/32     | 9/16        | 3/16       | 2             | 0360766           | 13.05       | 0360767               | 16.12       |
| 11/64    | 9/16        | 3/16       | 2             | 0360768           | 13.05       | 0360769               | 16.12       |
| 3/16     | 5/8         | 3/16       | 2             | 0360770           | 11.73       | 0360771               | 14.80       |
| 13/64    | 5/8         | 1/4        | 2-1/2         | 0360772           | 16.33       | 0360773               | 20.17       |
| 7/32     | 5/8         | 1/4        | 2-1/2         | 0360774           | 16.33       | 0360775               | 20.17       |
| 15/64    | 3/4         | 1/4        | 2-1/2         | 0360776           | 16.33       | 0360777               | 20.17       |
| 1/4      | 3/4         | 1/4        | 2-1/2         | 0360778           | 15.47       | 0360779               | 19.29       |
| 9/32     | 3/4         | 5/16       | 2-1/2         | 0360780           | 19.95       | 0360781               | 26.76       |
| 5/16     | 13/16       | 5/16       | 2-1/2         | 0360783           | 20.51       | 0360782               | 27.30       |
| 11/32    | 1           | 3/8        | 2-1/2         | 0360784           | 26.53       | 0360785               | 34.32       |
| 3/8      | 1           | 3/8        | 2-1/2         | 0360786           | 26.87       | 0360787               | 34.55       |
| 7/16     | 1           | 7/16       | 2-3/4         | 0360788           | 38.26       | 0360791               | 49.23       |
| 1/2      | 1           | 1/2        | 3             | 0360789           | 40.46       | 0360790               | 51.42       |
| 9/16     | 1-1/4       | 9/16       | 3-1/2         | 0360792           | 65.35       | 0360793               | 79.71       |
| 5/8      | 1-1/4       | 5/8        | 3-1/2         | 0360794           | 69.41       | 0360795               | 84.98       |
| 11/16    | 1-1/2       | 3/4        | 4             | 0360796           | 120.29      | 0360803               | 136.73      |
| 3/4      | 1-1/2       | 3/4        | 4             | 0360797           | 108.89      | 0360798               | 125.33      |
| 7/8      | 1-1/2       | 7/8        | 4             | 0360799           | 175.11      | 0360800               | 205.81      |
| 1        | 1-1/2       | 1          | 4             | 0360801           | 197.26      | 0360802               | 229.05      |

### 4 Flute Single End Regular Ballnose Endmills

Four flute endmills are ideal for use in titanium, inconel alloys & hardened, stainless and heat treated steels.



| Cut Dia. | Flute Lgth. | Shank Dia. | Overall Lgth. | Uncoated Part No. | Price /Each | TiAlN Coated Part No. | Price /Each |
|----------|-------------|------------|---------------|-------------------|-------------|-----------------------|-------------|
| 1/64     | 3/64        | 1/8        | 1-1/2         | 0360818           | \$21.82     |                       |             |
| 1/32     | 1/8         | 1/8        | 1-1/2         | 0360819           | 9.53        | 0360822               | \$12.40     |
| 3/64     | 1/8         | 1/8        | 1-1/2         | 0360820           | 9.54        | 0360823               | 12.39       |
| 1/16     | 1/4         | 1/8        | 1-1/2         | 0360821           | 8.89        | 0360824               | 11.74       |
| 5/64     | 1/4         | 1/8        | 1-1/2         | 0360822           | 8.89        | 0360825               | 11.74       |
| 3/32     | 3/8         | 1/8        | 1-1/2         | 0360823           | 8.89        | 0360826               | 11.74       |
| 7/64     | 3/8         | 1/8        | 1-1/2         | 0360824           | 8.89        | 0360827               | 11.74       |
| 1/8      | 1/2         | 1/8        | 1-1/2         | 0360825           | 8.45        | 0360828               | 11.30       |
| 9/64     | 9/16        | 3/16       | 2             | 0360826           | 13.05       | 0360829               | 16.12       |
| 5/32     | 9/16        | 3/16       | 2             | 0360827           | 13.05       | 0360830               | 16.12       |
| 11/64    | 9/16        | 3/16       | 2             | 0360828           | 13.05       | 0360831               | 16.12       |
| 3/16     | 5/8         | 3/16       | 2             | 0360829           | 11.73       | 0360832               | 14.80       |
| 13/64    | 5/8         | 1/4        | 2-1/2         | 0360830           | 16.33       | 0360833               | 20.17       |
| 7/32     | 5/8         | 1/4        | 2-1/2         | 0360831           | 16.33       | 0360834               | 20.17       |
| 15/64    | 3/4         | 1/4        | 2-1/2         | 0360832           | 16.33       | 0360835               | 20.17       |
| 1/4      | 3/4         | 1/4        | 2-1/2         | 0360833           | 15.47       | 0360836               | 19.29       |
| 9/32     | 3/4         | 5/16       | 2-1/2         | 0360834           | 20.50       | 0360837               | 27.31       |
| 5/16     | 13/16       | 5/16       | 2-1/2         | 0360835           | 20.51       | 0360838               | 27.30       |
| 11/32    | 1           | 3/8        | 2-1/2         | 0360836           | 26.53       | 0360839               | 34.32       |
| 3/8      | 1           | 3/8        | 2-1/2         | 0360837           | 26.87       | 0360840               | 34.55       |
| 7/16     | 1           | 7/16       | 2-3/4         | 0360838           | 38.26       | 0360841               | 49.23       |
| 1/2      | 1           | 1/2        | 3             | 0360839           | 40.46       | 0360842               | 51.42       |
| 9/16     | 1-1/4       | 9/16       | 3-1/2         | 0360840           | 65.35       | 0360843               | 79.71       |
| 5/8      | 1-1/4       | 5/8        | 3-1/2         | 0360841           | 69.41       | 0360844               | 84.98       |
| 11/16    | 1-1/2       | 3/4        | 4             | 0360842           | 120.29      | 0360845               | 136.73      |
| 3/4      | 1-1/2       | 3/4        | 4             | 0360843           | 108.89      | 0360846               | 125.33      |
| 7/8      | 1-1/2       | 7/8        | 4             | 0360844           | 175.11      | 0360847               | 205.81      |
| 1        | 1-1/2       | 1          | 4             | 0360845           | 197.26      | 0360848               | 229.05      |

### 2 Flute Single End Long Square End Endmills

Our advanced tool geometry optimizes maximum production rates with extended lengths of cut for longer reach and greater chip removal for a wide variety of materials.



| Cut Dia. | Flute Lgth. | Shank Dia. | Overall Lgth. | Uncoated Part No. | Price /Each | TiAlN Coated Part No. | Price /Each |
|----------|-------------|------------|---------------|-------------------|-------------|-----------------------|-------------|
| 1/8      | 3/4         | 1/8        | 2-1/4         | 0358803           | \$10.96     | 0358815               | \$14.84     |
| 5/32     | 3/4         | 3/16       | 2-1/2         | 0358826           | 14.84       | 0358830               | 19.35       |
| 3/16     | 3/4         | 3/16       | 2-1/2         | 0358852           | 13.54       | 0358862               | 18.06       |
| 1/4      | 1-1/8       | 1/4        | 3             | 0358882           | 17.80       | 0358889               | 22.96       |
| 5/16     | 1-1/8       | 5/16       | 3             | 0358924           | 22.58       | 0358931               | 28.38       |
| 3/8      | 1-1/8       | 3/8        | 3             | 0358965           | 27.73       | 0358944               | 35.47       |
| 7/16     | 2           | 7/16       | 4             | 0359012           | 43.60       | 0359015               | 53.92       |
| 1/2      | 1-1/2       | 1/2        | 4             | 0360729           | 45.15       | 0360730               | 56.12       |
| 1/2      | 2           | 1/2        | 4             | 0359061           | 48.38       | 0359076               | 59.34       |
| 5/8      | 2-1/4       | 5/8        | 5             | 0359108           | 85.79       | 0359119               | 106.42      |
| 3/4      | 2-1/4       | 3/4        | 5             | 0359155           | 123.20      | 0359169               | 149.00      |
| 1        | 2-1/4       | 1          | 5             | 0359201           | 205.49      | 0359213               | 236.46      |

### 4 Flute Single End Long Square End Endmills

Manufactured on cutting edge CNC equipment ensures uniform cutting loads on all edges for consistency and increased productivity. The machinist's choice for die and mold making and other deep pocket applications of many ferrous and most non-ferrous materials.



| Cut Dia. | Flute Lgth. | Shank Dia. | Overall Lgth. | Uncoated Part No. | Price /Each | TiAlN Coated Part No. | Price /Each |
|----------|-------------|------------|---------------|-------------------|-------------|-----------------------|-------------|
| 1/8      | 3/4         | 1/8        | 2-1/4         | 0358804           | \$10.96     | 0358816               | \$14.84     |
| 5/32     | 3/4         | 3/16       | 2-1/2         | 0358827           | 14.84       | 0358831               | 19.35       |
| 3/16     | 3/4         | 3/16       | 2-1/2         | 0358853           | 13.54       | 0358866               | 18.06       |
| 1/4      | 1-1/8       | 1/4        | 3             | 0358883           | 17.80       | 0358890               | 22.96       |
| 5/16     | 1-1/8       | 5/16       | 3             | 0358925           | 22.58       | 0358907               | 28.38       |
| 3/8      | 1-1/8       | 3/8        | 3             | 0358966           | 27.73       | 0358976               | 35.47       |
| 7/16     | 2           | 7/16       | 4             | 0359013           | 43.60       | 0359024               | 53.92       |
| 1/2      | 1-1/2       | 1/2        | 4             | 0359049           | 45.15       | 0359040               | 56.12       |
| 1/2      | 2           | 1/2        | 4             | 0359062           | 48.38       | 0359087               | 59.34       |
| 5/8      | 2-1/4       | 5/8        | 5             | 0359109           | 85.79       | 0359120               | 106.42      |
| 3/4      | 2-1/4       | 3/4        | 5             | 0359156           | 123.20      | 0359170               | 149.00      |
| 1        | 2-1/4       | 1          | 5             | 0359202           | 205.49      | 0359214               | 236.46      |

## Carbide End Mills Cont.



### 2 Flute Single End Long Ballnose Endmills

For easier to machine metals and non-metallic materials like aluminum, copper, and plastics. This cutter is best suited for deep pocket profiling and contouring.



| Flute    | Shank | Overall | Uncoated | Price    | TiAlN Coated | Price    |         |
|----------|-------|---------|----------|----------|--------------|----------|---------|
| Cut Dia. | Lgth. | Dia.    | Lgth.    | Part No. | /Each        | Part No. | /Each   |
| 1/8      | 3/4   | 1/8     | 2-1/4    | 0358799  | \$13.54      | 0358811  | \$17.41 |
| 5/32     | 3/4   | 3/16    | 2-1/2    | 0358822  | 17.41        | 0358829  | 21.93   |
| 3/16     | 3/4   | 3/16    | 2-1/2    | 0358850  | 16.13        | 0358865  | 20.64   |
| 1/4      | 1-1/8 | 1/4     | 3        | 0358878  | 21.67        | 0358888  | 26.84   |
| 5/16     | 1-1/8 | 5/16    | 3        | 0358920  | 26.19        | 0358930  | 31.99   |
| 3/8      | 1-1/8 | 3/8     | 3        | 0358961  | 32.89        | 0358981  | 40.64   |
| 7/16     | 2     | 7/16    | 4        | 0359008  | 52.64        | 0359021  | 62.95   |
| 1/2      | 2     | 1/2     | 4        | 0359059  | 58.69        | 0359071  | 69.66   |
| 5/8      | 2-1/4 | 5/8     | 5        | 0359104  | 102.55       | 0359116  | 123.20  |
| 3/4      | 2-1/4 | 3/4     | 5        | 0359151  | 143.19       | 0359167  | 168.99  |
| 1        | 2-1/4 | 1       | 5        | 0359197  | 228.72       | 0359211  | 259.68  |

### 4 Flute Single End Long Ballnose Endmills

Offering better work piece finishes without giving up productivity in general purpose milling applications. An excellent choice for three dimensional profiling.



| Flute    | Shank | Overall | Uncoated | Price    | TiAlN Coated | Price    |         |
|----------|-------|---------|----------|----------|--------------|----------|---------|
| Cut Dia. | Lgth. | Dia.    | Lgth.    | Part No. | /Each        | Part No. | /Each   |
| 1/8      | 3/4   | 1/8     | 2-1/4    | 0358800  | \$13.54      | 0358812  | \$17.41 |
| 5/32     | 3/4   | 3/16    | 2-1/2    | 0358823  | 17.41        | 0358828  | 21.93   |
| 3/16     | 3/4   | 3/16    | 2-1/2    | 0358851  | 16.13        | 0358867  | 20.64   |
| 1/4      | 1-1/8 | 1/4     | 3        | 0358879  | 21.67        | 0358895  | 26.84   |
| 5/16     | 1-1/8 | 5/16    | 3        | 0358921  | 26.19        | 0358937  | 31.99   |
| 3/8      | 1-1/8 | 3/8     | 3        | 0358962  | 32.89        | 0358982  | 40.64   |
| 7/16     | 2     | 7/16    | 4        | 0359009  | 52.64        | 0359029  | 62.95   |
| 1/2      | 2     | 1/2     | 4        | 0359060  | 58.69        | 0359075  | 69.66   |
| 5/8      | 2-1/4 | 5/8     | 5        | 0359105  | 102.55       | 0359123  | 123.20  |
| 3/4      | 2-1/4 | 3/4     | 5        | 0359152  | 143.19       | 0359173  | 168.99  |
| 1        | 2-1/4 | 1       | 5        | 0359198  | 228.72       | 0359225  | 259.68  |

### 2 Flute Single End X-Long Square End Endmills

Extended lengths of cut and longer overall lengths allow general purpose milling of deeper milling applications easy. A good choice for a variety of ferrous and non-ferrous materials.



| Flute    | Shank | Overall | Uncoated | Price    | TiAlN Coated | Price    |         |
|----------|-------|---------|----------|----------|--------------|----------|---------|
| Cut Dia. | Lgth. | Dia.    | Lgth.    | Part No. | /Each        | Part No. | /Each   |
| 1/8      | 1     | 1/8     | 3        | 0358801  | \$13.54      | 0358813  | \$17.41 |
| 5/32     | 1-1/8 | 3/16    | 3        | 0358824  | 16.13        | 0358832  | 20.00   |
| 3/16     | 1-1/8 | 3/16    | 3        | 0358847  | 14.84        | 0358858  | 18.71   |
| 1/4      | 1-1/2 | 1/4     | 4        | 0358880  | 20.51        | 0358891  | 28.25   |
| 5/16     | 1-5/8 | 5/16    | 4        | 0358922  | 25.28        | 0358932  | 34.19   |
| 3/8      | 1-3/4 | 3/8     | 4        | 0358963  | 31.60        | 0358977  | 40.89   |
| 7/16     | 3     | 7/16    | 6        | 0359010  | 65.79        | 0359022  | 79.98   |
| 1/2      | 3     | 1/2     | 6        | 0359031  | 75.47        | 0360738  | 82.44   |
| 5/8      | 3     | 5/8     | 6        | 0359106  | 117.52       | 0359117  | 140.74  |
| 3/4      | 3     | 3/4     | 6        | 0359153  | 166.80       | 0359168  | 192.60  |
| 1        | 3     | 1       | 6        | 0359199  | 255.42       | 0359212  | 288.96  |

### 4 Flute Single End X-Long Square End Endmills

Strict tolerances and specifications ensure quality, consistency, and increased productivity. With advanced geometry design, the long flute length maximizes material removal while offering excellent finishes in deep pocket milling applications.



| Flute    | Shank | Overall | Uncoated | Price    | TiAlN Coated | Price    |         |
|----------|-------|---------|----------|----------|--------------|----------|---------|
| Cut Dia. | Lgth. | Dia.    | Lgth.    | Part No. | /Each        | Part No. | /Each   |
| 1/8      | 1     | 1/8     | 3        | 0358802  | \$13.54      | 0358814  | \$17.41 |
| 5/32     | 1-1/8 | 3/16    | 3        | 0358825  | 16.13        | 0358834  | 20.00   |
| 3/16     | 1-1/8 | 3/16    | 3        | 0358848  | 14.84        | 0358860  | 18.71   |
| 1/4      | 1-1/2 | 1/4     | 4        | 0358881  | 20.51        | 0358893  | 28.25   |
| 5/16     | 1-5/8 | 5/16    | 4        | 0358923  | 25.28        | 0358934  | 34.19   |
| 3/8      | 1-3/4 | 3/8     | 4        | 0358964  | 31.60        | 0358949  | 40.89   |
| 7/16     | 3     | 7/16    | 6        | 0359011  | 65.79        | 0359023  | 79.98   |
| 1/2      | 3     | 1/2     | 6        | 0360747  | 75.47        | 0359045  | 82.44   |
| 5/8      | 3     | 5/8     | 6        | 0359107  | 117.52       | 0359118  | 140.74  |
| 3/4      | 3     | 3/4     | 6        | 0359154  | 166.80       | 0359139  | 192.60  |
| 1        | 3     | 1       | 6        | 0359200  | 255.42       | 0359218  | 288.96  |

### 2 Flute Single End X-Long Ballnose Endmills

When cutting contours in hard to reach areas, this cutter will get the job done. Widely used by die and mold makers in a wide variety of materials.



| Flute    | Shank | Overall | Uncoated | Price    | TiAlN Coated | Price    |         |
|----------|-------|---------|----------|----------|--------------|----------|---------|
| Cut Dia. | Lgth. | Dia.    | Lgth.    | Part No. | /Each        | Part No. | /Each   |
| 1/8      | 1     | 1/8     | 3        | 0358797  | \$16.13      | 0358817  | \$20.00 |
| 5/32     | 1-1/8 | 3/16    | 3        | 0358820  | 18.71        | 0358833  | 22.58   |
| 3/16     | 1-1/8 | 3/16    | 3        | 0358845  | 17.41        | 0358859  | 21.28   |
| 1/4      | 1-1/2 | 1/4     | 4        | 0358876  | 24.38        | 0358892  | 32.12   |
| 5/16     | 1-5/8 | 5/16    | 4        | 0358918  | 28.89        | 0358933  | 37.80   |
| 3/8      | 1-3/4 | 3/8     | 4        | 0358959  | 36.76        | 0358978  | 46.06   |
| 7/16     | 3     | 7/16    | 6        | 0359006  | 74.82        | 0359025  | 89.01   |
| 1/2      | 3     | 1/2     | 6        | 0359030  | 85.79        | 0359077  | 99.98   |
| 5/8      | 3     | 5/8     | 6        | 0359102  | 134.29       | 0359124  | 157.51  |
| 3/4      | 3     | 3/4     | 6        | 0359149  | 186.79       | 0359174  | 212.59  |
| 1        | 3     | 1       | 6        | 0359195  | 286.38       | 0359219  | 319.92  |

### 4 Flute Single End X-Long Ballnose Endmills

For 3-D profiling and enhanced surface finishes in contour cutting. Special gashing along the flute face allows for rapid chip removal in plunge cutting. Great for low carbon steel to higher rockwell exotics.



| Flute    | Shank | Overall | Uncoated | Price    | TiAlN Coated | Price    |         |
|----------|-------|---------|----------|----------|--------------|----------|---------|
| Cut Dia. | Lgth. | Dia.    | Lgth.    | Part No. | /Each        | Part No. | /Each   |
| 1/8      | 1     | 1/8     | 3        | 0358798  | \$16.13      | 0358818  | \$20.00 |
| 5/32     | 1-1/8 | 3/16    | 3        | 0358821  | 18.71        | 0358835  | 22.58   |
| 3/16     | 1-1/8 | 3/16    | 3        | 0358846  | 17.41        | 0358863  | 21.28   |
| 1/4      | 1-1/2 | 1/4     | 4        | 0358877  | 24.38        | 0358896  | 32.12   |
| 5/16     | 1-5/8 | 5/16    | 4        | 0358919  | 28.89        | 0358938  | 37.80   |
| 3/8      | 1-3/4 | 3/8     | 4        | 0358960  | 36.76        | 0358983  | 46.06   |
| 7/16     | 3     | 7/16    | 6        | 0359007  | 74.82        | 0359026  | 89.01   |
| 1/2      | 3     | 1/2     | 6        | 0359083  | 85.79        | 0359091  | 99.98   |
| 5/8      | 3     | 5/8     | 6        | 0359103  | 134.29       | 0359125  | 157.51  |
| 3/4      | 3     | 3/4     | 6        | 0359150  | 186.79       | 0359175  | 212.59  |
| 1        | 3     | 1       | 6        | 0359196  | 286.38       | 0359220  | 319.92  |

# CARBIDE END MILLS

## Carbide End Mills Cont.



End Mills

### 2 Flute Single End Extended X-Long Endmills

Made from premium high rupture strength sub micrograin carbide, this tool was designed for high velocity machining. With a 20-40% higher production rate than conventional endmills, this harmonically balanced cutter produces smoother finishes with faster chip removal in inconel alloys, 4140, exotic materials, carbon steels, titanium and much more.

#### Long Reach Square End



| Cut Dia. | Flute Lgth. | Shank Dia. | Overall Lgth. | Uncoated Part No. | Price /Each | TiAlN Coated Part No. | Price /Each |
|----------|-------------|------------|---------------|-------------------|-------------|-----------------------|-------------|
| 1/4      | 1-1/2       | 1/4        | 6             | 0360731           | \$30.58     | 0360732               | \$38.32     |
| 5/16     | 1-1/2       | 5/16       | 6             | 0360733           | 37.80       | 0360734               | 46.69       |
| 3/8      | 1-1/2       | 3/8        | 6             | 0360735           | 46.31       | 0360736               | 55.60       |
| 1/2      | 1-1/2       | 1/2        | 6             | 0360737           | 68.24       | 0360738               | 82.44       |
| 5/8      | 1-1/2       | 5/8        | 6             | 0360739           | 97.91       | 0360740               | 123.71      |
| 3/4      | 1-1/2       | 3/4        | 6             | 0360741           | 149.51      | 0360742               | 175.31      |
| 1        | 1-1/2       | 1          | 6             | 0360743           | 235.42      | 0360744               | 268.96      |

### 2 Flute Single End Extended X-Long Endmills

High performance endmills made from cobalt premium carbide.

#### Long Reach Ballnose



| Cut Dia. | Flute Lgth. | Shank Dia. | Overall Lgth. | Uncoated Part No. | Price /Each | TiAlN Coated Part No. | Price /Each |
|----------|-------------|------------|---------------|-------------------|-------------|-----------------------|-------------|
| 1/4      | 1-1/2       | 1/4        | 6             | 0360870           | \$34.71     | 0360871               | \$42.44     |
| 5/16     | 1-1/2       | 5/16       | 6             | 0360872           | 44.12       | 0360873               | 53.02       |
| 3/8      | 1-1/2       | 3/8        | 6             | 0360874           | 53.02       | 0360875               | 62.31       |
| 1/2      | 1-1/2       | 1/2        | 6             | 0360876           | 81.53       | 0360877               | 95.72       |
| 5/8      | 1-1/2       | 5/8        | 6             | 0360878           | 119.33      | 0360879               | 145.13      |
| 3/4      | 1-1/2       | 3/4        | 6             | 0360880           | 172.21      | 0360881               | 198.01      |
| 1        | 1-1/2       | 1          | 6             | 0360882           | 262.78      | 0360883               | 296.32      |

### 2 Flute Single End Stub Square End Endmills

A proven performer in a non-ferrous & aluminum applications where strength, durability and maximum chip clearance are in mind. A powerhouse for general milling applications. Two flute endmills are ideal for soft non-ferrous materials, aluminum, cast iron and copper.



| Cut Dia. | Flute Lgth. | Shank Dia. | Overall Lgth. | Uncoated Part No. | Price /Each | TiAlN Coated Part No. | Price /Each |
|----------|-------------|------------|---------------|-------------------|-------------|-----------------------|-------------|
| 1/32     | 5/64        | 1/8        | 1-1/2         | 0358793           | \$7.12      | 0358810               | \$9.97      |
| 3/64     | 3/32        | 1/8        | 1-1/2         | 0358840           | 7.12        | 0358857               | 9.97        |
| 1/16     | 1/8         | 1/8        | 1-1/2         | 0358873           | 6.46        | 0358887               | 9.32        |
| 5/64     | 5/32        | 1/8        | 1-1/2         | 0358914           | 6.46        | 0358929               | 9.32        |
| 3/32     | 3/16        | 1/8        | 1-1/2         | 0358955           | 6.46        | 0358975               | 9.32        |
| 7/64     | 7/32        | 1/8        | 1-1/2         | 0359002           | 6.46        | 0359020               | 9.32        |
| 1/8      | 1/4         | 1/8        | 1-1/2         | 0359057           | 6.02        | 0359070               | 8.89        |
| 9/64     | 9/32        | 3/16       | 2             | 0359098           | 9.00        | 0359115               | 12.07       |
| 5/32     | 5/16        | 3/16       | 2             | 0359145           | 9.00        | 0359166               | 12.07       |
| 11/64    | 5/16        | 3/16       | 2             | 0359191           | 9.00        | 0359210               | 12.07       |
| 3/16     | 3/8         | 3/16       | 2             | 0359233           | 8.45        | 0359243               | 11.52       |
| 13/64    | 3/8         | 1/4        | 2             | 0359254           | 11.40       | 0359262               | 15.24       |
| 7/32     | 7/16        | 1/4        | 2             | 0359275           | 11.40       | 0359282               | 15.24       |
| 15/64    | 7/16        | 1/4        | 2             | 0359287           | 11.40       | 0359290               | 15.24       |
| 1/4      | 1/2         | 1/4        | 2             | 0359293           | 10.85       | 0359298               | 14.69       |
| 5/16     | 1/2         | 5/16       | 2             | 0359307           | 14.58       | 0359310               | 19.85       |
| 3/8      | 5/8         | 3/8        | 2             | 0359314           | 17.43       | 0359317               | 23.68       |
| 7/16     | 5/8         | 3/8        | 2-1/2         | 0359324           | 26.86       | 0359327               | 36.95       |
| 1/2      | 5/8         | 1/2        | 2-1/2         | 0359330           | 30.16       | 0359333               | 40.68       |
| 5/8      | 3/4         | 5/8        | 3             | 0359339           | 51.10       | 0359342               | 65.46       |
| 3/4      | 1           | 3/4        | 3             | 0359349           | 83.67       | 0359352               | 99.89       |

### 4 Flute Single End Extended X-Long Endmills

The four flute extended length endmill is the best choice for extended lengths of cut in slotting and deep milling applications of stainless steel, titanium, waspalloy, hardened and heat treated steels. This center cutting tool provides quality, consistency and increased productivity. Made from premium micrograin carbide, this tool is ready to tackle your hard to reach profiling applications.

#### Long Reach Square End



| Cut Dia. | Flute Lgth. | Shank Dia. | Overall Lgth. | Uncoated Part No. | Price /Each | TiAlN Coated Part No. | Price /Each |
|----------|-------------|------------|---------------|-------------------|-------------|-----------------------|-------------|
| 1/4      | 1-1/2       | 1/4        | 6             | 0358901           | \$30.58     | 0358908               | \$38.32     |
| 5/16     | 1-1/2       | 5/16       | 6             | 0358909           | 37.80       | 0360745               | 46.69       |
| 3/8      | 1-1/2       | 3/8        | 6             | 0358988           | 46.31       | 0358993               | 55.60       |
| 1/2      | 1-1/2       | 1/2        | 6             | 0360746           | 68.24       | 0359048               | 82.44       |
| 5/8      | 1-1/2       | 5/8        | 6             | 0359126           | 97.91       | 0360748               | 123.71      |
| 3/4      | 1-1/2       | 3/4        | 6             | 0359237           | 149.51      | 0359238               | 175.31      |
| 1        | 1-1/2       | 1          | 6             | 0359244           | 235.42      | 0359247               | 268.96      |

### 4 Flute Single End Extended X-Long Endmills

High performance endmills made from cobalt premium carbide.

#### Long Reach Ballnose



| Cut Dia. | Flute Lgth. | Shank Dia. | Overall Lgth. | Uncoated Part No. | Price /Each | TiAlN Coated Part No. | Price /Each |
|----------|-------------|------------|---------------|-------------------|-------------|-----------------------|-------------|
| 1/4      | 1-1/2       | 1/4        | 6             | 0358902           | \$34.71     | 0358904               | \$42.44     |
| 5/16     | 1-1/2       | 5/16       | 6             | 0360884           | 44.12       | 0360885               | 53.02       |
| 3/8      | 1-1/2       | 3/8        | 6             | 0358989           | 53.02       | 0358992               | 62.31       |
| 1/2      | 1-1/2       | 1/2        | 6             | 0360886           | 81.53       | 0360887               | 95.72       |
| 5/8      | 1-1/2       | 5/8        | 6             | 0359134           | 119.33      | 0359135               | 145.13      |
| 3/4      | 1-1/2       | 3/4        | 6             | 0359180           | 172.21      | 0359182               | 198.01      |
| 1        | 1-1/2       | 1          | 6             | 0359223           | 262.78      | 0359224               | 296.32      |

### 2 Flute Single End Stub Ballnose Endmills

Like its square end counterpart, this endmill is best suited for increased productivity with minimum in mind. A great choice in aluminum and non-ferrous profiling applications. Two flute endmills are ideal for soft non-ferrous materials, aluminum, cast iron and copper.



| Cut Dia. | Flute Lgth. | Shank Dia. | Overall Lgth. | Uncoated Part No. | Price /Each | TiAlN Coated Part No. | Price /Each |
|----------|-------------|------------|---------------|-------------------|-------------|-----------------------|-------------|
| 1/32     | 5/64        | 1/8        | 1-1/2         | 0358790           | \$9.53      | 0358808               | \$12.40     |
| 3/64     | 3/32        | 1/8        | 1-1/2         | 0358837           | 9.54        | 0358855               | 12.39       |
| 1/16     | 1/8         | 1/8        | 1-1/2         | 0358870           | 8.89        | 0358885               | 11.74       |
| 5/64     | 5/32        | 1/8        | 1-1/2         | 0358898           | 8.89        | 0358905               | 11.74       |
| 3/32     | 3/16        | 1/8        | 1-1/2         | 0358911           | 8.89        | 0358927               | 11.74       |
| 7/64     | 7/32        | 1/8        | 1-1/2         | 0358940           | 8.89        | 0358946               | 11.74       |
| 1/8      | 1/4         | 1/8        | 1-1/2         | 0358952           | 8.45        | 0358973               | 11.30       |
| 9/64     | 9/32        | 3/16       | 2             | 0358986           | 11.62       | 0358995               | 14.69       |
| 5/32     | 5/16        | 3/16       | 2             | 0358999           | 11.62       | 0359018               | 14.69       |
| 11/64    | 5/16        | 3/16       | 2             | 0359033           | 11.62       | 0359042               | 14.69       |
| 3/16     | 3/8         | 3/16       | 2             | 0359051           | 11.07       | 0359067               | 14.14       |
| 13/64    | 3/8         | 1/4        | 2             | 0359079           | 14.36       | 0359088               | 18.20       |
| 7/32     | 7/16        | 1/4        | 2             | 0359094           | 14.36       | 0359112               | 18.20       |
| 15/64    | 7/16        | 1/4        | 2             | 0359128           | 14.36       | 0359910               | 18.20       |
| 1/4      | 1/2         | 1/4        | 2             | 0359142           | 13.82       | 0359164               | 17.65       |
| 5/16     | 1/2         | 5/16       | 2             | 0359188           | 18.86       | 0359208               | 24.56       |
| 3/8      | 5/8         | 3/8        | 2             | 0359229           | 22.59       | 0359241               | 28.84       |
| 7/16     | 5/8         | 3/8        | 2-1/2         | 0359250           | 33.89       | 0359260               | 41.78       |
| 1/2      | 5/8         | 1/2        | 2-1/2         | 0359271           | 38.05       | 0359280               | 46.38       |
| 5/8      | 3/4         | 5/8        | 3             | 0359291           | 62.83       | 0359296               | 77.20       |
| 3/4      | 1           | 3/4        | 3             | 0359301           | 98.46       | 0359303               | 114.69      |

## Carbide End Mills Cont.



### 4 Flute Single End Stub Square End Endmills

Four flute endmills are ideal for use in titanium, inconel alloys & hardened steels, stainless steel and heat treated steels. Mill Monster four flute advanced geometry endmills are designed with strength and versatility in mind. Offering uniform cutting loads on all edges for consistency and increased production. Stub length provides reduced deflection and promotes rigidity allowing for increased feeds and speeds while maintaining excellent finishes. Can be used in a wide variety of materials from non-ferrous to inconel, high nickel alloys, cast iron and higher rockwell exotics.



| Cut Dia. | Flute Lgth. | Shank Dia. | Overall Lgth. | Uncoated Part No. | Price /Each | TiAlN Coated Part No. | Price /Each |
|----------|-------------|------------|---------------|-------------------|-------------|-----------------------|-------------|
| 1/32     | 5/64        | 1/8        | 1-1/2         | 0358794           | \$7.12      | 0358805               | \$9.97      |
| 3/64     | 3/32        | 1/8        | 1-1/2         | 0358841           | 7.12        | 0358854               | 9.97        |
| 1/16     | 1/8         | 1/8        | 1-1/2         | 0358874           | 6.46        | 0358884               | 9.32        |
| 5/64     | 5/32        | 1/8        | 1-1/2         | 0358915           | 6.46        | 0358926               | 9.32        |
| 3/32     | 3/16        | 1/8        | 1-1/2         | 0358956           | 6.46        | 0358971               | 9.32        |
| 7/64     | 7/32        | 1/8        | 1-1/2         | 0359003           | 6.46        | 0359017               | 9.32        |
| 1/8      | 1/4         | 1/8        | 1-1/2         | 0359058           | 6.02        | 0359066               | 8.89        |
| 9/64     | 9/32        | 3/16       | 2             | 0359099           | 9.00        | 0359111               | 12.07       |
| 5/32     | 5/16        | 3/16       | 2             | 0359146           | 9.00        | 0359161               | 12.07       |
| 11/64    | 5/16        | 3/16       | 2             | 0359192           | 9.00        | 0359206               | 12.07       |
| 3/16     | 3/8         | 3/16       | 2             | 0359234           | 8.45        | 0359239               | 11.52       |
| 13/64    | 3/8         | 1/4        | 2             | 0359255           | 11.40       | 0359259               | 15.24       |
| 7/32     | 7/16        | 1/4        | 2             | 0359276           | 11.40       | 0359279               | 15.24       |
| 15/64    | 7/16        | 1/4        | 2             | 0359288           | 11.40       | 0359289               | 15.24       |
| 1/4      | 1/2         | 1/4        | 2             | 0359294           | 10.85       | 0359295               | 14.69       |
| 5/16     | 1/2         | 5/16       | 2             | 0359308           | 14.58       | 0359309               | 19.85       |
| 3/8      | 5/8         | 3/8        | 2             | 0359315           | 17.43       | 0359316               | 23.68       |
| 7/16     | 5/8         | 3/8        | 2-1/2         | 0359325           | 26.86       | 0359326               | 36.95       |
| 1/2      | 5/8         | 1/2        | 2-1/2         | 0359331           | 30.16       | 0359332               | 40.68       |
| 5/8      | 3/4         | 5/8        | 3             | 0359340           | 51.10       | 0359341               | 65.46       |
| 3/4      | 1           | 3/4        | 3             | 0359350           | 83.67       | 0359351               | 99.89       |

### 4 Flute Single End Stub Ballnose Endmills

Mill Monster's strict tolerances and specifications ensure quality, consistency and increased productivity. This performance endmill is ready to tackle your general purpose milling applications where, productivity and extended tool life is in mind. Rigidity and minimal deflection allow for aggressive speeds and feeds while maintaining excellent size control.



| Cut Dia. | Flute Lgth. | Shank Dia. | Overall Lgth. | Uncoated Part No. | Price /Each | TiAlN Coated Part No. | Price /Each |
|----------|-------------|------------|---------------|-------------------|-------------|-----------------------|-------------|
| 1/32     | 5/64        | 1/8        | 1-1/2         | 0358791           | \$9.53      | 0358809               | \$12.40     |
| 3/64     | 3/32        | 1/8        | 1-1/2         | 0358838           | 9.54        | 0358856               | 12.39       |
| 1/16     | 1/8         | 1/8        | 1-1/2         | 0358871           | 8.89        | 0358886               | 11.74       |
| 5/64     | 5/32        | 1/8        | 1-1/2         | 0358899           | 8.89        | 0358906               | 11.74       |
| 3/32     | 3/16        | 1/8        | 1-1/2         | 0358912           | 8.89        | 0358928               | 11.74       |
| 7/64     | 7/32        | 1/8        | 1-1/2         | 0358941           | 8.89        | 0358947               | 11.74       |
| 1/8      | 1/4         | 1/8        | 1-1/2         | 0358953           | 8.45        | 0358974               | 11.30       |
| 9/64     | 9/32        | 3/16       | 2             | 0358987           | 11.62       | 0358996               | 14.69       |
| 5/32     | 5/16        | 3/16       | 2             | 0359000           | 11.62       | 0359019               | 14.69       |
| 11/64    | 5/16        | 3/16       | 2             | 0359034           | 11.62       | 0359043               | 14.69       |
| 3/16     | 3/8         | 3/16       | 2             | 0359052           | 11.07       | 0359068               | 14.14       |
| 13/64    | 3/8         | 1/4        | 2             | 0359080           | 14.36       | 0359089               | 18.20       |
| 7/32     | 7/16        | 1/4        | 2             | 0359095           | 14.36       | 0359113               | 18.20       |
| 15/64    | 7/16        | 1/4        | 2             | 0359129           | 14.36       | 0359111               | 18.20       |
| 1/4      | 1/2         | 1/4        | 2             | 0359143           | 13.82       | 0359165               | 17.65       |
| 5/16     | 1/2         | 5/16       | 2             | 0359189           | 18.86       | 0359209               | 24.56       |
| 3/8      | 1/2         | 5/16       | 2             | 0359230           | 22.59       | 0359242               | 28.84       |
| 7/16     | 5/8         | 7/16       | 2-1/2         | 0359251           | 33.89       | 0359261               | 41.78       |
| 1/2      | 5/8         | 3/8        | 2-1/2         | 0359272           | 38.05       | 0359281               | 46.38       |
| 5/8      | 3/4         | 7/16       | 3             | 0359292           | 62.83       | 0359297               | 77.20       |
| 3/4      | 1           | 1/2        | 3             | 0359302           | 98.46       | 0359304               | 114.69      |

### 2 Flute Double End Stub Square End Endmills

Tool offers increased rigidity and minimal deflection for shallow general purpose milling applications. Two flute design offers maximum chip clearance while maximizing speeds and feeds in non-ferrous and some ferrous materials. Tool also offers an economical saving with double ended cutting ability and stub length which preserves the life of the tool



| Cut Dia. | Flute Lgth. | Shank Dia. | Overall Lgth. | Uncoated Part No. | Price /Each | TiAlN Coated Part No. | Price /Each |
|----------|-------------|------------|---------------|-------------------|-------------|-----------------------|-------------|
| 1/32     | 1/16        | 1/8        | 1-1/2         | 0358795           | \$11.51     | 0358806               | \$16.18     |
| 3/64     | 1/8         | 1/8        | 1-1/2         | 0358842           | 11.51       | 0359917               | 16.18       |
| 1/16     | 1/8         | 1/8        | 1-1/2         | 0360888           | 10.27       | 0358864               | 14.93       |
| 5/64     | 1/8         | 1/8        | 1-1/2         | 0358849           | 10.27       | 0358894               | 14.92       |
| 3/32     | 3/16        | 1/8        | 1-1/2         | 0358916           | 10.27       | 0358935               | 14.92       |
| 7/64     | 3/16        | 1/8        | 1-1/2         | 0358943           | 10.27       | 0358945               | 14.92       |
| 1/8      | 1/4         | 1/8        | 1-1/2         | 0358957           | 10.05       | 0358979               | 14.71       |
| 9/64     | 5/16        | 3/16       | 2             | 0358969           | 14.62       | 0358997               | 19.28       |
| 5/32     | 5/16        | 3/16       | 2             | 0359004           | 14.62       | 0359027               | 19.28       |
| 11/64    | 5/16        | 3/16       | 2             | 0359036           | 14.62       | 0359041               | 19.28       |
| 3/16     | 3/8         | 3/16       | 2             | 0359055           | 13.27       | 0359046               | 17.93       |
| 13/64    | 1/2         | 1/4        | 2-1/2         | 0359069           | 18.39       | 0359084               | 26.34       |
| 7/32     | 1/2         | 1/4        | 2-1/2         | 0359100           | 19.49       | 0359121               | 26.34       |
| 15/64    | 1/2         | 1/4        | 2-1/2         | 0359131           | 18.39       | 0359136               | 26.34       |
| 1/4      | 1/2         | 1/4        | 2-1/2         | 0359147           | 17.93       | 0359171               | 24.81       |
| 9/32     | 1/2         | 5/16       | 2-1/2         | 0359159           | 22.50       | 0359184               | 33.75       |
| 5/16     | 1/2         | 5/16       | 2-1/2         | 0359193           | 20.97       | 0359207               | 32.20       |
| 11/32    | 9/16        | 3/8        | 2-1/2         | 0359217           | 28.63       | 0359226               | 39.94       |
| 3/8      | 9/16        | 3/8        | 2-1/2         | 0359235           | 24.89       | 0359246               | 36.19       |
| 7/16     | 5/8         | 7/16       | 2-3/4         | 0359256           | 37.12       | 0359264               | 52.20       |
| 1/2      | 5/8         | 1/2        | 3             | 0359277           | 42.21       | 0359284               | 57.31       |

### 2 Flute Double End Stub Ballnose Endmills

Two flute design makes this tool an ideal choice for aluminum, copper, cast iron, and many other materials. Ready to be put to the test due to its rigidity and ability to run faster promoting productivity while preserving tool life and size control.



| Cut Dia. | Flute Lgth. | Shank Dia. | Overall Lgth. | Uncoated Part No. | Price /Each | TiAlN Coated Part No. | Price /Each |
|----------|-------------|------------|---------------|-------------------|-------------|-----------------------|-------------|
| 1/32     | 1/16        | 1/8        | 1-1/2         | 0358472           | 14.50       | 0359912               | 19.16       |
| 3/64     | 1/8         | 1/8        | 1-1/2         | 0358483           | 14.50       | 0359916               | 19.17       |
| 1/16     | 1/8         | 1/8        | 1-1/2         | 0358475           | 13.73       | 0359914               | 18.39       |
| 5/64     | 1/8         | 1/8        | 1-1/2         | 0358476           | 13.73       | 0359913               | 18.39       |
| 3/32     | 3/16        | 1/8        | 1-1/2         | 0358531           | 13.73       | 0359923               | 18.39       |
| 7/64     | 3/16        | 1/8        | 1-1/2         | 0358477           | 13.73       | 0359915               | 18.39       |
| 1/8      | 1/4         | 1/8        | 1-1/2         | 0358556           | 12.85       | 0359927               | 17.52       |
| 9/64     | 5/16        | 3/16       | 2             | 0358565           | 19.24       | 0359929               | 23.89       |
| 5/32     | 5/16        | 3/16       | 2             | 0358582           | 19.24       | 0359931               | 23.89       |
| 11/64    | 5/16        | 3/16       | 2             | 0358593           | 19.24       | 0359932               | 23.89       |
| 3/16     | 3/8         | 3/16       | 2             | 0358608           | 18.46       | 0359655               | 23.12       |
| 13/64    | 1/2         | 1/4        | 2-1/2         | 0358619           | 24.16       | 0359936               | 31.01       |
| 7/32     | 1/2         | 1/4        | 2-1/2         | 0358626           | 24.16       | 0359938               | 31.01       |
| 15/64    | 1/2         | 1/4        | 2-1/2         | 0358629           | 24.16       | 0359940               | 31.01       |
| 1/4      | 1/2         | 1/4        | 2-1/2         | 0358636           | 22.62       | 0359943               | 29.48       |
| 9/32     | 1/2         | 5/16       | 2-1/2         | 0358639           | 28.27       | 0359944               | 39.50       |
| 5/16     | 1/2         | 5/16       | 2-1/2         | 0358646           | 28.28       | 0359946               | 39.51       |
| 11/32    | 9/16        | 3/8        | 2-1/2         | 0358647           | 35.94       | 0359949               | 47.25       |
| 3/8      | 9/16        | 3/8        | 2-1/2         | 0359231           | 35.57       | 0359950               | 47.46       |
| 7/16     | 5/8         | 7/16       | 2-3/4         | 0359252           | 51.75       | 0359951               | 66.83       |
| 1/2      | 5/8         | 1/2        | 3             | 0359273           | 59.10       | 0359953               | 74.19       |



# CARBIDE END MILLS

## Carbide End Mills Cont.



End Mills

### 4 Flute Double End Stub Square Endmills

Stub lengths promote reduced deflection and excellent rigidity for shallow milling and slotting applications. Four flute design offers great finishes, lower chip load per tooth and increased productivity while being run at high speeds and feeds. An ideal choice for ferrous steels, heat treated steels, high nickel alloys and high temperature alloys.



| Cut Dia. | Flute Lgth. | Shank Dia. | Overall Lgth. | Uncoated Part No. | Price /Each | TiAIN Coated Part No. | Price /Each |
|----------|-------------|------------|---------------|-------------------|-------------|-----------------------|-------------|
| 1/32     | 1/16        | 1/8        | 1-1/2         | 0358796           | 11.51       | 0358807               | 16.18       |
| 3/64     | 1/8         | 1/8        | 1-1/2         | 0358843           | 11.51       | 0358861               | 16.18       |
| 1/16     | 1/8         | 1/8        | 1-1/2         | 0358875           | 10.27       | 0359921               | 14.93       |
| 5/64     | 1/8         | 1/8        | 1-1/2         | 0358900           | 10.27       | 0358903               | 14.92       |
| 3/32     | 3/16        | 1/8        | 1-1/2         | 0358917           | 10.27       | 0358936               | 14.92       |
| 7/64     | 3/16        | 1/8        | 1-1/2         | 0358944           | 10.27       | 0359925               | 14.93       |
| 1/8      | 1/4         | 1/8        | 1-1/2         | 0358958           | 10.05       | 0358990               | 14.71       |
| 9/64     | 5/16        | 3/16       | 2             | 0358970           | 14.62       | 0359928               | 19.28       |
| 5/32     | 5/16        | 3/16       | 2             | 0359005           | 14.62       | 0359028               | 19.28       |
| 11/64    | 5/16        | 3/16       | 2             | 0359037           | 14.62       | 0359934               | 19.28       |
| 3/16     | 3/8         | 3/16       | 2             | 0359056           | 13.28       | 0359074               | 17.92       |
| 13/64    | 1/2         | 1/4        | 2-1/2         | 0359082           | 18.39       | 0359935               | 26.34       |
| 7/32     | 1/2         | 1/4        | 2-1/2         | 0359101           | 19.49       | 0359122               | 26.34       |
| 15/64    | 1/2         | 1/4        | 2-1/2         | 0359132           | 18.39       | 0359942               | 26.34       |
| 1/4      | 1/2         | 1/4        | 2-1/2         | 0359148           | 17.93       | 0359177               | 24.81       |
| 9/32     | 1/2         | 5/16       | 2-1/2         | 0359160           | 22.50       | 0359185               | 33.75       |
| 5/16     | 1/2         | 5/16       | 2-1/2         | 0359194           | 20.97       | 0359216               | 32.20       |
| 11/32    | 9/16        | 3/8        | 2-1/2         | 0359205           | 28.63       | 0359948               | 39.94       |
| 3/8      | 9/16        | 3/8        | 2-1/2         | 0359236           | 24.89       | 0359240               | 36.19       |
| 7/16     | 5/8         | 7/16       | 2-3/4         | 0359257           | 37.12       | 0359952               | 52.20       |
| 1/2      | 5/8         | 1/2        | 3             | 0359278           | 42.21       | 0359285               | 57.31       |

### 4 Flute Double End Stub Ballnose Endmills

If great finishes, high production, preserved tool life, and excellent size control are what you are looking for, then Mill Monster has made this tool for you. An excellent choice in shallow profiling applications in heat treated steels and other hard materials.



| Cut Dia. | Flute Lgth. | Shank Dia. | Overall Lgth. | Uncoated Part No. | Price /Each | TiAIN Coated Part No. | Price /Each |
|----------|-------------|------------|---------------|-------------------|-------------|-----------------------|-------------|
| 1/32     | 1/16        | 1/8        | 1-1/2         | 0358792           | 14.50       | 0359918               | 19.16       |
| 3/64     | 1/8         | 1/8        | 1-1/2         | 0358839           | 13.73       | 0359919               | 19.17       |
| 1/16     | 1/8         | 1/8        | 1-1/2         | 0358872           | 13.73       | 0359922               | 18.39       |
| 5/64     | 1/8         | 1/8        | 1-1/2         | 0358868           | 13.73       | 0359920               | 18.39       |
| 3/32     | 3/16        | 1/8        | 1-1/2         | 0358913           | 13.73       | 0359924               | 18.39       |
| 7/64     | 3/16        | 1/8        | 1-1/2         | 0358942           | 13.73       | 0359926               | 18.39       |
| 1/8      | 1/4         | 1/8        | 1-1/2         | 0358954           | 12.85       | 0358972               | 17.52       |
| 9/64     | 5/16        | 3/16       | 2             | 0358980           | 19.24       | 0359930               | 23.89       |
| 5/32     | 5/16        | 3/16       | 2             | 0359001           | 19.24       | 0359016               | 23.89       |
| 11/64    | 5/16        | 3/16       | 2             | 0359035           | 19.24       | 0359933               | 23.89       |
| 3/16     | 3/8         | 3/16       | 2             | 0359053           | 18.46       | 0359065               | 23.12       |
| 13/64    | 1/2         | 1/4        | 2-1/2         | 0359081           | 24.16       | 0359937               | 31.01       |
| 7/32     | 1/2         | 1/4        | 2-1/2         | 0359096           | 24.16       | 0359939               | 31.01       |
| 15/64    | 1/2         | 1/4        | 2-1/2         | 0359130           | 24.16       | 0359941               | 31.01       |
| 1/4      | 1/2         | 1/4        | 2-1/2         | 0359144           | 22.62       | 0359162               | 29.48       |
| 9/32     | 1/2         | 5/16       | 2-1/2         | 0359178           | 28.27       | 0359945               | 39.51       |
| 5/16     | 1/2         | 5/16       | 2-1/2         | 0359190           | 28.28       | 0359215               | 39.51       |
| 11/32    | 9/16        | 3/8        | 2-1/2         | 0359204           | 35.95       | 0359947               | 47.25       |
| 3/8      | 9/16        | 3/8        | 2-1/2         | 0359232           | 35.57       | 0359245               | 47.46       |
| 7/16     | 5/8         | 7/16       | 2-3/4         | 0359253           | 51.75       | 0359263               | 66.83       |
| 1/2      | 5/8         | 1/2        | 3             | 0359274           | 59.10       | 0359283               | 74.19       |

### 2 Flute Double End Square End And Ballnose Regular Endmills Solid Micrograin Carbide

Mill Monster double end regular endmills are ideal for milling, slotting, profiling and sinking. Designed with the same geometry as the single end standard, this cutter enables maximum chip clearance on a variety of materials. Tool is made with weldon flats.



| Part No. | Cut Dia. | Flute Lgth. | Shank Dia. | Overall Lgth. | Price /Each |
|----------|----------|-------------|------------|---------------|-------------|
| 0358505  | 3/16     | 1/2         | 3/8        | 3             | \$36.73     |
| 0358529  | 7/32     | 9/16        | 3/8        | 3-1/2         | 43.64       |
| 0358554  | 1/4      | 5/8         | 3/8        | 3-1/2         | 43.64       |
| 0358580  | 9/32     | 11/16       | 3/8        | 3-1/2         | 43.65       |
| 0358606  | 5/16     | 3/4         | 3/8        | 3-1/2         | 43.64       |
| 0358624  | 11/32    | 3/4         | 3/8        | 3-1/2         | 52.08       |
| 0358634  | 3/8      | 3/4         | 3/8        | 3-1/2         | 52.08       |
| 0358644  | 7/16     | 7/8         | 1/2        | 4             | 80.04       |
| 0358654  | 1/2      | 1           | 1/2        | 4             | 82.24       |

| Part No. | Cut Dia. | Flute Lgth. | Shank Dia. | Overall Lgth. | Price /Each |
|----------|----------|-------------|------------|---------------|-------------|
| 0358474  | 1/8      | 3/8         | 3/8        | 3             | \$36.73     |
| 0358482  | 5/32     | 7/16        | 3/8        | 3             | 36.73       |
| 0358506  | 3/16     | 1/2         | 3/8        | 3             | 36.73       |
| 0358530  | 7/32     | 9/16        | 3/8        | 3-1/2         | 43.64       |
| 0358555  | 1/4      | 5/8         | 3/8        | 3-1/2         | 43.64       |
| 0358581  | 9/32     | 11/16       | 3/8        | 3-1/2         | 43.65       |
| 0358607  | 5/16     | 3/4         | 3/8        | 3-1/2         | 43.64       |
| 0358625  | 11/32    | 3/4         | 3/8        | 3-1/2         | 52.08       |
| 0358635  | 3/8      | 3/4         | 3/8        | 3-1/2         | 52.08       |
| 0358645  | 7/16     | 7/8         | 1/2        | 4             | 80.04       |
| 0359228  | 1/2      | 1           | 1/2        | 4             | 82.24       |

### 4 Flute Double End Square End and Ballnose Regular Endmills Solid Micrograin Carbide

With Mill Monster unparalleled four flute design, this center cutting endmill promotes strength and productivity. With lower chip loads per tooth and producing an excellent work piece finish, this tool is ready to tackle your wide range of general milling applications. Tool is made with weldon flats.



| Part No. | Cut Dia. | Flute Lgth. | Shank Dia. | Overall Lgth. | Price /Each |
|----------|----------|-------------|------------|---------------|-------------|
| 0358470  | 1/8      | 3/8         | 3/8        | 3             | \$40.92     |
| 0358479  | 5/32     | 7/16        | 3/8        | 3             | 41.80       |
| 0358503  | 3/16     | 1/2         | 3/8        | 3             | 41.80       |
| 0358527  | 7/32     | 9/16        | 3/8        | 3-1/2         | 49.19       |
| 0358552  | 1/4      | 5/8         | 3/8        | 3-1/2         | 49.30       |
| 0358578  | 9/32     | 11/16       | 3/8        | 3-1/2         | 49.96       |
| 0358604  | 5/16     | 3/4         | 3/8        | 3-1/2         | 50.18       |
| 0358622  | 11/32    | 3/4         | 3/8        | 3-1/2         | 57.44       |
| 0358632  | 3/8      | 3/4         | 3/8        | 3-1/2         | 57.44       |
| 0358642  | 7/16     | 7/8         | 1/2        | 4             | 90.63       |
| 0358652  | 1/2      | 1           | 1/2        | 4             | 90.64       |

| Part No. | Cut Dia. | Flute Lgth. | Shank Dia. | Overall Lgth. | Price /Each |
|----------|----------|-------------|------------|---------------|-------------|
| 0358471  | 1/8      | 3/8         | 3/8        | 3             | 40.92       |
| 0358480  | 5/32     | 7/16        | 3/8        | 3             | 41.80       |
| 0358504  | 3/16     | 1/2         | 3/8        | 3             | 41.80       |
| 0358528  | 7/32     | 9/16        | 3/8        | 3-1/2         | 49.19       |
| 0358553  | 1/4      | 5/8         | 3/8        | 3-1/2         | 49.30       |
| 0358579  | 9/32     | 11/16       | 3/8        | 3-1/2         | 49.96       |
| 0358605  | 5/16     | 3/4         | 3/8        | 3-1/2         | 50.18       |
| 0358623  | 11/32    | 3/4         | 3/8        | 3-1/2         | 57.44       |
| 0358633  | 3/8      | 3/4         | 3/8        | 3-1/2         | 57.44       |
| 0358643  | 7/16     | 7/8         | 1/2        | 4             | 90.63       |
| 0358653  | 1/2      | 1           | 1/2        | 4             | 90.64       |

## Carbide End Mills Cont.



### 3 Flute Single End Regular Square End Endmills

Designed for general purpose milling, sinking and slotting of abrasive materials, plastics, cast irons, aluminum and other non-ferrous materials. A great choice for increased productivity, high material removal and great finishes.



| Part No. | Cut Dia. | Flute Lgth. | Shank Dia. | Overall Lgth. | Price /Each |
|----------|----------|-------------|------------|---------------|-------------|
| 0360652  | 1/16     | 1/4         | 1/8        | 1-1/2         | 6.47        |
| 0360653  | 5/64     | 1/4         | 1/8        | 1-1/2         | 6.47        |
| 0360654  | 3/32     | 3/8         | 1/8        | 1-1/2         | 6.47        |
| 0360655  | 7/64     | 3/8         | 1/8        | 1-1/2         | 6.47        |
| 0360656  | 1/8      | 1/2         | 1/8        | 1-1/2         | 6.03        |
| 0360657  | 5/32     | 9/16        | 3/16       | 2             | 9.98        |
| 0360658  | 3/16     | 5/8         | 3/16       | 2             | 8.66        |
| 0360659  | 7/32     | 5/8         | 1/4        | 2-1/2         | 12.83       |
| 0360660  | 1/4      | 3/4         | 1/4        | 2-1/2         | 11.51       |
| 0360661  | 5/16     | 13/16       | 5/16       | 2-1/2         | 15.90       |
| 0360662  | 3/8      | 1           | 3/8        | 2-1/2         | 19.19       |
| 0360663  | 1/2      | 1           | 1/2        | 3             | 30.59       |
| 0360664  | 5/8      | 1-1/4       | 5/8        | 3-1/2         | 56.25       |
| 0360665  | 3/4      | 1-1/2       | 3/4        | 4             | 90.46       |

### 3 Flute Single End Regular Ballnose Endmills

Good choice for increased productivity in your general milling, ramping, slotting and profiling applications. With Mill Monster advanced geometry, this tool can be put to the test in a wide variety of applications and materials.



| Part No. | Cut Dia. | Flute Lgth. | Shank Dia. | Overall Lgth. | Price /Each |
|----------|----------|-------------|------------|---------------|-------------|
| 0360804  | 1/16     | 1/4         | 1/8        | 1-1/2         | 8.88        |
| 0360805  | 5/64     | 1/4         | 1/8        | 1-1/2         | 8.88        |
| 0360806  | 3/32     | 3/8         | 1/8        | 1-1/2         | 8.88        |
| 0360807  | 7/64     | 3/8         | 1/8        | 1-1/2         | 8.88        |
| 0360808  | 1/8      | 1/2         | 1/8        | 1-1/2         | 8.44        |
| 0360809  | 5/32     | 9/16        | 3/16       | 2             | 13.05       |
| 0360810  | 3/16     | 5/8         | 3/16       | 2             | 11.73       |
| 0360811  | 7/32     | 5/8         | 1/4        | 2-1/2         | 16.34       |
| 0360812  | 1/4      | 3/4         | 1/4        | 2-1/2         | 16.55       |
| 0360813  | 5/16     | 13/16       | 5/16       | 2-1/2         | 18.86       |
| 0360814  | 3/8      | 1           | 3/8        | 2-1/2         | 26.86       |
| 0360815  | 1/2      | 1           | 1/2        | 3             | 44.84       |
| 0360816  | 5/8      | 1-1/4       | 5/8        | 3-1/2         | 69.41       |
| 0360817  | 3/4      | 1-1/2       | 3/4        | 4             | 108.88      |



### 3, 4, & 5 Flute Center Cutting Rougher High Performance "Roughing" Endmills Super Cobalt - Premium Carbide -Sub Micrograin-

Being made from premium high rupture strength sub micrograin carbide, the Mega Monster rougher will remove maximum stock with minimum vibration or chatter. This tool can be run at 2-6 times faster with less horsepower in a wide range of materials like stainless steel, cast iron, hardened tool steels, brass, bronze, inconel, titanium and nickel alloys. All roughers have weldon flats and with improved corner radius allowing corners to be stronger and less prone to chipping.



| Cut Dia. | No. of Flutes | Flute Lgth. | Shank Dia. | Overall Lgth. | Uncoated Part No. | Price /Each | TiAIN Coated Part No. | Price /Each |
|----------|---------------|-------------|------------|---------------|-------------------|-------------|-----------------------|-------------|
| 3/16     | 3             | 5/8         | 3/16       | 2             | 0360963           | \$35.09     | 0360964               | \$41.67     |
| 1/4      | 4             | 3/4         | 1/4        | 2-1/2         | 0359498           | 25.06       | 0360501               | 54.83       |
| 5/16     | 4             | 3/4         | 5/16       | 2-1/2         | 0359516           | 25.69       | 0360519               | 63.60       |
| 3/8      | 4             | 7/8         | 3/8        | 2-1/2         | 0359538           | 26.37       | 0360541               | 70.18       |
| 1/2      | 4             | 1-1/4       | 1/2        | 3             | 0359549           | 26.37       | 0360552               | 98.69       |
| 5/8      | 4             | 1-5/8       | 5/8        | 3-1/2         | 0359574           | 26.37       | 0360577               | 135.97      |
| 3/4      | 4             | 1-5/8       | 3/4        | 4             | 0359580           | 26.37       | 0360583               | 173.25      |
| 1        | 5             | 1-3/4       | 1          | 4             | 0360954           | 8.77        | 0359957               | 304.83      |

### 4 Flute Center Cutting with Chip Breaker High Performance "Rougher-Finisher" Endmills Super Cobalt - Premium Carbide -Sub Micrograin-

Chipbreakers are designed to minimize cutting forces, reduce chatter and prolong tool life. Advanced geometries allow for increased chip evacuation by as much as 50% while requiring less horsepower. Chipbreakers are staggered to create a smooth surface finish. Tool can be used on a wide variety of materials from soft non-ferrous materials to hard exotics.



| Cut Dia. | Flute Lgth. | Shank Dia. | Overall Lgth. | Uncoated Part No. | Price /Each | TiAIN Coated Part No. | Price /Each |
|----------|-------------|------------|---------------|-------------------|-------------|-----------------------|-------------|
| 1/4      | 3/4         | 1/4        | 2-1/2         | 0360499           | \$39.47     | 0360500               | \$46.05     |
| 1/4      | 1-1/8       | 1/4        | 3             | 0360486           | 43.86       | 0360487               | 54.28       |
| 5/16     | 13/16       | 5/16       | 2-1/2         | 0360517           | 46.05       | 0360518               | 53.73       |
| 5/16     | 1-1/8       | 5/16       | 3             | 0360506           | 51.54       | 0360507               | 62.50       |
| 3/8      | 1           | 3/8        | 2-1/2         | 0360539           | 57.02       | 0360540               | 65.79       |
| 3/8      | 1-1/8       | 3/8        | 3             | 0360528           | 63.60       | 0360529               | 75.66       |
| 1/2      | 1           | 1/2        | 3             | 0360550           | 74.56       | 0360551               | 88.82       |
| 1/2      | 2           | 1/2        | 4             | 0360553           | 82.24       | 360554                | 93.20       |
| 5/8      | 1-1/4       | 5/8        | 3-1/2         | 0360575           | 109.65      | 0360576               | 126.10      |
| 5/8      | 2-1/4       | 5/8        | 5             | 0360578           | 123.90      | 0360579               | 145.83      |
| 3/4      | 1-1/2       | 3/4        | 4             | 0360581           | 142.55      | 0360582               | 161.19      |
| 3/4      | 2-1/4       | 3/4        | 5             | 0360584           | 158.99      | 0360585               | 185.31      |
| 1        | 1-1/2       | 1          | 4             | 0359955           | 230.27      | 0359956               | 265.35      |
| 1        | 2-1/4       | 1          | 5             | 0359958           | 268.64      | 0359959               | 315.79      |



### High Performance Endmills Super Cobalt Premium Carbide Sub Micrograin

### 6 Flute 40° Square End Standard Length TiAIN Coated Endmills

An excellent choice for 3-D profiling and contour cutting in deep pocket milling applications.



| Part No. | Cut Dia. | Flute Lgth. | Shank Dia. | Overall Lgth. | Price /Each |
|----------|----------|-------------|------------|---------------|-------------|
| 0360502  | 3/8      | 1           | 2-1/2      | Regular       | \$36.33     |
| 0360965  | 1/2      | 1           | 3          | Regular       | 56.88       |
| 0360503  | 5/8      | 1-1/4       | 3-1/2      | Regular       | 112.87      |
| 0360504  | 3/4      | 1-1/2       | 4          | Regular       | 196.60      |
| 0360505  | 1        | 1-1/2       | 4          | Regular       | 291.97      |

# CARBIDE END MILLS, MILLING CUTTERS

## Carbide End Mills Cont.

End Mills, Milling Cutters



### 6 Flute 40° Square End Long Length TiAIN Coated Endmills

The long length offers a harmonically balanced cutter with the aggressive personality to challenge your toughest production job. The longer length of cut and the high helix will enable greater metal removal in your slotting and side milling applications.



| Part No. | Cut Dia. | Flute Lgth. | Shank Dia. | Overall Lgth. | Price /Each |
|----------|----------|-------------|------------|---------------|-------------|
| 0360542  | 3/8      | 1-1/8       | 3          | Long          | \$62.37     |
| 0360543  | 3/8      | 1-1/2       | 3          | Long Spec     | 65.17       |
| 0360544  | 1/2      | 1-1/2       | 4          | Med           | 107.37      |
| 0360545  | 1/2      | 2           | 4          | Long          | 112.28      |
| 0360546  | 5/8      | 2-1/4       | 5          | Long          | 186.29      |
| 0360547  | 3/4      | 2-1/4       | 5          | Long          | 236.16      |
| 0360548  | 1        | 2-1/4       | 5          | Long          | 267.96      |

### 6 Flute 40° Square End Extra Long Length TiAIN Coated Endmills

Simply the right choice for a high performance finishing tool. Offering excellent durability and improved surface finishes, this cutter is ready to go to work on your deep milling applications.



| Part No. | Cut Dia. | Flute Lgth. | Shank Dia. | Overall Lgth. | Price /Each |
|----------|----------|-------------|------------|---------------|-------------|
| 0360561  | 3/8      | 1-3/4       | 4          | X/Long        | \$76.44     |
| 0360562  | 1/2      | 3           | 6          | X/Long        | 150.08      |
| 0360563  | 5/8      | 3-1/4       | 6          | X/Long        | 207.83      |
| 0360564  | 3/4      | 3-1/4       | 6          | X/Long        | 291.53      |
| 0360571  | 3/4      | 4           | 7          | XX/Long       | 353.63      |
| 0360565  | 1        | 3-1/4       | 6          | X/Long        | 370.08      |
| 0360573  | 1        | 4           | 7          | XX/Long       | 452.31      |

### 6 Flute 40° Square End Extended Length TiAIN Coated Endmills

CNC ground to the highest industry standards, this extended length cutter is precisely the tool you need for deep pocket applications. The helical engineering on this six flute tool provides excellent finishes at higher metal removal rates.



| Part No. | Cut Dia. | Flute Lgth. | Shank Dia. | Overall Lgth. | Price /Each |
|----------|----------|-------------|------------|---------------|-------------|
| 0360566  | 3/8      | 1-1/2       | 6          | Ext-X/Long    | 74.54       |
| 0360568  | 1/2      | 1-1/2       | 6          | Ext-X/Long    | 147.17      |
| 0360569  | 5/8      | 1-1/2       | 6          | Ext-X/Long    | 201.59      |
| 0360570  | 3/4      | 1-1/2       | 6          | Ext-X/Long    | 287.33      |
| 0360572  | 1        | 1-1/2       | 6          | Ext-X/Long    | 293.18      |



### Drill Mills Solid Submicrograin Carbide

Used for drilling, chamfering, countersinking, spotting and profile milling.

- 90° Drill point angle
- CNC ground
- Extremely hard, wear resistant
- Recommended for difficult to machine materials
- Tolerances: +.000"/-.003"



| Part No.        | Cut Dia. | Flute Lgth. | Shank Dia. | Overall Lgth. | Price /Each |
|-----------------|----------|-------------|------------|---------------|-------------|
| <b>Uncoated</b> |          |             |            |               |             |
| 0358664         | 1/8"     | 1/2"        | 1/8"       | 1-1/2"        | \$8.89      |
| 0358666         | 3/16"    | 5/8"        | 3/16"      | 2"            | 11.84       |
| 0358668         | 1/4"     | 3/4"        | 1/4"       | 2-1/2"        | 15.90       |
| 0358671         | 5/16"    | 13/16"      | 5/16"      | 2-1/2"        | 22.48       |
| 0358682         | 3/8"     | 1"          | 3/8"       | 2-1/2"        | 26.32       |
| 0358690         | 7/16"    | 1"          | 7/16"      | 2-3/4"        | 37.18       |
| 0358704         | 1/2"     | 1"          | 1/2"       | 3"            | 41.55       |
| 0358674         | 5/8"     | 1-1/4"      | 5/8"       | 3-1/2"        | 70.18       |
| 0358749         | 3/4"     | 1-1/2"      | 3/4"       | 4"            | 115.24      |
| <b>TIAIN</b>    |          |             |            |               |             |
| 0358663         | 1/8"     | 1/2"        | 1/8"       | 1-1/2"        | \$11.73     |
| 0358665         | 3/16"    | 5/8"        | 3/16"      | 2"            | 15.13       |
| 0358667         | 1/4"     | 3/4"        | 1/4"       | 2-1/2"        | 20.83       |
| 0358670         | 5/16"    | 13/16"      | 5/16"      | 2-1/2"        | 29.06       |
| 0358681         | 3/8"     | 1"          | 3/8"       | 2-1/2"        | 34.00       |
| 0358689         | 7/16"    | 1"          | 7/16"      | 2-3/4"        | 48.14       |
| 0358703         | 1/2"     | 1"          | 1/2"       | 3"            | 52.53       |
| 0358726         | 5/8"     | 1-1/4"      | 5/8"       | 3-1/2"        | 85.53       |
| 0358748         | 3/4"     | 1-1/2"      | 3/4"       | 4"            | 131.70      |

## Milling Cutters

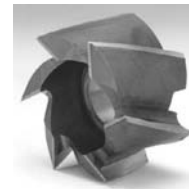


### Shell End Mills

#### Aluminum - Right Hand Helix Only

| Part No. | Diameter | Width  | Hole Size | No. of Teeth | Price /Each |
|----------|----------|--------|-----------|--------------|-------------|
| 3126697  | 1-1/4"   | 1"     | 1/2"      | 4            | \$—         |
| 3126698* | 1-1/4"   | 1"     | 1/2"      | 4            | —           |
| 3126699  | 1-1/2"   | 1-1/8" | 1/2"      | 4            | —           |
| 3126700* | 1-1/2"   | 1-1/8" | 1/2"      | 4            | —           |
| 3126701  | 2"       | 1-3/8" | 3/4"      | 4            | —           |
| 3126702* | 2"       | 1-3/8" | 3/4"      | 4            | —           |
| 3126703  | 2-1/2"   | 1-5/8" | 1"        | 4            | —           |
| 3126704* | 2-1/2"   | 1-5/8" | 1"        | 4            | —           |
| 3126705  | 3"       | 1-3/4" | 1-1/4"    | 6            | —           |
| 3126706* | 3"       | 1-3/4" | 1-1/4"    | 6            | —           |
| 3126707  | 3-1/2"   | 1-7/8" | 1-1/4"    | 6            | —           |
| 3126708* | 3-1/2"   | 1-7/8" | 1-1/4"    | 6            | —           |
| 3126709  | 4"       | 1-1/2" | 1-1/2"    | 6            | —           |
| 3126710* | 4"       | 1-1/2" | 1-1/2"    | 6            | —           |
| 3126711  | 4-1/2"   | 2-1/4" | 1-1/2"    | 6            | —           |
| 3126712* | 4-1/2"   | 2-1/4" | 1-1/2"    | 6            | —           |
| 3126713  | 5"       | 2-1/4" | 1-1/2"    | 8            | —           |
| 3126714* | 5"       | 2-1/4" | 1-1/2"    | 8            | —           |
| 3126715  | 6"       | 2-1/4" | 2"        | 8            | —           |
| 3126716* | 6"       | 2-1/4" | 2"        | 8            | —           |

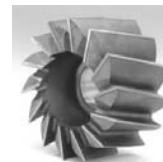
\*Indicates Tin Coating



#### Cobalt - Right Hand Helix Only

| Part No. | Diameter | Width  | Hole Size | No. of Teeth | Price /Each |
|----------|----------|--------|-----------|--------------|-------------|
| 3126717  | 1-1/4"   | 1"     | 1/2"      | 8            | \$—         |
| 3126718* | 1-1/4"   | 1"     | 1/2"      | 8            | —           |
| 3126719  | 1-1/2"   | 1-1/8" | 1/2"      | 8            | —           |
| 3126720* | 1-1/2"   | 1-1/8" | 1/2"      | 8            | —           |
| 3126721  | 1-3/4"   | 1-1/4" | 3/4"      | 8            | —           |
| 3126722* | 1-3/4"   | 1-1/4" | 3/4"      | 8            | —           |
| 3126723  | 2"       | 1-3/8" | 3/4"      | 10           | —           |
| 3126724* | 2"       | 1-3/8" | 3/4"      | 10           | —           |
| 3126725  | 2-1/4"   | 1-1/2" | 1"        | 10           | —           |
| 3126726* | 2-1/4"   | 1-1/2" | 1"        | 10           | —           |
| 3126727  | 2-1/2"   | 1-5/8" | 1"        | 10           | —           |
| 3126728* | 2-1/2"   | 1-5/8" | 1"        | 10           | —           |
| 3126729  | 2-3/4"   | 1-5/8" | 1"        | 10           | —           |
| 3126730* | 2-3/4"   | 1-5/8" | 1"        | 10           | —           |
| 3126731  | 3"       | 1-3/4" | 1-1/4"    | 12           | —           |
| 3126732* | 3"       | 1-3/4" | 1-1/4"    | 12           | —           |
| 3126733  | 3-1/2"   | 1-7/8" | 1-1/4"    | 12           | —           |
| 3126734* | 3-1/2"   | 1-7/8" | 1-1/4"    | 12           | —           |
| 3126735  | 4"       | 2-1/4" | 1-1/2"    | 14           | —           |
| 3126736* | 4"       | 2-1/4" | 1-1/2"    | 14           | —           |

\*Indicates Tin Coating



#### General Purpose - Right Hand Helix Only

| Part No. | Diameter | Width  | Hole Size | No. of Teeth | Price /Each |
|----------|----------|--------|-----------|--------------|-------------|
| 3126737  | 1-1/4"   | 1"     | 1/2"      | 8            | \$—         |
| 3126738* | 1-1/4"   | 1"     | 1/2"      | 8            | —           |
| 3126739  | 1-1/2"   | 1-1/8" | 1/2"      | 8            | —           |
| 3126740* | 1-1/2"   | 1-1/8" | 1/2"      | 8            | —           |
| 3126741  | 1-3/4"   | 1-1/4" | 3/4"      | 8            | —           |
| 3126742* | 1-3/4"   | 1-1/4" | 3/4"      | 8            | —           |
| 3126743  | 2"       | 1-3/8" | 3/4"      | 10           | —           |
| 3126744* | 2"       | 1-3/8" | 3/4"      | 10           | —           |
| 3126745  | 2-1/4"   | 1-1/2" | 1"        | 10           | —           |
| 3126746* | 2-1/4"   | 1-1/2" | 1"        | 10           | —           |
| 3126747  | 2-1/2"   | 1-5/8" | 1"        | 10           | —           |
| 3126748* | 2-1/2"   | 1-5/8" | 1"        | 10           | —           |
| 3126749  | 2-3/4"   | 1-5/8" | 1"        | 10           | —           |
| 3126750* | 2-3/4"   | 1-5/8" | 1"        | 10           | —           |
| 3126751  | 3"       | 1-3/4" | 1-1/4"    | 12           | —           |
| 3126752* | 3"       | 1-3/4" | 1-1/4"    | 12           | —           |
| 3126753  | 3-1/2"   | 1-7/8" | 1-1/4"    | 12           | —           |
| 3126754* | 3-1/2"   | 1-7/8" | 1-1/4"    | 12           | —           |
| 3126755  | 4"       | 2-1/4" | 1-1/2"    | 14           | —           |
| 3126756* | 4"       | 2-1/4" | 1-1/2"    | 14           | —           |
| 3126757  | 4-1/2"   | 2-1/4" | 1-1/2"    | 14           | —           |
| 3126758* | 4-1/2"   | 2-1/4" | 1-1/2"    | 14           | —           |
| 3126759  | 5"       | 2-1/4" | 1-1/2"    | 16           | —           |
| 3126760* | 5"       | 2-1/4" | 1-1/2"    | 16           | —           |
| 3126761  | 6"       | 2-1/4" | 2"        | 16           | —           |
| 3126762* | 6"       | 2-1/4" | 2"        | 16           | —           |
| 3126763  | 6"       | 2-1/4" | 2"        | 16           | —           |
| 3126764* | 6"       | 2-1/4" | 2"        | 16           | —           |

\*Indicates Tin Coating

## Milling Cutters Cont.



### Corner Rounding End Mills



Made with standard  
Weldon flats.

#### Corner Rounding End Mills

| Part No. | Radius | Shank Dia. | Large End Dia. | Small Dia. | OaL      | Price /Each |
|----------|--------|------------|----------------|------------|----------|-------------|
| 3126765  | 1/32"  | 3/8"       | 7/16           | 5/16"      | 2-1/2"   | \$—         |
| 3126766* | 1/32"  | 3/8"       | 7/16           | 5/16"      | 2-1/2"   | —           |
| 3126767  | 1/16"  | 3/8"       | 7/16           | 1/4"       | 2-1/2"   | —           |
| 3126768* | 1/16"  | 3/8"       | 7/16           | 1/4"       | 2-1/2"   | —           |
| 3126769  | 3/32"  | 3/8"       | 1/2            | 1/4"       | 2-1/2"   | —           |
| 3126770* | 3/32"  | 3/8"       | 1/2            | 1/4"       | 2-1/2"   | —           |
| 3126771  | 1/8"   | 1/2"       | 5/8            | 5/16"      | 3"       | —           |
| 3126772  | 1/8"   | 1/2"       | 5/8            | 5/16"      | 3"       | —           |
| 3126773  | 5/32"  | 1/2"       | 3/4            | 5/16"      | 3"       | —           |
| 3126774* | 5/32"  | 1/2"       | 3/4            | 5/16"      | 3"       | —           |
| 3126775  | 3/16"  | 1/2"       | 7/8            | 5/16"      | 2-15/16" | —           |
| 3126776  | 3/16"  | 3/4"       | 7/8            | 5/16"      | 3-1/8"   | —           |
| 3126777* | 3/16"  | 3/4"       | 7/8            | 5/16"      | 3-1/8"   | —           |
| 3126778* | 3/16"  | 1/2"       | 7/8            | 5/16"      | 2-15/16" | —           |
| 3126779  | 1/4"   | 1/2"       | 1              | 3/8"       | 3"       | —           |
| 3126780  | 1/4"   | 3/4"       | 1              | 3/8"       | 3-1/4"   | —           |
| 3126781* | 1/4"   | 3/4"       | 1              | 3/8"       | 3-1/4"   | —           |
| 3126782* | 1/4"   | 1/2"       | 1              | 3/8"       | 3"       | —           |
| 3126783  | 5/16"  | 3/4"       | 1-1/8          | 3/8"       | 3-1/4"   | —           |
| 3126784  | 5/16"  | 7/8"       | 1-1/8          | 3/8"       | 3-1/2"   | —           |
| 3126785* | 5/16"  | 7/8"       | 1-1/8          | 3/8"       | 3-1/2"   | —           |
| 3126786* | 5/16"  | 3/4"       | 1-1/8          | 3/8"       | 3-1/4"   | —           |
| 3126787  | 3/8"   | 3/4"       | 1-1/4          | 3/8"       | 3-1/2"   | —           |
| 3126788  | 3/8"   | 7/8"       | 1-1/4          | 3/8"       | 3-3/4"   | —           |
| 3126789* | 3/8"   | 7/8"       | 1-1/4          | 3/8"       | 3-3/4"   | —           |
| 3126790* | 3/8"   | 3/4"       | 1-1/4          | 3/8"       | 3-1/2"   | —           |
| 3126791  | 7/16"  | 3/4"       | 1-3/8          | 3/8"       | 3-3/4"   | —           |
| 3126792  | 7/16"  | 1"         | 1-3/8          | 3/8"       | 4"       | —           |
| 3126793* | 7/16"  | 1"         | 1-3/8          | 3/8"       | 4"       | —           |
| 3126794* | 7/16"  | 3/4"       | 1-3/8          | 3/8"       | 3-3/4"   | —           |
| 3126795  | 1/2"   | 3/4"       | 1-1/2          | 3/8"       | 3-7/8"   | —           |
| 3126796  | 1/2"   | 1"         | 1-1/2          | 3/8"       | 4-1/8"   | —           |
| 3126797* | 1/2"   | 1"         | 1-1/2          | 3/8"       | 4-1/8"   | —           |
| 3126798* | 1/2"   | 3/4"       | 1-1/2          | 3/8"       | 3-7/8"   | —           |
| 3126799  | 5/8"   | 3/4"       | 1-15/16        | 9/16"      | 4"       | —           |
| 3126800  | 5/8"   | 1"         | 1-15/16        | 9/16"      | 4-1/4"   | —           |
| 3126801* | 5/8"   | 1"         | 1-15/16        | 9/16"      | 4-1/4"   | —           |
| 3126802* | 5/8"   | 3/4"       | 1-15/16        | 9/16"      | 4"       | —           |
| 3126803  | 3/4"   | 5/8"       | 2-1/4          | 5/8"       | 4-1/8"   | —           |
| 3126804  | 3/4"   | 3/4"       | 2-1/4          | 5/8"       | 4-1/8"   | —           |
| 3126805* | 3/4"   | 3/4"       | 2-1/4          | 5/8"       | 4-1/8"   | —           |
| 3126806  | 3/4"   | 1"         | 2-1/4          | 5/8"       | 4-5/16"  | —           |
| 3126807* | 3/4"   | 1"         | 2-1/4          | 5/8"       | 4-5/16"  | —           |
| 3126808* | 3/4"   | 5/8"       | 2-1/4          | 5/8"       | 4-1/8"   | —           |

\*Indicates Tin Coating

## Plain Milling Cutters

- Used for light milling or finish cuts.
- Cutters less than 3/4" width have straight teeth.
- Cutters 3/4" wide and over have spiral teeth.
- Cutters come with Left Hand spiral, Right Hand cut.



| Part No. | Cut Dia. | Width  | Hole Size | No. of Teeth | Price /Each |
|----------|----------|--------|-----------|--------------|-------------|
| 3126809  | 2-1/2"   | 2"     | 1"        | 8            | \$—         |
| 3126810* | 2-1/2"   | 2"     | 1"        | 8            | —           |
| 3126811  | 2-1/2"   | 4"     | 1"        | 8            | —           |
| 3126812* | 2-1/2"   | 4"     | 1"        | 8            | —           |
| 3126813* | 3"       | 1-1/4" | 1"        | 8            | —           |
| 3126814* | 3"       | 1-1/4" | 1-1/4"    | 8            | —           |
| 3126815  | 3"       | 1-1/2" | 1-1/4"    | 8            | —           |
| 3126816* | 3"       | 1-1/2" | 1-1/4"    | 8            | —           |
| 3126817  | 3"       | 2"     | 1-1/4"    | 8            | —           |
| 3126818* | 3"       | 2"     | 1-1/4"    | 8            | —           |
| 3126819  | 3"       | 2-1/2" | 1-1/4"    | 8            | —           |
| 3126820* | 3"       | 2-1/2" | 1-1/4"    | 8            | —           |
| 3126821  | 3"       | 3"     | 1-1/4"    | 8            | —           |
| 3126822* | 3"       | 3"     | 1-1/4"    | 8            | —           |
| 3126823  | 3"       | 4"     | 1-1/4"    | 8            | —           |
| 3126824* | 3"       | 4"     | 1-1/4"    | 8            | —           |
| 3126825  | 3"       | 6"     | 1-1/4"    | 8            | —           |
| 3126826* | 3"       | 6"     | 1-1/4"    | 8            | —           |
| 3126827  | 4"       | 2"     | 1-1/2"    | 10           | —           |
| 3126828* | 4"       | 2"     | 1-1/2"    | 10           | —           |
| 3126829  | 4"       | 3"     | 1-1/2"    | 10           | —           |
| 3126830* | 4"       | 3"     | 1-1/2"    | 10           | —           |
| 3126831  | 4"       | 4"     | 1-1/2"    | 10           | —           |
| 3126832* | 4"       | 4"     | 1-1/2"    | 10           | —           |
| 3126833  | 4"       | 6"     | 1-1/2"    | 10           | —           |
| 3126834* | 4"       | 6"     | 1-1/2"    | 10           | —           |
| 3126835  | 2-1/2"   | 3/16"  | 1"        | 18           | —           |

\*Indicates Tin Coating

## Heavy Duty Plain Milling Cutters 45°, Left Hand Spiral - Right Hand Cut.



| Part No. | Cut Dia. | Width  | Hole Size | No. of Teeth | Price /Each |
|----------|----------|--------|-----------|--------------|-------------|
| 3126836* | 2-1/2"   | 3/16"  | 1"        | 18           | \$—         |
| 3126837  | 2-1/2"   | 1-1/2" | 1"        | 14           | —           |
| 3126838* | 2-1/2"   | 1-1/2" | 1"        | 14           | —           |
| 3126839  | 2-1/2"   | 2"     | 1"        | 14           | —           |
| 3126840* | 2-1/2"   | 2"     | 1"        | 14           | —           |
| 3126841  | 2-1/2"   | 2-1/2" | 1"        | 14           | —           |
| 3126842* | 2-1/2"   | 2-1/2" | 1"        | 14           | —           |
| 3126843  | 2-1/2"   | 3"     | 1"        | 14           | —           |
| 3126844* | 2-1/2"   | 3"     | 1"        | 14           | —           |
| 3126845  | 2-1/2"   | 1/4"   | 1"        | 18           | —           |
| 3126846* | 2-1/2"   | 1/4"   | 1"        | 18           | —           |
| 3126847  | 2-1/2"   | 5/16"  | 1"        | 18           | —           |
| 3126848* | 2-1/2"   | 5/16"  | 1"        | 18           | —           |
| 3126849  | 2-1/2"   | 3/8"   | 1"        | 18           | —           |
| 3126850* | 2-1/2"   | 3/8"   | 1"        | 18           | —           |
| 3126851  | 2-1/2"   | 7/16"  | 1"        | 18           | —           |
| 3126852* | 2-1/2"   | 7/16"  | 1"        | 18           | —           |
| 3126853  | 2-1/2"   | 1/2"   | 1"        | 18           | —           |

\*Indicates Tin Coating

| Part No. | Cut Dia. | Width  | Hole Size | No. of Teeth | Price /Each |
|----------|----------|--------|-----------|--------------|-------------|
| 3126854* | 2-1/2"   | 1/2"   | 1"        | 18           | \$—         |
| 3126855  | 2-1/2"   | 5/8"   | 1"        | 18           | —           |
| 3126856* | 2-1/2"   | 5/8"   | 1"        | 18           | —           |
| 3126857  | 2-1/2"   | 3/4"   | 1"        | 14           | —           |
| 3126858* | 2-1/2"   | 3/4"   | 1"        | 14           | —           |
| 3126859  | 2-1/2"   | 1"     | 1"        | 14           | —           |
| 3126860* | 2-1/2"   | 1"     | 1"        | 14           | —           |
| 3126861  | 3"       | 3/16"  | 1"        | 18           | —           |
| 3126862* | 3"       | 3/16"  | 1"        | 18           | —           |
| 3126863  | 3"       | 1-1/4" | 1-1/4"    | 16           | —           |
| 3126864* | 3"       | 1-1/4" | 1-1/4"    | 16           | —           |
| 3126865  | 3"       | 1-1/2" | 1-1/4"    | 16           | —           |
| 3126866* | 3"       | 1-1/2" | 1-1/4"    | 16           | —           |
| 3126867  | 3"       | 2"     | 1-1/4"    | 16           | —           |
| 3126868* | 3"       | 2"     | 1-1/4"    | 16           | —           |
| 3126869  | 3"       | 2-1/2" | 1-1/4"    | 16           | —           |
| 3126870* | 3"       | 2-1/2" | 1-1/4"    | 16           | —           |
| 3126871  | 3"       | 3"     | 1-1/4"    | 16           | —           |
| 3126872* | 3"       | 3"     | 1-1/4"    | 16           | —           |
| 3126873  | 3"       | 1/4"   | 1"        | 18           | —           |
| 3126874* | 3"       | 1/4"   | 1"        | 18           | —           |
| 3126875  | 3"       | 5/16"  | 1"        | 18           | —           |
| 3126876* | 3"       | 5/16"  | 1"        | 18           | —           |
| 3126877  | 3"       | 3/8"   | 1"        | 18           | —           |
| 3126878* | 3"       | 3/8"   | 1"        | 18           | —           |
| 3126879  | 3"       | 7/16"  | 1"        | 18           | —           |
| 3126880* | 3"       | 7/16"  | 1"        | 18           | —           |
| 3126881  | 3"       | 1/2"   | 1"        | 18           | —           |
| 3126882  | 3"       | 1/2"   | 1-1/4"    | 18           | —           |
| 3126883* | 3"       | 1/2"   | 1-1/4"    | 18           | —           |
| 3126884* | 3"       | 1/2"   | 1-1/4"    | 18           | —           |
| 3126885  | 3"       | 5/8"   | 1-1/4"    | 18           | —           |
| 3126886  | 3"       | 5/8"   | 1-1/4"    | 18           | —           |
| 3126887* | 3"       | 5/8"   | 1-1/4"    | 18           | —           |
| 3126888* | 3"       | 5/8"   | 1-1/4"    | 18           | —           |
| 3126889  | 3"       | 3/4"   | 1-1/4"    | 16           | —           |
| 3126890* | 3"       | 3/4"   | 1-1/4"    | 16           | —           |
| 3126891  | 3"       | 7/8"   | 1-1/4"    | 16           | —           |
| 3126892* | 3"       | 7/8"   | 1-1/4"    | 16           | —           |
| 3126893  | 3"       | 1"     | 1-1/4"    | 16           | —           |
| 3126894* | 3"       | 1"     | 1-1/4"    | 16           | —           |
| 3126895  | 4"       | 1/4"   | 1"        | 24           | —           |
| 3126896  | 4"       | 1/4"   | 1-1/4"    | 24           | —           |
| 3126897* | 4"       | 1/4"   | 1-1/4"    | 24           | —           |
| 3126898* | 4"       | 1/4"   | 1"        | 24           | —           |
| 3126899  | 4"       | 5/16"  | 1"        | 24           | —           |
| 3126900* | 4"       | 5/16"  | 1"        | 24           | —           |
| 3126901  | 4"       | 3/8"   | 1"        | 24           | —           |
| 3126902  | 4"       | 3/8"   | 1-1/4"    | 24           | —           |
| 3126903* | 4"       | 3/8"   | 1-1/4"    | 24           | —           |
| 3126904* | 4"       | 3/8"   | 1"        | 24           | —           |
| 3126905  | 4"       | 1/2"   | 1-1/4"    | 24           | —           |
| 3126906  | 4"       | 1/2"   | 1"        | 24           | —           |
| 3126907* | 4"       | 1/2"   | 1"        | 24           | —           |
| 3126908* | 4"       | 1/2"   | 1"        | 24           | —           |
| 3126909  | 4"       | 5/8"   | 1-1/4"    | 24           | —           |
| 3126910  | 4"       | 5/8"   | 1"        | 24           | —           |
| 3126911* | 4"       | 5/8"   | 1"        | 24           | —           |
| 3126912* | 4"       | 5/8"   | 1-1/4"    | 24           | —           |
| 3126913  | 4"       | 3/4"   | 1-1/4"    | 20           | —           |
| 3126914* | 4"       | 3/4"   | 1-1/4"    | 20           | —           |
| 3126915  | 4"       | 1"     | 1-1/4"    | 20           | —           |
| 3126916* | 4"       | 1"     | 1-1/4"    | 20           | —           |
| 3126917  | 4"       | 1-1/2" | 1-1/4"    | 20           | —           |
| 3126918* | 4"       | 1-1/2" | 1-1/4"    | 20           | —           |
| 3126919  | 4"       | 2"     | 1-1/4"    | 20           | —           |
| 3126920* | 4"       | 2"     | 1-1/4"    | 20           | —           |
| 3126921  | 4"       | 3"     | 1-1/4"    | 20           | —           |
| 3126922* | 4"       | 3"     | 1-1/4"    | 20           | —           |
| 3126923  | 4"       | 4"     | 1-1/4"    | 20           | —           |
| 3126924* | 4"       | 4"     | 1-1/4"    | 20           | —           |

\*Indicates Tin Coating



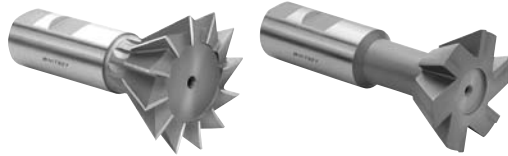
# MILLING CUTTERS

## Milling Cutters Cont.



Milling Cutters

### High Speed Steel/H.S.S. Tin Coated



7013244 & 7013260

7013272

#### Straight Tooth

| Part No.              | Overall Lgth. | Shank Dia. | Cut Dia. | Angle | Cutting Width | No. of Flutes | Price /Each |
|-----------------------|---------------|------------|----------|-------|---------------|---------------|-------------|
| 7013244               | 2-1/8"        | 3/8"       | 3/8"     | 45°   | 1/8"          | 3             | \$39.52     |
| 7013245               | 2-1/8"        | 3/8"       | 1/2"     | 45°   | 5/32"         | 3             | 39.52       |
| 7013246               | 2-1/4"        | 3/8"       | 3/4"     | 45°   | 1/4"          | 3             | 39.52       |
| 7013247               | 2-1/2"        | 1/2"       | 1"       | 45°   | 1/4"          | 10            | 45.87       |
| 7013248               | 2-7/8"        | 5/8"       | 1-3/8"   | 45°   | 3/8"          | 10            | 64.55       |
| 7013249               | 3-1/4"        | 7/8"       | 1-7/8"   | 45°   | 1/2"          | 12            | 141.27      |
| 7013250               | 3-3/4"        | 1"         | 2-1/4"   | 45°   | 11/16"        | 12            | 171.26      |
| 7013251               | 3-3/4"        | 1"         | 2-1/2"   | 45°   | 3/4"          | 12            | 219.19      |
| 7013252               | 2-1/8"        | 3/8"       | 3/8"     | 60°   | 3/16"         | 8             | 39.52       |
| 7013253               | 2-1/8"        | 3/8"       | 1/2"     | 60°   | 7/32"         | 8             | 39.52       |
| 7013254               | 2-1/8"        | 3/8"       | 3/4"     | 60°   | 5/16"         | 8             | 39.52       |
| 7013255               | 2-1/2"        | 1/2"       | 1"       | 60°   | 7/16"         | 10            | 45.87       |
| 7013256               | 2-7/8"        | 5/8"       | 1-3/8"   | 60°   | 9/16"         | 12            | 64.55       |
| 7013257               | 3-1/4"        | 7/8"       | 1-7/8"   | 60°   | 13/16"        | 12            | 141.27      |
| 7013258               | 3-3/4"        | 1"         | 2-1/4"   | 60°   | 1-1/16"       | 12            | 171.26      |
| 7013259               | 3-3/4"        | 1"         | 2-1/2"   | 60°   | 1-1/8"        | 6             | 219.19      |
| <b>M42 Cobalt</b>     |               |            |          |       |               |               |             |
| 7013260               | 2-1/8"        | 3/8"       | 3/8"     | 45°   | 1/8"          | 6             | \$49.46     |
| 7013261               | 2-1/8"        | 3/8"       | 1/2"     | 45°   | 1/8"          | 8             | 49.46       |
| 7013262               | 2-1/8"        | 3/16"      | 3/4"     | 45°   | 3/16"         | 8             | 49.46       |
| 7013263               | 2-1/2"        | 1/4"       | 1"       | 45°   | 1/4"          | 10            | 57.24       |
| 7013264               | 2-7/8"        | 3/8"       | 1-3/8"   | 45°   | 3/8"          | 10            | 80.74       |
| 7013265               | 3-1/4"        | 1/2"       | 1-7/8"   | 45°   | 1/2"          | 12            | 176.50      |
| 7013266               | 3-3/4"        | 11/16"     | 2-1/4"   | 45°   | 11/16"        | 12            | 213.96      |
| 7013267               | 3-3/4"        | 3/4"       | 2-1/2"   | 45°   | 3/4"          | 12            | 273.90      |
| 7013268               | 2-1/8"        | 3/16"      | 3/8"     | 60°   | 3/16"         | 8             | 49.46       |
| 7013269               | 2-1/8"        | 7/32"      | 1/2"     | 60°   | 7/32"         | 8             | 49.46       |
| 7013270               | 2-1/8"        | 5/16"      | 3/4"     | 60°   | 5/16"         | 8             | 49.46       |
| 7013271               | 2-1/2"        | 7/16"      | 1"       | 60°   | 7/16"         | 10            | 57.24       |
| <b>Carbide Tipped</b> |               |            |          |       |               |               |             |
| 7013272               | 2-1/8"        | 3/8"       | 3/8"     | 45°   | 1/8"          | 3             | \$79.99     |
| 7013273               | 2-1/8"        | 3/8"       | 1/2"     | 45°   | 5/32"         | 3             | 99.99       |
| 7013274               | 2-1/4"        | 3/8"       | 3/4"     | 45°   | 1/4"          | 3             | 99.99       |
| 7013275               | 2-3/4"        | 5/8"       | 1-1/4"   | 45°   | 5/16"         | 4             | 130.99      |
| 7013276               | 3-1/4"        | 3/4"       | 1-1/2"   | 45°   | 1/2"          | 4             | 149.99      |
| 7013277               | 4-1/4"        | 1"         | 2"       | 45°   | 5/8"          | 6             | 249.99      |
| 7013278               | 4-3/8"        | 1-1/4"     | 2-1/2"   | 45°   | 3/4"          | 6             | 339.99      |
| 7013279               | 4-1/2"        | 1-1/4"     | 3"       | 45°   | 1"            | 6             | 419.99      |
| 7013280               | 2-1/8"        | 3/8"       | 3/8"     | 60°   | 3/16"         | 3             | 79.99       |
| 7013281               | 2-1/8"        | 3/8"       | 1/2"     | 60°   | 7/32"         | 3             | 99.99       |
| 7013282               | 2-1/4"        | 3/8"       | 3/4"     | 60°   | 3/4"          | 3             | 99.99       |
| 7013283               | 2-1/2"        | 1/2"       | 1"       | 60°   | 3/8"          | 4             | 119.99      |
| 7013284               | 2-3/4"        | 5/8"       | 1-1/4"   | 60°   | 1/2"          | 4             | 130.99      |
| 7013285               | 3-1/4"        | 3/4"       | 1-1/2"   | 60°   | 5/8"          | 4             | 149.99      |
| 7013286               | 4-1/4"        | 1"         | 2"       | 60°   | 3/4"          | 6             | 249.99      |
| 7013287               | 4-3/8"        | 1-1/4"     | 2-1/2"   | 60°   | 7/8"          | 6             | 339.99      |
| 7013288               | 4-1/2"        | 1-1/4"     | 3"       | 60°   | 1-1/8"        | 6             | 419.99      |

### T-Slot Milling Cutters High Speed Steel/M42 Cobalt Staggered Tooth



| Part No.                     | Bolt Size | Cut Dia. | Cutting Width | Overall Lgth. | Shank Dia. | Neck Size | No. of Flutes | Price /Each |
|------------------------------|-----------|----------|---------------|---------------|------------|-----------|---------------|-------------|
| 7013289                      | 1/4"      | 9/16"    | 15/64"        | 2-19/32"      | 1/2"       | 17/64"    | 8             | \$48.41     |
| 7013290                      | 5/16"     | 21/32"   | 17/64"        | 2-11/16"      | 1/2"       | 21/64"    | 8             | 51.80       |
| 7013291                      | 3/8"      | 25/32"   | 21/64"        | 3-1/4"        | 3/4"       | 13/32"    | 8             | 75.82       |
| 7013292                      | 1/2"      | 31/32"   | 25/64"        | 3-7/16"       | 3/4"       | 17/32"    | 8             | 85.98       |
| 7013293                      | 5/8"      | 1-1/4"   | 31/64"        | 3-15/16"      | 1"         | 21/32"    | 8             | 117.24      |
| 7013294                      | 3/4"      | 1-15/32" | 5/8"          | 4-7/16"       | 1"         | 25/32"    | 8             | 137.19      |
| 7013295                      | 1"        | 1-27/32" | 53/64"        | 4-13/16"      | 1-1/4"     | 1-1/32"   | 12            | 221.73      |
| 7013296                      | 1-1/4"    | 2-7/32"  | 1-3/32"       | 5-3/8"        | 1-1/4"     | 1-7/32"   | 12            | 284.64      |
| 7013297                      | 1-1/2"    | 2-21/32" | 1-11/32"      | 5-29/32"      | 1-1/4"     | 1-17/32"  | 12            | 367.12      |
| 7013298                      | 1/4"      | 9/16"    | 15/64"        | 2-19/32"      | 1/2"       | 17/64"    | 8             | 62.22       |
| 7013299                      | 5/16"     | 21/32"   | 17/64"        | 2-11/16"      | 1/2"       | 21/64"    | 8             | 66.77       |
| 7013300                      | 3/8"      | 25/32"   | 21/64"        | 3-1/4"        | 3/4"       | 13/32"    | 8             | 97.56       |
| 7013301                      | 1/2"      | 31/32"   | 25/64"        | 3-7/16"       | 3/4"       | 17/32"    | 8             | 110.68      |
| 7013302                      | 5/8"      | 1-1/4"   | 31/64"        | 3-15/16"      | 1"         | 21/32"    | 8             | 150.95      |
| 7013303                      | 3/4"      | 1-15/32" | 5/8"          | 4-7/16"       | 1"         | 25/32"    | 8             | 176.55      |
| 7013304                      | 1"        | 1-27/32" | 53/64"        | 4-13/16"      | 1-1/4"     | 1-1/32"   | 12            | 285.49      |
| 7013305                      | 1-1/4"    | 2-7/32"  | 1-3/32"       | 5-3/8"        | 1-1/4"     | 1-7/32"   | 12            | 366.49      |
| 7013306                      | 1-1/2"    | 2-21/32" | 1-11/32"      | 5-29/32"      | 1-1/4"     | 1-17/32"  | 12            | 472.73      |
| <b>T-Slot Carbide Tipped</b> |           |          |               |               |            |           |               |             |
| 7013307                      | 1/4"      | 9/16"    | 15/64"        | 2-19/32"      | 1/2"       | 17/64"    | 6             | \$99.83     |
| 7013308                      | 5/16"     | 21/32"   | 17/64"        | 2-11/16"      | 1/2"       | 21/64"    | 6             | 104.02      |
| 7013309                      | 3/8"      | 25/32"   | 21/64"        | 3-1/4"        | 3/4"       | 13/32"    | 6             | 130.84      |
| 7013310                      | 1/2"      | 31/32"   | 25/64"        | 3-7/16"       | 3/4"       | 17/32"    | 6             | 142.59      |
| 7013311                      | 5/8"      | 1-1/4"   | 31/64"        | 3-15/16"      | 1"         | 21/32"    | 6             | 188.56      |
| 7013312                      | 3/4"      | 1-15/32" | 5/8"          | 4-7/16"       | 1"         | 25/32"    | 6             | 211.42      |
| 7013313                      | 1"        | 1-27/32" | 53/64"        | 4-13/16"      | 1-1/4"     | 1-1/32"   | 8             | 278.14      |
| 7013314                      | 1-1/4"    | 2-7/32"  | 1-3/32"       | 5-3/8"        | 1-1/4"     | 1-7/32"   | 8             | 377.76      |
| 7013315                      | 1-1/2"    | 2-21/32" | 1-11/32"      | 5-29/32"      | 1-1/4"     | 1-17/32"  | 8             | 440.45      |

### Chamfer Milling Cutters High Speed Steel Single Angle



| Part No. | Angle | Cut Dia. | Cutting Width | Overall Lgth. | Shank Dia. | No. of Flutes | Price /Each |
|----------|-------|----------|---------------|---------------|------------|---------------|-------------|
| 7013447  | 45°   | 1/2"     | 1/8"          | 2-1/8"        | 3/8"       | 8             | \$32.01     |
| 7013448  | 45°   | 3/4"     | 3/16"         | 2-1/8"        | 3/8"       | 8             | 39.83       |
| 7013449  | 45°   | 1"       | 5/16"         | 2-1/2"        | 1/2"       | 10            | 49.47       |
| 7013450  | 45°   | 1-1/2"   | 1/2"          | 2-3/4"        | 3/4"       | 12            | 63.86       |
| 7013451  | 60°   | 1/2"     | 7/32"         | 2-1/8"        | 3/8"       | 8             | 32.01       |
| 7013452  | 60°   | 3/4"     | 5/16"         | 2-1/8"        | 3/8"       | 8             | 39.83       |
| 7013453  | 60°   | 1"       | 7/16"         | 2-1/2"        | 1/2"       | 10            | 49.47       |
| 7013454  | 60°   | 1-1/2"   | 5/8"          | 2-3/4"        | 3/4"       | 12            | 63.86       |
| 7013455  | 45°   | 1/2"     | 1/8"          | 2-1/8"        | 3/8"       | 4             | 92.22       |
| 7013456  | 45°   | 3/4"     | 3/16"         | 2-1/8"        | 3/8"       | 6             | 113.80      |
| 7013457  | 45°   | 1"       | 5/16"         | 2-1/2"        | 1/2"       | 6             | 133.27      |
| 7013458  | 45°   | 1-1/2"   | 1/2"          | 2-3/4"        | 3/4"       | 8             | 177.24      |
| 7013459  | 60°   | 1/2"     | 7/32"         | 2-1/8"        | 3/8"       | 4             | 92.22       |
| 7013460  | 60°   | 3/4"     | 5/16"         | 2-1/8"        | 3/8"       | 6             | 113.80      |
| 7013461  | 60°   | 1"       | 7/16"         | 2-1/2"        | 1/2"       | 6             | 133.27      |
| 7013462  | 60°   | 1-1/2"   | 5/8"          | 2-3/4"        | 3/4"       | 8             | 177.24      |

## Milling Cutters Cont.



### Double Angle High Speed Steel

Double Angle



| Part No.              | Angle | Cut Dia. | Cutting Width | Overall Lgth. | Shank Dia. | No. of Flutes | Price /Each |
|-----------------------|-------|----------|---------------|---------------|------------|---------------|-------------|
| 7013463               | 60°   | 3/4"     | 3/16"         | 2-3/8"        | 3/8"       | 8             | \$30.26     |
| 7013464               | 60°   | 1"       | 5/16"         | 2-27/32"      | 1/2"       | 10            | 47.14       |
| 7013465               | 60°   | 1-3/8"   | 7/16"         | 3-7/32"       | 5/8"       | 10            | 63.38       |
| 7013466               | 60°   | 1-1/2"   | 1/2"          | 3-3/8"        | 5/8"       | 10            | 82.43       |
| 7013467               | 60°   | 1-7/8"   | 5/8"          | 3-25/32"      | 3/4"       | 14            | 95.55       |
| 7013468               | 60°   | 2-1/4"   | 3/4"          | 4-5/32"       | 7/8"       | 16            | 140.31      |
| 7013469               | 90°   | 3/4"     | 1/4"          | 2-7/16"       | 3/8"       | 10            | 30.26       |
| 7013470               | 90°   | 1"       | 3/8"          | 2-29/32"      | 1/2"       | 10            | 47.14       |
| 7013471               | 90°   | 1-3/8"   | 1/2"          | 3-9/32"       | 5/8"       | 12            | 63.38       |
| 7013472               | 90°   | 1-1/2"   | 9/16"         | 3-7/16"       | 5/8"       | 12            | 82.43       |
| 7013473               | 90°   | 1-7/8"   | 5/8"          | 3-25/32"      | 3/4"       | 14            | 95.55       |
| 7013474               | 90°   | 2-1/4"   | 3/4"          | 4-5/32"       | 7/8"       | 16            | 140.31      |
| <b>Carbide Tipped</b> |       |          |               |               |            |               |             |
| 7013475               | 60°   | 3/4"     | 3/16"         | 2-3/8"        | 3/8"       | 6             | \$103.01    |
| 7013476               | 60°   | 1"       | 5/16"         | 2-27/32"      | 1/2"       | 6             | 112.06      |
| 7013477               | 60°   | 1-3/8"   | 7/16"         | 3-7/32"       | 5/8"       | 6             | 122.59      |
| 7013478               | 60°   | 1-1/2"   | 1/2"          | 3-3/8"        | 5/8"       | 6             | 135.97      |
| 7013479               | 60°   | 1-7/8"   | 5/8"          | 3-25/32"      | 3/4"       | 6             | 221.26      |
| 7013480               | 60°   | 2-1/4"   | 3/4"          | 4-5/32"       | 7/8"       | 6             | 314.80      |
| 7013481               | 90°   | 3/4"     | 1/4"          | 2-3/8"        | 3/8"       | 6             | 103.01      |
| 7013482               | 90°   | 1"       | 3/8"          | 2-29/32"      | 1/2"       | 6             | 112.06      |
| 7013483               | 90°   | 1-3/8"   | 1/2"          | 3-9/32"       | 5/8"       | 6             | 122.59      |
| 7013484               | 90°   | 1-1/2"   | 9/16"         | 3-7/16"       | 5/8"       | 6             | 135.97      |
| 7013485               | 90°   | 1-7/8"   | 5/8"          | 3-25/32"      | 3/4"       | 6             | 221.26      |
| 7013486               | 90°   | 2-1/4"   | 3/4"          | 4-5/32"       | 7/8"       | 6             | 314.80      |

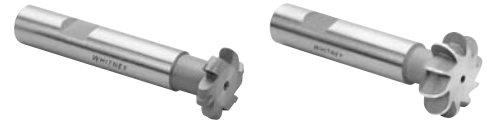
## Profile Ground Radius

Concave



| Part No. | Cut Dia. | Cutting Width | Overall Lgth. | Shank Dia. | No. of Flutes | Radius | Price /Each |
|----------|----------|---------------|---------------|------------|---------------|--------|-------------|
| 7013502  | 1-1/2"   | 1/2"          | 4"            | 3/4"       | 6             | 1/4"   | \$233.17    |
| 7013503  | 3/4"     | 3/8"          | 3"            | 1/2"       | 8             | 1/32"  | 64.70       |
| 7013504  | 3/4"     | 3/8"          | 3"            | 1/2"       | 8             | 1/16"  | 64.70       |
| 7013505  | 7/8"     | 1/2"          | 3"            | 1/2"       | 8             | 3/32"  | 69.05       |
| 7013506  | 1-1/4"   | 9/16"         | 3-1/2"        | 3/4"       | 8             | 1/8"   | 75.56       |
| 7013507  | 1-5/16"  | 5/8"          | 3-1/2"        | 3/4"       | 8             | 5/32"  | 85.29       |
| 7013508  | 1-3/8"   | 3/4"          | 3-1/2"        | 3/4"       | 8             | 3/16"  | 96.56       |
| 7013509  | 1-1/2"   | 1"            | 4"            | 3/4"       | 8             | 1/4"   | 103.01      |
| 7013511  | 1-7/8"   | 1-1/4"        | 4"            | 3/4"       | 8             | 3/8"   | 154.43      |
| 7013510  | 1-3/4"   | 1-1/8"        | 4"            | 3/4"       | 8             | 5/16"  | 128.67      |

Convex



| Part No.              | Cut Dia. | Cutting Width | Overall Lgth. | Shank Dia. | No. of Flutes | Radius | Price Each |
|-----------------------|----------|---------------|---------------|------------|---------------|--------|------------|
| 7013487               | 3/4"     | 1/16"         | 3"            | 1/2"       | 8             | 1/32"  | \$64.70    |
| 7013488               | 3/4"     | 1/8"          | 3"            | 1/2"       | 8             | 1/16"  | 64.70      |
| 7013489               | 7/8"     | 3/16"         | 3"            | 1/2"       | 10            | 3/32"  | 69.10      |
| 7013490               | 1-1/4"   | 1/4"          | 3-1/2"        | 3/4"       | 10            | 1/8"   | 70.95      |
| 7013491               | 1-5/16"  | 5/16"         | 3-1/2"        | 3/4"       | 10            | 5/32"  | 70.95      |
| 7013492               | 1-3/8"   | 3/8"          | 3-1/2"        | 3/4"       | 10            | 3/16"  | 83.33      |
| 7013493               | 1-1/2"   | 1/2"          | 4"            | 3/4"       | 10            | 1/4"   | 87.67      |
| 7013494               | 1-3/4"   | 5/8"          | 4"            | 3/4"       | 10            | 5/16"  | 128.67     |
| 7013495               | 1-7/8"   | 3/4"          | 4"            | 3/4"       | 10            | 3/8"   | 154.43     |
| <b>Carbide Tipped</b> |          |               |               |            |               |        |            |
| 7013496               | 3/4"     | 1/16"         | 3"            | 1/2"       | 6             | 1/32"  | \$148.46   |
| 7013497               | 3/4"     | 1/8"          | 3"            | 1/2"       | 6             | 1/16"  | 148.46     |
| 7013498               | 7/8"     | 3/16"         | 3"            | 1/2"       | 6             | 3/32"  | 162.69     |
| 7013499               | 1-1/4"   | 1/4"          | 3-1/2"        | 3/4"       | 6             | 1/8"   | 176.66     |
| 7013500               | 1-5/16"  | 5/16"         | 3-1/2"        | 3/4"       | 6             | 5/32"  | 198.03     |
| 7013501               | 1-3/8"   | 3/8"          | 3-1/2"        | 3/4"       | 6             | 3/16"  | 212.00     |

## Woodruff Keyseat Milling Cutters

Carbide Tipped

Straight Tooth



| Part No. | Width  | Diameter | Price   |
|----------|--------|----------|---------|
| 7013512  | 1/64"  | 1/4"     | \$24.50 |
| 7013513  | 1/32"  | 1/4"     | 24.50   |
| 7013514  | 3/64"  | 1/4"     | 24.50   |
| 7013515  | 1/64"  | 5/16"    | 24.50   |
| 7013516  | 1/32"  | 5/16"    | 24.50   |
| 7013517  | 3/64"  | 5/16"    | 24.50   |
| 7013518  | 1/64"  | 3/8"     | 24.50   |
| 7013519  | 1/32"  | 3/8"     | 24.50   |
| 7013520  | 3/64"  | 3/8"     | 24.50   |
| 7013521  | 1/64"  | 1/2"     | 24.50   |
| 7013522  | 0.020" | 1/2"     | 24.50   |
| 7013523  | 1/32"  | 1/2"     | 24.50   |
| 7013524  | 3/64"  | 1/2"     | 24.50   |
| 7013525  | 1/64"  | 5/8"     | 24.50   |
| 7013526  | 0.020" | 5/8"     | 24.50   |
| 7013527  | 1/32"  | 5/8"     | 24.50   |
| 7013528  | 3/64"  | 5/8"     | 24.50   |
| 7013529  | 1/16"  | 5/8"     | 24.50   |
| 7013530  | 5/64"  | 5/8"     | 24.50   |
| 7013531  | 1/32"  | 3/4"     | 26.36   |

| Part No. | Width  | Diameter | Price |
|----------|--------|----------|-------|
| 7013532  | 3/64"  | 3/4"     | 26.36 |
| 7013533  | 1/16"  | 3/4"     | 26.36 |
| 7013534  | 5/64"  | 3/4"     | 26.36 |
| 7013535  | 3/32"  | 3/4"     | 26.36 |
| 7013536  | 7/64"  | 3/4"     | 26.36 |
| 7013537  | 3/64"  | 7/8"     | 29.15 |
| 7013538  | 1/16"  | 7/8"     | 29.15 |
| 7013539  | 5/64"  | 7/8"     | 29.15 |
| 7013540  | 3/32"  | 7/8"     | 29.15 |
| 7013541  | 7/64"  | 7/8"     | 29.15 |
| 7013542  | 1/8"   | 7/8"     | 29.15 |
| 7013543  | 9/64"  | 7/8"     | 29.15 |
| 7013544  | 3/64"  | 1"       | 32.54 |
| 7013545  | 1/16"  | 1"       | 32.54 |
| 7013546  | 5/64"  | 1"       | 32.54 |
| 7013548  | 7/64"  | 1"       | 32.54 |
| 7013549  | 1/8"   | 1"       | 32.54 |
| 7013550  | 9/64"  | 1"       | 32.54 |
| 7013551  | 5/32"  | 1"       | 32.54 |
| 7013552  | 11/64" | 1"       | 32.54 |
| 7013553  | 3/64"  | 1-1/8"   | 38.78 |
| 7013554  | 1/16"  | 1-1/8"   | 38.78 |
| 7013555  | 5/64"  | 1-1/8"   | 38.78 |
| 7013556  | 3/32"  | 1-1/8"   | 38.78 |
| 7013557  | 7/64"  | 1-1/8"   | 38.78 |
| 7013558  | 1/8"   | 1-1/8"   | 38.78 |
| 7013559  | 9/64"  | 1-1/8"   | 38.78 |
| 7013560  | 5/32"  | 1-1/8"   | 38.78 |
| 7013561  | 11/64" | 1-1/8"   | 38.78 |

| Part No. | Width  | Diameter | Price |
|----------|--------|----------|-------|
| 7013562  | 3/64"  | 1-1/4"   | 41.91 |
| 7013563  | 1/16"  | 1-1/4"   | 41.91 |
| 7013564  | 5/64"  | 1-1/4"   | 41.91 |
| 7013565  | 3/32"  | 1-1/4"   | 41.91 |
| 7013566  | 7/64"  | 1-1/4"   | 41.91 |
| 7013567  | 1/8"   | 1-1/4"   | 41.91 |
| 7013568  | 9/64"  | 1-1/4"   | 41.91 |
| 7013569  | 5/32"  | 1-1/4"   | 41.91 |
| 7013570  | 11/64" | 1-1/4"   | 41.91 |
| 7013571  | 1/16"  | 1-3/8"   | 45.87 |
| 7013572  | 5/64"  | 1-3/8"   | 45.87 |
| 7013573  | 3/32"  | 1-3/8"   | 45.87 |
| 7013574  | 7/64"  | 1-3/8"   | 45.87 |
| 7013575  | 1/8"   | 1-3/8"   | 45.87 |
| 7013576  | 9/64"  | 1-3/8"   | 45.87 |
| 7013577  | 5/32"  | 1-3/8"   | 45.87 |
| 7013578  | 11/64" | 1-3/8"   | 45.87 |
| 7013579  | 3/16"  | 1-3/8"   | 45.87 |
| 7013580  | 7/32"  | 1-3/8"   | 45.87 |
| 7013581  | 1/16"  | 1-1/2"   | 48.35 |
| 7013582  | 5/64"  | 1-1/2"   | 48.35 |
| 7013583  | 3/32"  | 1-1/2"   | 48.35 |
| 7013584  | 7/64"  | 1-1/2"   | 48.35 |
| 7013585  | 1/8"   | 1-1/2"   | 48.35 |
| 7013586  | 9/64"  | 1-1/2"   | 48.35 |
| 7013587  | 5/32"  | 1-1/2"   | 48.35 |
| 7013588  | 11/64" | 1-1/2"   | 48.35 |
| 7013589  | 3/16"  | 1-1/2"   | 48.35 |
| 7013590  | 7/32"  | 1-1/2"   | 48.35 |

# MILLING CUTTERS

## Milling Cutters Cont.



### Woodruff Keyseat Milling Cutters Carbide Tipped Straight Tooth



| Part No.                    | Dia.   | Width | Neck Size | Overall Lgth. | No. of Flutes | Price /Each |
|-----------------------------|--------|-------|-----------|---------------|---------------|-------------|
| 7013591                     | 1/4"   | 1/16" | 0.105"    | 2-1/16"       | 8             | \$17.20     |
| 7013592                     | 5/16"  | 1/16" | 0.105"    | 2-1/16"       | 8             | 17.20       |
| 7013593                     | 5/16"  | 3/32" | 0.120"    | 2-3/32"       | 8             | 17.20       |
| 7013594                     | 3/8"   | 1/16" | 0.105"    | 2-1/16"       | 8             | 17.20       |
| 7013595                     | 3/8"   | 3/32" | 0.120"    | 2-3/32"       | 8             | 17.20       |
| 7013596                     | 3/8"   | 1/8"  | 0.150"    | 2-1/8"        | 8             | 17.20       |
| 7013597                     | 1/2"   | 1/16" | 0.130"    | 2-1/16"       | 10            | 17.20       |
| 7013598                     | 1/2"   | 3/32" | 0.160"    | 2-3/32"       | 10            | 17.20       |
| 7013599                     | 1/2"   | 1/8"  | 0.191"    | 2-1/8"        | 10            | 17.20       |
| 7013600                     | 5/8"   | 3/32" | 0.191"    | 2-3/32"       | 10            | 17.20       |
| 7013601                     | 5/8"   | 1/8"  | 0.223"    | 2-1/8"        | 10            | 17.20       |
| 7013602                     | 5/8"   | 5/32" | 0.252"    | 2-5/32"       | 10            | 17.20       |
| 7013603                     | 5/8"   | 3/16" | 0.279"    | 2-3/16"       | 10            | 17.20       |
| 7013604                     | 3/4"   | 1/8"  | 0.217"    | 2-1/8"        | 10            | 17.93       |
| 7013605                     | 3/4"   | 5/32" | 0.246"    | 2-5/32"       | 10            | 17.93       |
| 7013606                     | 3/4"   | 3/16" | 0.279"    | 2-3/16"       | 10            | 17.93       |
| 7013607                     | 3/4"   | 1/4"  | 0.342"    | 2-1/4"        | 10            | 17.93       |
| 7013608                     | 7/8"   | 5/32" | 0.246"    | 2-5/32"       | 12            | 20.00       |
| 7013609                     | 7/8"   | 3/16" | 0.279"    | 2-3/16"       | 12            | 20.00       |
| 7013610                     | 7/8"   | 7/32" | 0.312"    | 2-7/32"       | 12            | 20.00       |
| 7013611                     | 7/8"   | 1/4"  | 0.342"    | 2-1/4"        | 12            | 20.00       |
| 7013612                     | 1"     | 3/16" | 0.279"    | 2-3/16"       | 12            | 22.91       |
| 7013613                     | 1"     | 7/32" | 0.312"    | 2-7/32"       | 12            | 22.91       |
| 7013614                     | 1"     | 1/4"  | 0.342"    | 2-1/4"        | 12            | 22.91       |
| 7013615                     | 1"     | 5/16" | 0.401"    | 2-5/16"       | 12            | 22.91       |
| 7013616                     | 1"     | 3/8"  | 0.467"    | 2-3/8"        | 12            | 22.91       |
| 7013617                     | 1-1/8" | 3/16" | 0.312"    | 2-3/16"       | 14            | 25.18       |
| 7013618                     | 1-1/8" | 7/32" | 0.342"    | 2-7/32"       | 14            | 25.18       |
| 7013619                     | 1-1/8" | 1/4"  | 0.374"    | 2-1/4"        | 14            | 25.18       |
| 7013620                     | 1-1/8" | 5/16" | 0.435"    | 2-5/16"       | 14            | 25.18       |
| 7013621                     | 1-1/4" | 3/16" | 0.312"    | 2-3/16"       | 14            | 27.73       |
| 7013622                     | 1-1/4" | 7/32" | 0.342"    | 2-7/32"       | 14            | 27.73       |
| 7013623                     | 1-1/4" | 1/4"  | 0.374"    | 2-1/4"        | 14            | 27.73       |
| 7013624                     | 1-1/4" | 5/16" | 0.435"    | 2-5/16"       | 14            | 29.41       |
| 7013625                     | 1-1/4" | 3/8"  | 0.467"    | 2-3/8"        | 14            | 29.41       |
| 7013626                     | 1-3/8" | 1/4"  | 0.401"    | 2-1/4"        | 14            | 30.32       |
| 7013627                     | 1-3/8" | 5/16" | 0.467"    | 2-5/16"       | 14            | 32.64       |
| 7013628                     | 1-1/2" | 3/8"  | 0.467"    | 2-3/8"        | 14            | 32.64       |
| 7013629                     | 1-1/2" | 1/4"  | 0.435"    | 2-1/4"        | 14            | 32.91       |
| 7013630                     | 1-1/2" | 5/16" | 0.467"    | 2-5/16"       | 14            | 33.54       |
| 7013631                     | 1-1/2" | 3/8"  | 0.467"    | 2-3/8"        | 14            | 34.39       |
| <b>High Speed Steel/TIN</b> |        |       |           |               |               |             |
| 7013864                     | 1/4"   | 1/16" | 0.105"    | 2-1/16"       | 8             | —           |
| 7013865                     | 5/16"  | 1/16" | 0.105"    | 2-1/16"       | 8             | —           |
| 7013866                     | 5/16"  | 3/32" | 0.120"    | 2-3/32"       | 8             | —           |
| 7013867                     | 3/8"   | 1/16" | 0.105"    | 2-1/16"       | 8             | —           |
| 7013868                     | 3/8"   | 3/32" | 0.120"    | 2-3/32"       | 8             | —           |
| 7013869                     | 3/8"   | 1/8"  | 0.150"    | 2-1/8"        | 8             | —           |
| 7013870                     | 1/2"   | 1/16" | 0.130"    | 2-1/16"       | 10            | —           |
| 7013871                     | 1/2"   | 3/32" | 0.160"    | 2-3/32"       | 10            | —           |
| 7013872                     | 1/2"   | 1/8"  | 0.191"    | 2-1/8"        | 10            | —           |
| 7013873                     | 5/8"   | 3/32" | 0.191"    | 2-3/32"       | 10            | —           |
| 7013874                     | 5/8"   | 1/8"  | 0.223"    | 2-1/8"        | 10            | —           |
| 7013875                     | 5/8"   | 5/32" | 0.252"    | 2-5/32"       | 10            | —           |
| 7013876                     | 5/8"   | 3/16" | 0.279"    | 2-3/16"       | 10            | —           |
| 7013877                     | 3/4"   | 1/8"  | 0.217"    | 2-1/8"        | 10            | —           |
| 7013878                     | 3/4"   | 5/32" | 0.246"    | 2-5/32"       | 10            | —           |
| 7013879                     | 3/4"   | 3/16" | 0.279"    | 2-3/16"       | 10            | —           |
| 7013880                     | 3/4"   | 1/4"  | 0.342"    | 2-1/4"        | 10            | —           |

| Part No. | Dia.   | Width | Neck Size | Overall Lgth. | No. of Flutes | Price /Each |
|----------|--------|-------|-----------|---------------|---------------|-------------|
| 7013881  | 7/8"   | 5/32" | 0.246"    | 2-5/32"       | 12            | —           |
| 7013882  | 7/8"   | 3/16" | 0.279"    | 2-3/16"       | 12            | —           |
| 7013883  | 7/8"   | 7/32" | 0.312"    | 2-7/32"       | 12            | —           |
| 7013884  | 7/8"   | 1/4"  | 0.342"    | 2-1/4"        | 12            | —           |
| 7013885  | 1"     | 3/16" | 0.279"    | 2-3/16"       | 12            | —           |
| 7013886  | 1"     | 7/32" | 0.312"    | 2-7/32"       | 12            | —           |
| 7013887  | 1"     | 1/4"  | 0.342"    | 2-1/4"        | 12            | —           |
| 7013888  | 1"     | 5/16" | 0.401"    | 2-5/16"       | 12            | —           |
| 7013889  | 1"     | 3/8"  | 0.467"    | 2-3/8"        | 12            | —           |
| 7013890  | 1-1/8" | 3/16" | 0.312"    | 2-3/16"       | 14            | —           |
| 7013891  | 1-1/8" | 7/32" | 0.342"    | 2-7/32"       | 14            | —           |
| 7013892  | 1-1/8" | 1/4"  | 0.374"    | 2-1/4"        | 14            | —           |
| 7013893  | 1-1/8" | 5/16" | 0.435"    | 2-5/16"       | 14            | —           |
| 7013894  | 1-1/4" | 3/16" | 0.312"    | 2-3/16"       | 14            | —           |
| 7013895  | 1-1/4" | 7/32" | 0.342"    | 2-7/32"       | 14            | —           |
| 7013896  | 1-1/4" | 1/4"  | 0.374"    | 2-1/4"        | 14            | —           |
| 7013897  | 1-1/4" | 5/16" | 0.435"    | 2-5/16"       | 14            | —           |
| 7013898  | 1-1/4" | 3/8"  | 0.467"    | 2-3/8"        | 14            | —           |
| 7013899  | 1-3/8" | 1/4"  | 0.401"    | 2-1/4"        | 14            | —           |
| 7013900  | 1-3/8" | 5/16" | 0.467"    | 2-5/16"       | 14            | —           |
| 7013901  | 1-3/8" | 3/8"  | 0.467"    | 2-3/8"        | 14            | —           |
| 7013902  | 1-1/2" | 1/4"  | 0.435"    | 2-1/4"        | 14            | —           |
| 7013903  | 1-1/2" | 5/16" | 0.467"    | 2-5/16"       | 14            | —           |
| 7013904  | 1-1/2" | 3/8"  | 0.467"    | 2-3/8"        | 14            | —           |

### M4 High Speed Steel Staggered Tooth



| Part No. | Dia.   | Width | Neck Size | Overall Lgth. | No. of Flutes | Price /Each |
|----------|--------|-------|-----------|---------------|---------------|-------------|
| 7013632  | 1/4"   | 1/16" | 0.105"    | 2-1/16"       | 6             | \$20.00     |
| 7013633  | 5/16"  | 1/16" | 0.105"    | 2-1/16"       | 6             | 20.00       |
| 7013634  | 5/16"  | 3/32" | 0.120"    | 2-3/32"       | 6             | 20.00       |
| 7013635  | 3/8"   | 1/16" | 0.105"    | 2-1/16"       | 6             | 20.00       |
| 7013636  | 3/8"   | 3/32" | 0.120"    | 2-3/32"       | 6             | 20.00       |
| 7013637  | 3/8"   | 1/8"  | 0.150"    | 2-1/8"        | 6             | 20.00       |
| 7013638  | 1/2"   | 1/16" | 0.130"    | 2-1/16"       | 8             | 20.00       |
| 7013639  | 1/2"   | 3/32" | 0.160"    | 2-3/32"       | 8             | 20.00       |
| 7013640  | 1/2"   | 1/8"  | 0.191"    | 2-1/8"        | 8             | 20.00       |
| 7013641  | 5/8"   | 3/32" | 0.191"    | 2-3/32"       | 8             | 20.00       |
| 7013642  | 5/8"   | 1/8"  | 0.223"    | 2-1/8"        | 8             | 20.00       |
| 7013643  | 5/8"   | 5/32" | 0.252"    | 2-5/32"       | 8             | 20.00       |
| 7013644  | 5/8"   | 3/16" | 0.279"    | 2-3/16"       | 8             | 20.00       |
| 7013645  | 3/4"   | 1/8"  | 0.217"    | 2-1/8"        | 10            | 21.16       |
| 7013646  | 3/4"   | 5/32" | 0.246"    | 2-5/32"       | 10            | 21.16       |
| 7013647  | 3/4"   | 3/16" | 0.279"    | 2-3/16"       | 10            | 21.16       |
| 7013648  | 3/4"   | 1/4"  | 0.342"    | 2-1/4"        | 10            | 21.16       |
| 7013649  | 7/8"   | 5/32" | 0.246"    | 2-5/32"       | 10            | 23.49       |
| 7013650  | 7/8"   | 3/16" | 0.279"    | 2-3/16"       | 10            | 23.49       |
| 7013651  | 7/8"   | 7/32" | 0.312"    | 2-7/32"       | 10            | 23.49       |
| 7013652  | 7/8"   | 1/4"  | 0.342"    | 2-1/4"        | 10            | 23.49       |
| 7013653  | 1"     | 3/16" | 0.279"    | 2-3/16"       | 12            | 26.88       |
| 7013654  | 1"     | 7/32" | 0.312"    | 2-7/32"       | 12            | 26.88       |
| 7013655  | 1"     | 1/4"  | 0.342"    | 2-1/4"        | 12            | 26.88       |
| 7013656  | 1"     | 5/16" | 0.401"    | 2-5/16"       | 12            | 26.88       |
| 7013657  | 1"     | 3/8"  | 0.467"    | 2-3/8"        | 10            | 26.88       |
| 7013658  | 1-1/8" | 3/16" | 0.312"    | 2-3/16"       | 12            | 29.79       |
| 7013659  | 1-1/8" | 7/32" | 0.342"    | 2-7/32"       | 12            | 29.79       |
| 7013660  | 1-1/8" | 1/4"  | 0.374"    | 2-1/4"        | 12            | 29.79       |
| 7013661  | 1-1/8" | 5/16" | 0.435"    | 2-5/16"       | 12            | 31.69       |
| 7013662  | 1-1/4" | 3/16" | 0.312"    | 2-3/16"       | 14            | 32.64       |
| 7013663  | 1-1/4" | 7/32" | 0.342"    | 2-7/32"       | 14            | 32.64       |
| 7013664  | 1-1/4" | 1/4"  | 0.374"    | 2-1/4"        | 14            | 32.64       |
| 7013665  | 1-1/4" | 5/16" | 0.435"    | 2-5/16"       | 12            | 34.65       |
| 7013666  | 1-1/4" | 3/8"  | 0.467"    | 2-3/8"        | 12            | 34.65       |
| 7013667  | 1-3/8" | 1/4"  | 0.401"    | 2-1/4"        | 14            | 35.55       |
| 7013668  | 1-3/8" | 5/16" | 0.467"    | 2-5/16"       | 14            | 38.47       |
| 7013669  | 1-3/8" | 3/8"  | 0.467"    | 2-3/8"        | 14            | 38.47       |
| 7013670  | 1-1/2" | 1/4"  | 0.435"    | 2-1/4"        | 14            | 38.99       |
| 7013671  | 1-1/2" | 5/16" | 0.467"    | 2-5/16"       | 14            | 39.84       |
| 7013672  | 1-1/2" | 3/8"  | 0.467"    | 2-3/8"        | 14            | 40.42       |

### Keyseat Milling-Carbide Tipped Straight Tooth



| Part No. | Diameter | Width | No. of Flutes | Price /Each |
|----------|----------|-------|---------------|-------------|
| 7013673  | 1/2"     | 1/16" | 6             | \$68.88     |
| 7013674  | 1/2"     | 3/32" | 6             | 68.88       |
| 7013675  | 1/2"     | 1/8"  | 6             | 68.88       |
| 7013676  | 5/8"     | 3/32" | 6             | 71.26       |
| 7013677  | 5/8"     | 1/8"  | 6             | 71.26       |
| 7013678  | 5/8"     | 5/32" | 6             | 71.26       |
| 7013679  | 5/8"     | 3/16" | 6             | 71.26       |
| 7013680  | 3/4"     | 1/8"  | 6             | 74.44       |
| 7013681  | 3/4"     | 5/32" | 6             | 74.44       |
| 7013682  | 3/4"     | 3/16" | 6             | 74.44       |
| 7013683  | 3/4"     | 1/4"  | 6             | 74.44       |
| 7013684  | 7/8"     | 5/32" | 6             | 77.98       |
| 7013685  | 7/8"     | 3/16" | 6             | 77.98       |
| 7013686  | 7/8"     | 7/32" | 6             | 77.98       |
| 7013687  | 7/8"     | 1/4"  | 6             | 77.98       |
| 7013688  | 1"       | 3/16" | 8             | 89.62       |
| 7013689  | 1"       | 7/32" | 8             | 89.62       |
| 7013690  | 1"       | 1/4"  | 8             | 89.62       |
| 7013691  | 1"       | 5/16" | 8             | 89.62       |
| 7013692  | 1"       | 3/8"  | 8             | 89.62       |
| 7013693  | 1-1/8"   | 3/16" | 8             | 94.12       |
| 7013694  | 1-1/8"   | 7/32" | 8             | 94.12       |
| 7013695  | 1-1/8"   | 1/4"  | 8             | 94.12       |
| 7013696  | 1-1/8"   | 5/16" | 8             | 94.12       |
| 7013697  | 1-1/4"   | 3/16" | 8             | 98.88       |
| 7013698  | 1-1/4"   | 7/32" | 8             | 98.88       |
| 7013699  | 1-1/4"   | 1/4"  | 8             | 98.88       |
| 7013700  | 1-1/4"   | 5/16" | 8             | 98.88       |
| 7013701  | 1-1/4"   | 3/8"  | 8             | 98.88       |
| 7013702  | 1-3/8"   | 1/4"  | 8             | 103.75      |
| 7013703  | 1-3/8"   | 5/16" | 8             | 103.75      |
| 7013704  | 1-3/8"   | 3/8"  | 8             | 103.75      |
| 7013705  | 1-1/2"   | 1/4"  | 8             | 108.99      |
| 7013706  | 1-1/2"   | 5/16" | 8             | 108.99      |
| 7013707  | 1-1/2"   | 3/8"  | 8             | 108.99      |

### Staggered Tooth



| Part No. | Diameter | Width | No. of Flutes | Price /Each |
|----------|----------|-------|---------------|-------------|
| 7013708  | 1/2"     | 1/16" | 6             | \$80.52     |
| 7013709  | 1/2"     | 3/32" | 6             | 80.52       |
| 7013710  | 1/2"     | 1/8"  | 6             | 80.52       |
| 7013711  | 5/8"     | 3/32" | 6             | 83.44       |
| 7013712  | 5/8"     | 1/8"  | 6             | 83.44       |
| 7013713  | 5/8"     | 5/32" | 6             | 83.44       |
| 7013714  | 5/8"     | 3/16" | 6             | 83.44       |
| 7013715  | 3/4"     | 1/8"  | 6             | 87.13       |
| 7013716  | 3/4"     | 5/32" | 6             | 87.13       |
| 7013717  | 3/4"     | 3/16" | 6             | 87.13       |
| 7013718  | 3/4"     | 1/4"  | 6             | 87.13       |
| 7013719  | 7/8"     | 5/32" | 6             | 91.22       |
| 7013720  | 7/8"     | 3/16" | 6             | 91.22       |
| 7013721  | 7/8"     | 7/32" | 6             | 91.22       |
| 7013722  | 7/8"     | 1/4"  | 6             | 91.22       |
| 7013723  | 1"       | 3/16" | 8             | 104.44      |
| 7013724  | 1"       | 7/32" | 8             | 104.44      |
| 7013725  | 1"       | 1/4"  |               |             |

# MILLING CUTTERS & duMONT BROACHES

## Milling Cutters Cont.



### Staggered Tooth Cont.

| Part No. | Broach Size | Broach Style | Bushing Dia. | Price /Ea |
|----------|-------------|--------------|--------------|-----------|
| 7013728  | 1-1/8"      | 3/16"        | 8            | 109.57    |
| 7013729  | 1-1/8"      | 7/32"        | 8            | 109.57    |
| 7013730  | 1-1/8"      | 1/4"         | 8            | 109.57    |
| 7013731  | 1-1/8"      | 5/16"        | 8            | 109.57    |
| 7013732  | 1-1/4"      | 3/16"        | 8            | 115.82    |
| 7013733  | 1-1/4"      | 7/32"        | 8            | 115.82    |
| 7013734  | 1-1/4"      | 1/4"         | 8            | 115.82    |
| 7013735  | 1-1/4"      | 5/16"        | 8            | 115.82    |
| 7013736  | 1-1/4"      | 3/8"         | 8            | 115.82    |
| 7013737  | 1-3/8"      | 1/4"         | 8            | 121.63    |
| 7013738  | 1-3/8"      | 5/16"        | 8            | 121.63    |
| 7013739  | 1-3/8"      | 3/8"         | 8            | 121.63    |
| 7013740  | 1-1/2"      | 1/4"         | 8            | 127.46    |
| 7013741  | 1-1/2"      | 5/16"        | 8            | 127.46    |
| 7013742  | 1-1/2"      | 3/8"         | 8            | 127.46    |

## duMont Broaches



### Keyway Broach Sets 1/16" through 3/8" sizes

The most common combinations for small keyways and bores. 3 broaches and 5 bushings = 15 keyway combinations.

| Part No. | Broach Size | Broach Style | Bushing Dia.              | Price /Ea |
|----------|-------------|--------------|---------------------------|-----------|
| 3121042  | 1/16, 3/32  | A            | 1/4, 5/16, 3/8, 7/16, 1/2 | \$—       |

Our best selling broach set. 4 broaches and 9 bushings = 18 keyway combinations.

| Part No. | Broach Size         | Broach Style | Bushing Dia.                                      | Price /Ea |
|----------|---------------------|--------------|---|-----------|
| 3121043  | 1/8, 3/16, 1/4, 3/8 | B, C         | 1/2, 5/8, 3/4, 7/8, 1, 1-1/8, 1-1/4, 1-3/8, 1-1/2 | \$—       |

Same as No. 10 Set, but for sixteenth-sized bores. 4 broaches and 9 bushings = 18 keyway combinations.

| Part No. | Broach Size         | Broach Style | Bushing Dia.  | Price /Ea |
|----------|---------------------|--------------|---|-----------|
| 3121044  | 1/8, 3/16, 1/4, 3/8 | B, C         | 9/16, 11/16, 13/16, 15/16, 1-1/16, 1-3/16, 1-5/16, 1-7/16, 1-9/16 | \$—       |

Combines 10 and 10A sets. Features all bore sizes in 1/16 inch increments for keyways 1/8 to 3/8 inches. 4 broaches and 18 bushings = 36 keyway combinations.

| Part No. | Broach Size         | Broach Style | Bushing Dia.   | Price /Ea |
|----------|---------------------|--------------|--|-----------|
| 3121045  | 1/8, 3/16, 1/4, 3/8 | B, C         | 1/2, 9/16, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16, 1, 1-1/16, 1-1/8, 1-3/16, 1-1/4, 1-5/16, 1-3/8, 1-7/16, 1-1/2, 1-9/16 | \$—       |

### Keyway Broach Sets 5/16" - 3/4" sizes

The most common keyway combinations for medium-sized keyways and bores. 4 broaches and 8 bushings = 32 keyway combinations.

| Part No. | Broach Size          | Broach Style | Bushing Dia.                                       | Price /Ea |
|----------|----------------------|--------------|--|-----------|
| 3121046  | 5/16, 3/8, 7/16, 1/2 | D            | 1-1/2, 1-5/8, 1-3/4, 1-7/8, 2, 2-1/8, 2-1/4, 2-1/2 | \$—       |

Same as No. 40A, but for sixteenth-sized bores. 4 broaches and 8 bushings = 32 keyway combinations.

| Part No. | Broach Size          | Broach Style | Bushing Dia.   | Price /Ea |
|----------|----------------------|--------------|--|-----------|
| 3121047  | 5/16, 3/8, 7/16, 1/2 | D            | 1-7/16, 1-9/16, 1-11/16, 1-13/16, 1-15/16, 2-3/16, 2-7/16, 2-15/16 | \$—       |

| Part No. | Broach Size | Broach Style | Bushing Dia.                         | Price /Ea |
|----------|-------------|--------------|--------------------------------------|-----------|
| 3121048  | 5/8, 3/4    | E            | 2-3/8, 2-1/2, 2-5/8, 2-3/4, 2-7/8, 3 | \$—       |

Same as No. 401/2A, but for sixteenth-sized bores. 2 broaches and 6 bushings = 12 keyway combinations.

| Part No. | Broach Size | Broach Style | Bushing Dia.                                      | Price /Ea |
|----------|-------------|--------------|---|-----------|
| 3121049  | 5/8, 3/4    | E            | 2-5/16, 2-7/16, 2-9/16, 2-11/16, 2-13/16, 2-15/16 | \$—       |

### Keyway Broaches 1/16" through 1-1/2" sizes

All required shims are provided. For extra or replacement shims see the table.

TiN, TiCN or TiAlN coatings available.

| Part No. | Broach Size | Broach Length | Tooth Pitch | Tooth Teeth | No. of Weight | Price /Ea |
|----------|-------------|---------------|-------------|-------------|---------------|-----------|
| 3121062  | 1/16-A      | 5"            | 3/16        | 18          | 0.1           | \$—       |
| 3121063  | 3/32-A      | 5"            | 3/16        | 18          | 0.1           | —         |
| 3121064  | 1/8-A       | 5"            | 3/16        | 18          | 0.1           | —         |
| 3121065  | 3/32-B      | 6-3/4"        | 9/32        | 16          | 0.15          | —         |
| 3121066  | 1/8-B       | 6-3/4"        | 9/32        | 16          | 0.15          | —         |
| 3121067  | 5/32-B      | 6-3/4"        | 9/32        | 16          | 0.15          | —         |
| 3121068  | 3/16-B      | 6-3/4"        | 9/32        | 16          | 0.2           | —         |
| 3121069  | 3/16-C      | 11-3/4"       | 3/8         | 22          | 0.75          | —         |
| 3121070  | 1/4-C       | 11-3/4"       | 3/8         | 22          | 0.75          | —         |
| 3121071  | 5/16-C      | 11-3/4"       | 3/8         | 22          | 0.75          | —         |
| 3121072  | 3/8-C       | 11-3/4"       | 3/8         | 22          | 0.75          | —         |
| 3121073  | 5/8-D       | 13-7/8"       | 5/8         | 17          | 2             | —         |
| 3121074  | 3/8-D       | 13-7/8"       | 5/8         | 17          | 2             | —         |
| 3121075  | 7/16-D      | 13-7/8"       | 5/8         | 17          | 2             | —         |
| 3121076  | 1/2-D       | 13-7/8"       | 5/8         | 17          | 2             | —         |
| 3121077  | 5/8-E       | 15-1/2"       | 5/8         | 20          | 3             | —         |
| 3121078  | 3/4-E       | 15-1/2"       | 5/8         | 20          | 3.5           | —         |
| 3121079  | 7/8-F       | 20-1/4"       | 5/8         | 26          | 7.5           | —         |
| 3121080  | 1F          | 20-1/4"       | 5/8         | 26          | 8             | —         |

## Keyway Bushings - Styles A-F

duMONT Keyway Bushings enable the operator to use individual keyway broaches in a variety of bore sizes. Both bushings and broaches are designated by a letter which signifies the width of the keyway broach and bushing opening. For proper fit, use bushings with the same letter designation as the broach being used—i.e. A Bushings with A Broaches, B Bushings with B Broaches, etc. E series bushings above 3" diameter available from stock or short delivery. F series bushings available from stock or short delivery.



| Part No. | Style | Bushing Length | Bushing Dia. | Price /Ea |
|----------|-------|----------------|--------------|-----------|
| 3121118  | A     | 1-1/8          | 1/4          | \$—       |
| 3121119  | A     | 1-1/8          | 5/16         | —         |
| 3121120  | A     | 1-1/8          | 3/8          | —         |
| 3121121  | A     | 1-1/8          | 7/16         | —         |
| 3121122  | A     | 1-1/8          | 1/2          | —         |
| 3121123  | B     | 1-11/16        | 1/2          | \$—       |
| 3121124  | B     | 1-11/16        | 9/16         | —         |
| 3121125  | B     | 1-11/16        | 5/8          | —         |
| 3121126  | B     | 1-11/16        | 11/16        | —         |
| 3121127  | B     | 1-11/16        | 3/4          | —         |
| 3121128  | B     | 1-11/16        | 13/16        | —         |
| 3121129  | B     | 1-11/16        | 7/8          | —         |
| 3121130  | C     | 2-1/2          | 3/4          | \$—       |
| 3121131  | C     | 2-1/2          | 13/16        | —         |
| 3121132  | C     | 2-1/2          | 7/8          | —         |
| 3121133  | C     | 2-1/2          | 15/16        | —         |
| 3121134  | C     | 2-1/2          | 1            | —         |
| 3121135  | C     | 2-1/2          | 1-1/16       | —         |
| 3121136  | C     | 2-1/2          | 1-1/8        | —         |
| 3121137  | C     | 2-1/2          | 1-3/16       | —         |
| 3121138  | C     | 2-1/2          | 1-1/4        | —         |
| 3121139  | C     | 2-1/2          | 1-5/16       | —         |
| 3121140  | C     | 2-1/2          | 1-3/8        | —         |
| 3121141  | C     | 2-1/2          | 1-7/16       | —         |
| 3121142  | C     | 2-1/2          | 1-1/2        | —         |
| 3121143  | C     | 2-1/2          | 1-9/16       | —         |
| 3121144  | D     | 4              | 1-7/16       | \$—       |
| 3121145  | D     | 4              | 1-1/2        | —         |
| 3121146  | D     | 4              | 1-9/16       | —         |
| 3121147  | D     | 4              | 1-5/8        | —         |
| 3121148  | D     | 4              | 1-11/16      | —         |
| 3121149  | D     | 4              | 1-3/4        | —         |
| 3121150  | D     | 5              | 1-13/16      | —         |
| 3121151  | D     | 5              | 1-7/8        | —         |
| 3121152  | D     | 5              | 1-15/16      | —         |
| 3121153  | D     | 5              | 2            | —         |
| 3121154  | D     | 5              | 2-1/16       | —         |
| 3121155  | D     | 5              | 2-1/8        | —         |
| 3121156  | D     | 5              | 2-3/16       | —         |
| 3121157  | D     | 5              | 2-1/4        | —         |
| 3121158  | D     | 5              | 2-5/16       | —         |
| 3121159  | D     | 6              | 2-3/8        | —         |
| 3121160  | D     | 6              | 2-7/16       | —         |
| 3121161  | D     | 6              | 2-1/2        | —         |
| 3121162  | D     | 6              | 2-9/16       | —         |
| 3121163  | D     | 6              | 2-5/8        | —         |
| 3121164  | D     | 6              | 2-11/16      | —         |
| 3121165  | D     | 6              | 2-3/4        | —         |
| 3121166  | D     | 6              | 2-13/16      | —         |
| 3121167  | D     | 6              | 2-7/8        | —         |
| 3121168  | D     | 6              | 2-15/16      | —         |
| 3121169  | D     | 6              | 3            | —         |
| 3121170  | E     | 6              | 2-5/16       | \$—       |
| 3121171  | E     | 6              | 2-3/8        | —         |
| 3121172  | E     | 6              | 2-7/16       | —         |
| 3121173  | E     | 6              | 2-1/2        | —         |
| 3121174  | E     | 6              | 2-9/16       | —         |
| 3121175  | E     | 6              | 2-5/8        | —         |
| 3121176  | E     | 6              | 2-11/16      | —         |
| 3121177  | E     | 6              | 2-3/4        | —         |
| 3121178  | E     | 6              | 2-13/16      | —         |
| 3121179  | E     | 6              | 2-7/8        | —         |
| 3121180  | E     | 6              | 2-15/16      | —         |
| 3121181  | E     | 6              | 3            | —         |

Keyway Broaches & Bushings



# DUMONT BROACHES, SLITTING SAWS

## duMont Broaches Cont.

### Keyseating Broaches 1/16" to 1" Type AF

Minute Man® Keyseating Broaches feature superior tooth design and are ground to precision keyway tolerances. Sizes for cutting the most common keyway widths are available.



| Part No. | Broach Size | Broach Length | Tooth Pitch | Weight | Price /Ea |
|----------|-------------|---------------|-------------|--------|-----------|
| 3121307  | 1/16        | 16"           | 3/8         | 0.25   | \$162.00  |
| 3121308  | 3/32        | 16"           | 3/8         | 0.35   | 162.00    |
| 3121309  | 1/8         | 16"           | 3/8         | 0.35   | 162.00    |
| 3121310  | 5/32        | 16"           | 3/8         | 0.35   | 162.00    |
| 3121311  | 3/16        | 16"           | 3/8         | 0.45   | 170.40    |
| 3121312  | 1/4         | 16"           | 3/8         | 1      | 182.40    |
| 3121313  | 1/4         | 20"           | 3/8         | 1.2    | 199.20    |
| 3121314  | 5/16        | 16"           | 17/32       | 13     | 189.60    |
| 3121315  | 5/16        | 20"           | 17/32       | 1.6    | 211.20    |
| 3121316  | 3/8         | 16"           | 17/32       | 1.5    | 199.20    |
| 3121317  | 3/8         | 20"           | 17/32       | 4      | 231.60    |
| 3121318  | 7/16        | 20"           | 17/32       | 4      | 242.40    |
| 3121319  | 1/2         | 20"           | 17/32       | 5      | 252.00    |
| 3121320  | 9/16        | 20"           | 17/32       | 5      | 271.20    |
| 3121321  | 5/8         | 20"           | 17/32       | 5      | 278.40    |
| 3121322  | 3/4         | 20"           | 17/32       | 6      | 302.40    |
| 3121323  | 7/8         | 20"           | 17/32       | 7      | 357.60    |

## Square Push Broaches 1/8" to 1" square

### Stock Square Broaches

| Part No. | Square Size | Broach Length | Tooth Pitch | Weight | Price /Ea |
|----------|-------------|---------------|-------------|--------|-----------|
| 3121351  | 1/8         | 4-1/8"        | 1/8         | 0.1    | 96.60     |
| 3121352  | 5/32        | 5-1/8"        | 5/32        | 0.1    | 108.60    |
| 3121353  | 3/16        | 5-9/16"       | 5/32        | 0.1    | 96.60     |
| 3121354  | 7/32        | 6-3/8"        | 3/16        | 0.1    | 108.60    |
| 3121355  | 1/4         | 6-1/2"        | 3/16        | 0.15   | 96.60     |
| 3121356  | 9/32        | 7-3/4"        | 7/32        | 0.15   | 121.20    |
| 3121357  | 5/16        | 7-7/8"        | 7/32        | 0.2    | 99.00     |
| 3121358  | 11/32       | 9-3/8"        | 1/4         | 0.2    | 157.20    |
| 3121359  | 3/8         | 9-3/8"        | 1/4         | 0.35   | 126.00    |
| 3121360  | 13/32       | 10-5/8"       | 9/32        | 0.45   | 186.00    |
| 3121361  | 7/16        | 10-7/8"       | 5/16        | 0.35   | 160.20    |
| 3121362  | 15/32       | 12"           | 5/16        | 0.45   | 244.80    |
| 3121363  | 1/2         | 12"           | 5/16        | 1      | 186.00    |
| 3121364  | 9/16        | 14-3/4"       | 3/8         | 1.1    | 234.00    |
| 3121365  | 5/8         | 16-5/16"      | 7/16        | 1.5    | 278.40    |
| 3121366  | 11/16       | 17-3/4"       | 7/16        | 2      | 322.80    |
| 3121367  | 3/4         | 17-3/4"       | 7/16        | 2.4    | 376.80    |
| 3121368  | 7/8         | 22-3/4"       | 7/16        | 4.2    | 540.00    |
| 3121369  | 1           | 24-1/8"       | 7/16        | 6      | 568.80    |

## Production Keyway Broaches Push-Type Keyway Broaches

Production Keyway Broaches are designed for large production runs of identical keyways with identical bores. Cuts keyways to depth in one pass, no shims or bushings required. **Metric sizes available upon request.**

| Part No. | Keyway Width | Body Dia. | Broach Length | Tooth Pitch | Weight | Price /Ea |
|----------|--------------|-----------|---------------|-------------|--------|-----------|
| 3121297  | 1/16"        | 3/16"     | 5-5/8"        | 3/16        | 0.1    | 198.00    |
| 3121298  | 1/16"        | 1/4"      | 6-3/16"       | 3/16        | 0.1    | 198.00    |
| 3121299  | 1/8"         | 3/8"      | 8-1/2"        | 1/4         | 0.2    | 206.40    |
| 3121300  | 1/8"         | 1/2"      | 11-3/4"       | 3/8         | 0.45   | 222.00    |
| 3121301  | 1/8"         | 9/16"     | 11-3/4"       | 3/8         | 0.6    | 232.80    |
| 3121302  | 1/8"         | 5/8"      | 11-3/4"       | 3/8         | 1      | 247.20    |
| 3121303  | 3/16"        | 5/8"      | 14-3/4"       | 3/8         | 1.3    | 254.40    |
| 3121304  | 3/16"        | 3/4"      | 14-3/4"       | 3/8         | 2      | 270.00    |
| 3121305  | 3/16"        | 7/8"      | 14-3/4"       | 3/8         | 2.6    | 319.20    |
| 3121306  | 1/4"         | 1"        | 18"           | 3/8         | 4.1    | 414.00    |

Slitting Saws,

## Slitting Saws



### Niagara Cutter

#### Concave HSS Slitting Saw

##### "MC" Style

- Designed for Slitting or Cutoff Operations
- O.D. Cutting Only, No Side Teeth
- Fully Ground Surfaces
- Square Cornered with Side Concavity



| Part No. | Cut Dia. | Arbor Hole | No. of Teeth | Coating  | Price /Each |
|----------|----------|------------|--------------|----------|-------------|
| 7013195  | 3        | 1          | 36           | Uncoated | \$29.87     |
| 7013196  | 3        | 1          | 36           | Uncoated | 29.87       |
| 7013197  | 3        | 1          | 36           | Uncoated | 30.58       |
| 7013198  | 3        | 1          | 36           | Uncoated | 30.58       |
| 7013199  | 3        | 1          | 36           | Uncoated | 31.52       |
| 7013200  | 4        | 1          | 40           | Uncoated | 41.86       |
| 7013201  | 4        | 1          | 40           | Uncoated | 42.11       |
| 7013202  | 4        | 1          | 40           | Uncoated | 44.57       |
| 7013203  | 5        | 1          | 44           | Uncoated | 57.74       |
| 7013204  | 5        | 1          | 44           | Uncoated | 61.62       |
| 7013205  | 6        | 1          | 48           | Uncoated | 69.86       |

## Staggered Tooth HSS Slitting Saw

### "MS" Style

- Excellent for Deep Slotting
- Free Cutting
- Recommended where chip packing is a problem



| Part No. | Cut Dia. | Arbor Hole | No. of Teeth | Coating  | Price /Each |
|----------|----------|------------|--------------|----------|-------------|
| 7013206  | 3        | 1          | 28           | Uncoated | \$77.39     |
| 7013207  | 3        | 1          | 28           | Uncoated | 79.15       |
| 7013208  | 3        | 1          | 28           | Uncoated | 80.56       |
| 7013209  | 4        | 1          | 32           | Uncoated | 102.90      |
| 7013210  | 4        | 1          | 32           | Uncoated | 103.02      |
| 7013211  | 4        | 1          | 32           | Uncoated | 110.54      |
| 7013212  | 4        | 1          | 32           | Uncoated | 84.67       |
| 7013213  | 4        | 1          | 32           | Uncoated | 124.77      |
| 7013214  | 5        | 1          | 36           | Uncoated | 150.30      |
| 7013215  | 6        | 1          | 40           | Uncoated | 185.45      |
| 7013216  | 6        | 1          | 40           | Uncoated | 143.47      |
| 7013217  | 6        | 1-1/4      | 40           | Uncoated | 228.85      |
| 7013218  | 8        | 1-1/4      | 48           | Uncoated | 313.40      |

## Straight Side Tooth HSS Slitting Saw

### "MT" Style

- Excellent for Slotting and Plunging
- Fully Ground Surfaces
- Recommended for Thin Walled Parts



| Part No. | Cut Dia. | Arbor Hole | No. of Teeth | Coating  | Price /Each |
|----------|----------|------------|--------------|----------|-------------|
| 7013219  | 2.5      | 7/8        | 28           | Uncoated | \$47.40     |
| 7013220  | 2.5      | 7/8        | 28           | Uncoated | 47.40       |
| 7013221  | 2.5      | 7/8        | 28           | Uncoated | 47.40       |
| 7013222  | 3        | 1          | 32           | Uncoated | 56.92       |
| 7013223  | 3        | 1          | 32           | Uncoated | 56.92       |
| 7013224  | 3        | 1          | 32           | Uncoated | 56.92       |
| 7013225  | 3        | 1          | 32           | Uncoated | 56.92       |
| 7013226  | 3        | 1          | 32           | Uncoated | 83.02       |
| 7013227  | 3        | 1          | 32           | Uncoated | 83.73       |
| 7013228  | 4        | 1          | 36           | Uncoated | 74.45       |
| 7013229  | 4        | 1          | 36           | Uncoated | 74.45       |
| 7013230  | 4        | 1          | 36           | Uncoated | 74.91       |
| 7013231  | 4        | 1          | 36           | Uncoated | 77.73       |
| 7013232  | 4        | 1          | 36           | Uncoated | 80.56       |
| 7013233  | 4        | 1          | 36           | Uncoated | 110.31      |
| 7013234  | 5        | 1          | 40           | Uncoated | 95.03       |
| 7013235  | 5        | 1          | 40           | Uncoated | 97.97       |
| 7013236  | 5        | 1          | 40           | Uncoated | 100.66      |
| 7013237  | 5        | 1          | 40           | Uncoated | 143.47      |
| 7013238  | 6        | 1          | 42           | Uncoated | 115.25      |
| 7013239  | 6        | 1          | 42           | Uncoated | 122.42      |
| 7013240  | 6        | 1          | 42           | Uncoated | 128.07      |
| 7013241  | 6        | 1-1/4      | 42           | Uncoated | 128.07      |
| 7013242  | 6        | 1          | 42           | Uncoated | 140.42      |
| 7013243  | 8        | 1-1/4      | 48           | Uncoated | 251.66      |



## Slitting and Slotting Saw Arbors

### New Rigid and Precision Design

- Spring loaded mechanism accepts saw blades with hole diameter from 1/2" to 1"
- Rust resistant black oxide finish



| Part No. | Arbor        | Hole Dia.             | Shank                | Price /Each |
|----------|--------------|-----------------------|----------------------|-------------|
| 7001159  | Slitting Saw | 1/2, 5/8, 3/4, 7/8, 1 | 1/2" Weldon          | \$16.82     |
| 7001160  | Slitting Saw | 1/2, 5/8, 3/4, 7/8, 1 | R8                   | 24.72:      |
| 7001161  | Slitting Saw | 1/2, 5/8, 3/4, 7/8, 1 | Arbor Screw 5-16"-24 | 3.63:       |
| 7001162  | Slitting Saw | 3/8                   | 1/2"                 | 11.91:      |
| 7001163  | Slitting Saw | 3/8                   | Arbor Screw M5X0.8   | 3.63:       |

## Hardened and Precisely Ground

- Extended Length
- Ground for precision within 0.002" or 0.0004" T.I.R.
- Super low profile cups allows cutter to get lower and closer to working area



| Part No. | Arbor                                  | Hole Dia. | Shank         | Tol.   | Price /Each |
|----------|--|-----------|---------------|--------|-------------|
| 7001164  | Slitting Saw-Extended Length           | 1/2       | 0.25          | 0.002  | \$12.39:    |
| 7001165  | Slitting Saw-Extended Length           | 1/2       | 0.375         | 0.002  | 15.15:      |
| 7001166  | Slitting Saw-Extended Length           | 1/2       | 0.5           | 0.002  | 16.50:      |
| 7001167  | Slitting Saw-Extended Length, 3 pc set | 1/2       | 1/4, 3/8, 1/2 | 0.002  | 47.57:      |
| 7001168  | Slitting Saw-Extended Length           | 3/4       | 0.625         | 0.002  | 17.85:      |
| 7001169  | Slitting Saw-Extended Length           | 3/4       | 1             | 0.002  | 19.26:      |
| 7001170  | Slitting Saw-Extended Length           | 3/4       | 1-1/4         | 0.002  | 21.95:      |
| 7001171  | Slitting Saw-Extended Length           | 3/4       | 5/8, 1, 1-1/4 | 0.002  | 62.85:      |
| 7001172  | Slitting Saw-Extended Length           | 1/2       | 0.25          | 0.0004 | 34.15:      |
| 7001173  | Slitting Saw-Extended Length           | 1/2       | 0.375         | 0.0004 | 38.45:      |
| 7001174  | Slitting Saw-Extended Length           | 1/2       | 0.5           | 0.0004 | 40.90:      |
| 7001175  | Slitting Saw-Extended Length           | 1/2       | 1/4, 3/8, 1/2 | 0.0004 | 117.49:     |
| 7001176  | Slitting Saw-Extended Length           | 3/4       | 0.625         | 0.0004 | 45.13:      |
| 7001177  | Slitting Saw-Extended Length           | 3/4       | 1             | 0.0004 | 51.88:      |
| 7001178  | Slitting Saw-Extended Length           | 3/4       | 37987         | 0.0004 | 54.89:      |
| 7001179  | Slitting Saw-Extended Length           | 3/4       | 5/8, 1, 1-1/4 | 0.0004 | 152.15:     |

## Dorian Tool



### Small Diameter Diamond Cutting Knurling Tool



| Part No. | Model No.   | Shank  | Tool Lgth. | Price /Each |
|----------|-------------|--------|------------|-------------|
| 3114138  | CNC-75-1-2  | 3/4"   | 5-1/2"     | \$755.57    |
| 3114139  | CNC-100-1-2 | 1"     | 6-3/4"     | 825.53      |
| 3114140  | CNC-125-1-2 | 1-1/4" | 7-1/4"     | 877.68      |

\*Supplied with 1 set of Straight knurl wheels, 30 TPI for diamond pattern.

### Heavy Duty Diamond Cutting Knurling Tool



| Part No. | Model No.   | Shank  | Tool Lgth. | Price /Each |
|----------|-------------|--------|------------|-------------|
| 3114141  | CNC-75-2-R  | 3/4"   | 5-1/2"     | \$887.86    |
| 3114142  | CNC-100-2-R | 1"     | 6-3/4"     | 941.28      |
| 3114143  | CNC-125-2-R | 1-1/4" | 7-1/4"     | 1004.88     |

\*Supplied with 1 set of straight knurl wheels, 25 TPI for diamond pattern.

### 3SHKT Three Swivel Head Knurling Tool

- Precision square shank with preset center height.
- Three sets of twin knurl wheels for Straight and Diamond pattern.
- Knurl wheels are mounted between the thrust washers to ensure a smooth and even rotation of the knurls while knurling is performed.
- With three pairs of knurl wheels and a swivelling head, changing knurl wheels requires less time.
- Can be reversed for right or left hand operation.
- Supplied with three pairs of diagonal knurls for knurling Fine, Medium, and Coarse pitch diamond patterns.

**Recommended Use:** For best results, use beveled knurl wheels. In Feed the knurling tool into the blank until the right pattern is generated, then End Feed.



| Part No. | Model No.   | Shank  | Tool Lgth. | Price /Each |
|----------|-------------|--------|------------|-------------|
| 3114153  | 3SHKT-50-D  | 1/2"   | 4-1/8"     | \$330.72    |
| 3114154  | 3SHKT-75-M  | 3/4"   | 5-1/2"     | 375.24      |
| 3114155  | 3SHKT-100-M | 1"     | 6-1/4"     | 419.76      |
| 3114156  | 3SHKT-125-M | 1-1/4" | 7-3/8"     | 470.64      |

### CNC Modular Knurling Tool #6 Shoulder Forming Tool



| Part No. | Model No.   | Shank  | Tool Lgth. | Price /Each |
|----------|-------------|--------|------------|-------------|
| 3114147  | CNC-75-6-4  | 3/4"   | 5-1/2"     | \$789.60    |
| 3114148  | CNC-100-6-4 | 1"     | 6-3/4"     | 828.00      |
| 3114149  | CNC-125-6-4 | 1-1/4" | 7-1/4"     | 876.00      |

### Extra Heavy Duty Diamond Cutting Knurling Tool



| Part No. | Model No.   | Shank  | Tool Lgth. | Price /Each |
|----------|-------------|--------|------------|-------------|
| 3114144  | CNC-75-3-M  | 3/4"   | 5-5/8"     | \$836.98    |
| 3114145  | CNC-100-3-M | 1"     | 6-7/8"     | 877.68      |
| 3114146  | CNC-125-3-M | 1-1/4" | 7-3/8"     | 928.56      |

\*Supplied with 1 set of straight knurl wheels, 25 TPI for diamond pattern.

### FKT Fixed Knurling Tool

- Precision square shank with preset center height.
- Twin knurl wheels for Straight and Diamond pattern.
- Knurl wheels are mounted between the thrust washers to ensure a smooth and even rotation of the knurls while knurling is performed.



**Recommended Use:** For best results, use beveled knurl wheels. In Feed the knurling tool into the blank until the right pattern is generated, then End Feed.

| Part No. | Model No. | Shank | Tool Lgth. | Price /Each |
|----------|-----------|-------|------------|-------------|
| 3114157  | FKT-50-D  | 1/2"  | 3-5/8"     | \$99.00     |
| 3114158  | FKT-75-M  | 3/4"  | 4-1/2"     | 149.59      |
| 3114159  | FKT-100-M | 1"    | 5-1/4"     | 137.38      |

\*Supplied with 1 set of 30 TPI Diagonal Knurl Wheels for Diamond Pattern.

\*\*Supplied with 1 set of 25 TPI Diagonal Knurl Wheels for Diamond Pattern.

### SFKT Shoulder Fixed Knurling Tool

- Precision square shank with preset center height.
- Designed to knurl against a square shoulder.
- Twin knurl wheels for Straight and Diamond pattern.
- Knurl wheels are mounted between the thrust washers to ensure a smooth and even rotation of the knurls while knurling is performed.
- Can be reversed for right or left hand operation.
- Supplied with SW series knurl wheels.

**Recommended Use:** For best results, use beveled knurl wheels. In Feed the knurling tool into the blank until the right pattern is generated, then End Feed.



| Part No. | Model No.  | Shank | Tool Lgth. | Price /Each |
|----------|------------|-------|------------|-------------|
| 3114160  | SFKT-50-2  | 1/2"  | 3-3/8"     | \$235.32    |
| 3114161  | SFKT-75-4  | 3/4"  | 4-3/8"     | 248.04      |
| 3114162  | SFKT-100-4 | 1"    | 5-1/8"     | 298.92      |

\*Supplied with 1 set of 30 TPI Diagonal Knurl Wheels for Diamond Pattern.

\*\*Supplied with 1 set of 25 TPI Diagonal Knurl Wheels for Diamond Pattern.

### CNC100 7R CNC Knurling Tool



| Part No. | Model No.   | Shank  | Tool Lgth. | Price /Each |
|----------|-------------|--------|------------|-------------|
| 3114150  | CNC-75-7-R  | 3/4"   | 5-3/4"     | \$852.24    |
| 3114151  | CNC-100-7-R | 1"     | 7"         | 896.76      |
| 3114152  | CNC-125-7-R | 1-1/4" | 7-1/2"     | 954.00      |

\*Supplied with 1 set of diagonal knurl wheels, 30 TPI for diamond pattern.

### SCKN Self-Centering Knurling Tool for C.N.C Lathe

- Specifically designed for CNC lathe.
- Precision square shank with preset center height.
- Twin knurl wheels for Straight and Diamond pattern.
- Knurl wheels are mounted between the thrust washers to ensure a smooth and even rotation of the knurls while knurling is performed.
- Self-centering knurling head for precise alignment to the working part.

**Recommended Use:** For best results, use beveled knurl wheels. In Feed the knurling tool into the blank until the right pattern is generated, then End Feed.



| Part No. | Model No.  | Shank  | Tool Lgth. | Price /Each |
|----------|------------|--------|------------|-------------|
| 3114163  | SCKN-50-D  | 1/2"   | 4-3/8"     | \$248.04    |
| 3114164  | SCKN-75-M  | 3/4"   | 6-1/8"     | 298.92      |
| 3114165  | SCKN-100-M | 1"     | 6-7/8"     | 337.08      |
| 3114166  | SCKN-125-M | 1-1/4" | 7-7/8"     | 375.24      |

\*Supplied with 1 set of 30 TPI Diagonal Knurl Wheels for Diamond Pattern.

\*\*Supplied with 1 set of 25 TPI Diagonal Knurl Wheels for Diamond Pattern.

### SSCK Shoulder Self-Centering Knurling Tool for C.N.C Lathe

- Specifically designed for CNC Lathe.
- Designed to knurl against a square shoulder.
- Precision square shank with preset center height.
- Twin knurl wheels for Straight and Diamond pattern.
- Knurl Wheels are mounted between the thrust washers to ensure smooth and even rotation of the knurls while knurling is performed.
- Supplied with SW series knurl wheels.
- Self-centering knurling head for a precise alignment to the working part.

**Recommended Use:** For best results, use beveled knurl wheels. In Feed the knurling tool into the blank until the right pattern is generated, then End Feed.



| Part No. | Model No.  | Shank  | Tool Lgth. | Price /Each |
|----------|------------|--------|------------|-------------|
| 3114167  | SSCK-50-2  | 1/2"   | 4"         | \$362.52    |
| 3114168  | SSCK-75-4  | 3/4"   | 5-3/8"     | 438.84      |
| 3114169  | SSCK-100-4 | 1"     | 6-1/8"     | 438.84      |
| 3114170  | SSCK-125-4 | 1-1/4" | 7-1/8"     | 477.00      |

\*Supplied with 1 set of 30 TPI Diagonal Knurl Wheels for Diamond Pattern.

\*\*Supplied with 1 set of 25 TPI Diagonal Knurl Wheels for Diamond Pattern.

# DORIAN KNURLING TOOL

Knurling Tools



## MMKT Milling Machine Knurling Tool

- Specifically designed to knurl a flat surface.
- Tool has been engineered to be used on milling machines.
- Ground Weldon shank to fit in the milling holders.
- Knurl wheels are mounted between the thrust washers to ensure a smooth and even rotation of the knurls while knurling is performed.
- Single wheel knurling tool.
- Straight and Diamond pattern.



**Recommended Use:** For best results, use beveled knurl wheels. In Feed the knurling tool into the blank until the right pattern is generated, then End Feed.

| Part No. | Model No. | Shank | Tool Lgth. | Price /Each |
|----------|-----------|-------|------------|-------------|
| 3114171  | MMKT-50-R | 1/2"  | 3-1/8"     | \$109.39    |
| 3114172  | MMKT-75-O | 3/4"  | 3-7/8"     | 117.02      |

\*Supplied with 1 Straight Knurl Wheel 25 TPI.

## IKT Internal Knurling Tool

- For internal knurling requiring a Straight or Diamond pattern.
- Designed to knurl against a square shoulder.
- Internal knurling is used to reduce over-size internal diameters or for specific knurling applications.
- Single wheel knurling tool.
- Supplied with SW series knurl wheels.



**Recommended Use:** For best results, use beveled knurl wheels. In Feed the knurling tool into the blank until the right pattern is generated, then End Feed.

| Part No. | Model No. | Shank  | Tool Lgth. | Price /Each |
|----------|-----------|--------|------------|-------------|
| 3114173  | IKT-50-2  | 1/2"   | 4"         | \$175.54    |
| 3114174  | IKT-75-4  | 3/4"   | 6"         | 209.88      |
| 3114175  | IKT-100-4 | 1"     | 8"         | 240.41      |
| 3114176  | IKT-125-4 | 1-1/4" | 10"        | 272.21      |

\*Supplied with 1 Straight Knurl Wheel 30 TPI.

\*\*Supplied with 1 Straight Knurl Wheel 25 TPI.

## PSW Series Knurling Pin Set



| Part No. | Model No. | Dimensions         | Price /Each |
|----------|-----------|--------------------|-------------|
| 3114185  | PSW-2.0S  | 1/4" Dia. x 5/8" L | \$37.58     |

## KPS Series Knurling Pins



| Part No. | Model No.    | Dimensions            | Price /Each |
|----------|--------------|-----------------------|-------------|
| 3114186  | KPS-25-87-C  | 1/4" Dia. x 7/8" L    | \$17.17     |
| 3114187  | KPS-31-100-C | 5/16" Dia. x 1" L     | 17.94       |
| 3114188  | KPS-25-62-C  | 1/4" Dia. x 5/8" L    | 14.76       |
| 3114189  | KPS-18-50    | 3/16" Dia. x 1/2" L   | 8.02        |
| 3114190  | KPS-31-100   | 5/16" Dia. x 1" L     | 8.90        |
| 3114191  | KPS-31-75    | 5/16" Dia. x 3/4" L   | 8.90        |
| 3114194  | KPS-25-87    | 1/4" Dia. x 7/8" L    | 8.40        |
| 3114195  | KPS-31-125   | 5/16" Dia. x 1-1/4" L | 9.04        |

## Knurl Wheels

### SW Series Knurling Pin Set

| Part No. | Model No. | Dimensions           | Price /Each |
|----------|-----------|----------------------|-------------|
| 3114196  | SW2.0P-1S | 1/4" Dia. x 1/2" L   | \$18.79     |
| 3114192  | SW2.0P-2S | 1/4" Dia. x 1/2" L   | 37.58       |
| 3114197  | SW4.0P-1S | 1/2" Dia. x 1-1/8" L | 22.03       |
| 3114193  | SW4.0P-2S | 1/2" Dia. x 1-1/8" L | 44.06       |

## Knurl Wheels



### REGULAR

| Part No.              | Teeth /in. | Description   | Price /Ea |
|-----------------------|------------|---------------|-----------|
| <b>Straight</b>       |            |               |           |
| 3114200               | 16         | DS-16-HS-CP   | \$26.40   |
| 3114206               | 20         | DS-20-HS-CP   | 26.40     |
| 3114212               | 25         | DS-25-HS-CP   | 26.40     |
| 3114218               | 30         | DS-30-HS-CP   | 26.40     |
| 3114224               | 35         | DS-35-HS-CP   | 26.40     |
| 3114230               | 40         | DS-40-HS-CP   | 26.40     |
| 3114236               | 16         | MS-16-HS-CP   | 37.80     |
| 3114242               | 20         | MS-20-HS-CP   | 37.80     |
| 3114248               | 25         | MS-25-HS-CP   | 37.80     |
| 3114254               | 30         | MS-30-HS-CP   | 37.80     |
| 3114260               | 35         | MS-35-HS-CP   | 37.80     |
| 3114266               | 40         | MS-40-HS-CP   | 33.08     |
| 3114308               | 16         | OS-16-HS-CP   | 23.33     |
| 3114314               | 20         | OS-20-HS-CP   | 23.33     |
| 3114320               | 25         | OS-25-HS-CP   | 23.33     |
| 3114326               | 30         | OS-30-HS-CP   | 23.33     |
| 3114332               | 35         | OS-35-HS-CP   | 23.33     |
| 3114338               | 40         | OS-40-HS-CP   | 23.33     |
| 3114272               | 16         | RS-16-HS-CP   | 29.40     |
| 3114278               | 20         | RS-20-HS-CP   | 29.40     |
| 3114284               | 25         | RS-25-HS-CP   | 29.40     |
| 3114290               | 30         | RS-30-HS-CP   | 29.40     |
| 3114296               | 35         | RS-35-HS-CP   | 29.40     |
| 3114302               | 40         | RS-40-HS-CP   | 29.40     |
| 3114344               | 16         | SW2S-16-HS-CP | 43.20     |
| 3114350               | 20         | SW2S-20-HS-CP | 43.20     |
| 3114356               | 25         | SW2S-25-HS-CP | 43.20     |
| 3114362               | 30         | SW2S-30-HS-CP | 43.20     |
| 3114368               | 35         | SW2S-35-HS-CP | 43.20     |
| 3114374               | 40         | SW2S-40-HS-CP | 43.20     |
| 3114380               | 16         | SW4S-16-HS-CP | 55.20     |
| 3114386               | 20         | SW4S-20-HS-CP | 55.20     |
| 3114392               | 25         | SW4S-25-HS-CP | 55.20     |
| 3114398               | 30         | SW4S-30-HS-CP | 55.20     |
| 3114404               | 35         | SW4S-35-HS-CP | 55.20     |
| 3114410               | 40         | SW4S-40-HS-CP | 55.20     |
| <b>Diagonal Right</b> |            |               |           |
| 3114198               | 16         | DDR-16-HS-CP  | \$26.40   |
| 3114204               | 20         | DDR-20-HS-CP  | 26.40     |
| 3114210               | 25         | DDR-25-HS-CP  | 26.40     |
| 3114216               | 30         | DDR-30-HS-CP  | 26.40     |
| 3114222               | 35         | DDR-35-HS-CP  | 26.40     |

### Diagonal Right Cont.

| Part No. | Teeth /in. | Description   | Price /Ea |
|----------|------------|---------------|-----------|
| 3114228  | 40         | DDR-40-HS-CP  | \$26.40   |
| 3114234  | 16         | MDR-16-HS-CP  | 37.80     |
| 3114240  | 20         | MDR-20-HS-CP  | 37.80     |
| 3114246  | 25         | MDR-25-HS-CP  | 37.80     |
| 3114252  | 30         | MDR-30-HS-CP  | 37.80     |
| 3114258  | 35         | MDR-35-HS-CP  | 37.80     |
| 3114264  | 40         | MDR-40-HS-CP  | 21.55     |
| 3114306  | 16         | ODR-16-HS-CP  | 24.62     |
| 3114312  | 20         | ODR-20-HS-CP  | 24.62     |
| 3114318  | 25         | ODR-25-HS-CP  | 24.62     |
| 3114324  | 30         | ODR-30-HS-CP  | 24.62     |
| 3114330  | 35         | ODR-35-HS-CP  | 37.80     |
| 3114336  | 40         | ODR-40-HS-CP  | 37.80     |
| 3114270  | 16         | RDR-16-HS-CP  | 29.40     |
| 3114276  | 20         | RDR-20-HS-CP  | 29.40     |
| 3114282  | 25         | RDR-25-HS-CP  | 29.40     |
| 3114288  | 30         | RDR-30-HS-CP  | 29.40     |
| 3114294  | 35         | RDR-35-HS-CP  | 29.40     |
| 3114300  | 40         | RDR-40-HS-CP  | 29.40     |
| 3114342  | 16         | SW2R-16-HS-CP | 43.20     |
| 3114348  | 20         | SW2R-20-HS-CP | 43.20     |
| 3114354  | 25         | SW2R-25-HS-CP | 43.20     |
| 3114360  | 30         | SW2R-30-HS-CP | 43.20     |
| 3114366  | 35         | SW2R-35-HS-CP | 43.20     |
| 3114372  | 40         | SW2R-40-HS-CP | 43.20     |
| 3114378  | 16         | SW4R-16-HS-CP | 55.20     |
| 3114384  | 20         | SW4R-20-HS-CP | 55.20     |
| 3114390  | 25         | SW4R-25-HS-CP | 55.20     |
| 3114396  | 30         | SW4R-30-HS-CP | 55.20     |
| 3114402  | 35         | SW4R-35-HS-CP | 55.20     |
| 3114408  | 40         | SW4R-40-HS-CP | 55.20     |

### Diagonal Left

|         |    |               |         |
|---------|----|---------------|---------|
| 3114199 | 16 | DDL-16-HS-CP  | \$26.40 |
| 3114205 | 20 | DDL-20-HS-CP  | 26.40   |
| 3114211 | 25 | DDL-25-HS-CP  | 26.40   |
| 3114217 | 35 | DDL-30-HS-CP  | 26.40   |
| 3114223 | 40 | DDL-35-HS-CP  | 26.40   |
| 3114229 | 16 | DDL-40-HS-CP  | 26.40   |
| 3114235 | 16 | MDL-16-HS-CP  | 37.80   |
| 3114241 | 20 | MDL-20-HS-CP  | 37.80   |
| 3114247 | 25 | MDL-25-HS-CP  | 37.80   |
| 3114253 | 30 | MDL-30-HS-CP  | 37.80   |
| 3114259 | 35 | MDL-35-HS-CP  | 37.80   |
| 3114265 | 40 | MDL-40-HS-CP  | 21.55   |
| 3114307 | 16 | ODL-16-HS-CP  | 24.62   |
| 3114313 | 20 | ODL-20-HS-CP  | 24.62   |
| 3114319 | 25 | ODL-25-HS-CP  | 24.62   |
| 3114325 | 30 | ODL-30-HS-CP  | 24.62   |
| 3114331 | 35 | ODL-35-HS-CP  | 37.80   |
| 3114337 | 40 | ODL-40-HS-CP  | 37.80   |
| 3114271 | 16 | RDL-16-HS-CP  | 29.40   |
| 3114277 | 20 | RDL-20-HS-CP  | 29.40   |
| 3114283 | 25 | RDL-25-HS-CP  | 29.40   |
| 3114289 | 30 | RDL-30-HS-CP  | 29.40   |
| 3114295 | 35 | RDL-35-HS-CP  | 29.40   |
| 3114301 | 40 | RDL-40-HS-CP  | 29.40   |
| 3114343 | 16 | SW2L-16-HS-CP | 43.20   |
| 3114349 | 20 | SW2L-20-HS-CP | 43.20   |
| 3114355 | 25 | SW2L-25-HS-CP | 43.20   |
| 3114361 | 30 | SW2L-30-HS-CP | 43.20   |
| 3114367 | 35 | SW2L-35-HS-CP | 43.20   |
| 3114373 | 40 | SW2L-40-HS-CP | 43.20   |
| 3114379 | 16 | SW4L-16-HS-CP | 55.20   |
| 3114385 | 20 | SW4L-20-HS-CP | 55.20   |
| 3114391 | 25 | SW4L-25-HS-CP | 55.20   |
| 3114397 | 30 | SW4L-30-HS-CP | 55.20   |
| 3114403 | 35 | SW4L-35-HS-CP | 55.20   |
| 3114409 | 40 | SW4L-40-HS-CP | 55.20   |

### BEVELED

| Part No.        | Teeth /in. | Description  | Price /Ea |
|-----------------|------------|--------------|-----------|
| <b>Straight</b> |            |              |           |
| 3114203         | 16         | DS-16-HSB-CP | \$26.40   |
| 3114209         | 20         | DS-20-HSB-CP | 26.40     |
| 3114215         | 25         | DS-25-HSB-CP | 26.40     |
| 3114221         | 30         | DS-30-HSB-CP | 26.40     |
| 3114227         | 35         | DS-35-HSB-CP | 26.40     |
| 3114233         | 40         | DS-40-HSB-CP | 26.40     |
| 3114239         | 16         | MS-16-HSB-CP | 37.80     |
| 3114245         | 20         | MS-20-HSB-CP | 37.80     |



# DORIAN TOOL, TORX INDICATORS, BRAZED CARBIDE TOOL BITS

## Dorian Tool Cont.



### BEVELED Cont.

| Part No.              | Teeth /in. | Description    | Price /Ea |
|-----------------------|------------|----------------|-----------|
| <b>Straight Cont.</b> |            |                |           |
| 3114251               | 25         | MS-25-HSB-CP   | \$37.80   |
| 3114257               | 30         | MS-30-HSB-CP   | 37.80     |
| 3114263               | 35         | MS-35-HSB-CP   | 37.80     |
| 3114269               | 40         | MS-40-HSB-CP   | 21.55:    |
| 3114311               | 16         | OS-16-HSB-CP   | 23.33     |
| 3114317               | 20         | OS-20-HSB-CP   | 23.33     |
| 3114323               | 25         | OS-25-HSB-CP   | 23.33     |
| 3114329               | 30         | OS-30-HSB-CP   | 23.33     |
| 3114335               | 35         | OS-35-HSB-CP   | 37.80     |
| 3114341               | 40         | OS-40-HSB-CP   | 37.80     |
| 3114275               | 16         | RS-16-HSB-CP   | 29.40     |
| 3114281               | 20         | RS-20-HSB-CP   | 29.40     |
| 3114287               | 25         | RS-25-HSB-CP   | 29.40     |
| 3114293               | 30         | RS-30-HSB-CP   | 29.40     |
| 3114299               | 35         | RS-35-HSB-CP   | 29.40     |
| 3114305               | 40         | RS-40-HSB-CP   | 29.40     |
| 3114347               | 16         | SW2S-16-HSB-CP | 43.20     |
| 3114353               | 20         | SW2S-20-HSB-CP | 43.20     |
| 3114359               | 25         | SW2S-25-HSB-CP | 43.20     |
| 3114365               | 30         | SW2S-30-HSB-CP | 43.20     |
| 3114371               | 35         | SW2S-35-HSB-CP | 43.20     |
| 3114377               | 40         | SW2S-40-HSB-CP | 43.20     |
| 3114383               | 16         | SW4S-16-HSB-CP | 55.20     |
| 3114389               | 20         | SW4S-20-HSB-CP | 55.20     |
| 3114395               | 25         | SW4S-25-HSB-CP | 55.20     |
| 3114401               | 30         | SW4S-30-HSB-CP | 55.20     |
| 3114407               | 35         | SW4S-35-HSB-CP | 55.20     |
| 3114413               | 40         | SW4S-40-HSB-CP | 55.20     |
| <b>Diagonal Right</b> |            |                |           |
| 3114201               | 16         | DDR-16-HSB-CP  | \$26.40   |
| 3114207               | 20         | DDR-20-HSB-CP  | 26.40     |
| 3114213               | 25         | DDR-25-HSB-CP  | 26.40     |
| 3114219               | 30         | DDR-30-HSB-CP  | 26.40     |
| 3114225               | 35         | DDR-35-HSB-CP  | 26.40     |
| 3114231               | 40         | DDR-40-HSB-CP  | 26.40     |
| 3114237               | 16         | MDR-16-HSB-CP  | 37.80     |
| 3114243               | 20         | MDR-20-HSB-CP  | 37.80     |
| 3114249               | 25         | MDR-25-HSB-CP  | 37.80     |
| 3114255               | 30         | MDR-30-HSB-CP  | 37.80     |
| 3114261               | 35         | MDR-35-HSB-CP  | 37.80     |
| 3114267               | 40         | MDR-40-HSB-CP  | 33.08:    |
| 3114309               | 16         | ODR-16-HSB-CP  | 24.62     |
| 3114315               | 20         | ODR-20-HSB-CP  | 24.62     |
| 3114321               | 25         | ODR-25-HSB-CP  | 24.62     |
| 3114327               | 30         | ODR-30-HSB-CP  | 24.62     |
| 3114333               | 35         | ODR-35-HSB-CP  | 37.80:    |
| 3114273               | 16         | RDR-16-HSB-CP  | 29.40:    |
| 3114279               | 20         | RDR-20-HSB-CP  | 29.40     |
| 3114285               | 25         | RDR-25-HSB-CP  | 29.40     |

### BEVELED Cont.

| Part No.                    | Teeth /in. | Description    | Price /Ea |
|-----------------------------|------------|----------------|-----------|
| <b>Diagonal Right Cont.</b> |            |                |           |
| 3114291                     | 30         | RDR-30-HSB-CP  | \$29.40   |
| 3114297                     | 35         | RDR-35-HSB-CP  | 29.40     |
| 3114303                     | 40         | RDR-40-HSB-CP  | 29.40     |
| 3114345                     | 16         | SW2R-16-HSB-CP | 43.20     |
| 3114351                     | 20         | SW2R-20-HSB-CP | 43.20     |
| 3114357                     | 25         | SW2R-25-HSB-CP | 43.20     |
| 3114363                     | 30         | SW2R-30-HSB-CP | 43.20     |
| 3114369                     | 35         | SW2R-35-HSB-CP | 43.20     |
| 3114375                     | 40         | SW2R-40-HSB-CP | 43.20     |
| 3114381                     | 16         | SW4R-16-HSB-CP | 55.20     |
| 3114387                     | 20         | SW4R-20-HSB-CP | 55.20     |
| 3114393                     | 25         | SW4R-25-HSB-CP | 55.20     |
| 3114399                     | 30         | SW4R-30-HSB-CP | 55.20     |
| 3114405                     | 35         | SW4R-35-HSB-CP | 55.20     |
| 3114411                     | 40         | SW4R-40-HSB-CP | 55.20     |
| <b>Diagonal Left</b>        |            |                |           |
| 3114202                     | 16         | DDL-16-HSB-CP  | \$26.40   |
| 3114208                     | 20         | DDL-20-HSB-CP  | 26.40     |
| 3114214                     | 25         | DDL-25-HSB-CP  | 26.40     |
| 3114220                     | 30         | DDL-30-HSB-CP  | 26.40     |
| 3114226                     | 35         | DDL-35-HSB-CP  | 26.40     |
| 3114232                     | 40         | DDL-40-HSB-CP  | 26.40     |
| 3114238                     | 16         | MDL-16-HSB-CP  | 37.80     |
| 3114244                     | 20         | MDL-20-HSB-CP  | 37.80     |
| 3114250                     | 25         | MDL-25-HSB-CP  | 37.80     |
| 3114256                     | 30         | MDL-30-HSB-CP  | 37.80     |
| 3114262                     | 35         | MDL-35-HSB-CP  | 37.80     |
| 3114268                     | 40         | MDL-40-HSB-CP  | 21.55:    |
| 3114310                     | 16         | ODL-16-HSB-CP  | 24.62     |
| 3114316                     | 20         | ODL-20-HSB-CP  | 24.62     |
| 3114322                     | 25         | ODL-25-HSB-CP  | 24.62     |
| 3114328                     | 30         | ODL-30-HSB-CP  | 24.62     |
| 3114334                     | 35         | ODL-35-HSB-CP  | 37.80:    |
| 3114340                     | 40         | ODL-40-HSB-CP  | 37.80:    |
| 3114274                     | 16         | RDL-16-HSB-CP  | 29.40     |
| 3114280                     | 20         | RDL-20-HSB-CP  | 29.40     |
| 3114286                     | 25         | RDL-25-HSB-CP  | 29.40     |
| 3114292                     | 30         | RDL-30-HSB-CP  | 29.40     |
| 3114298                     | 35         | RDL-35-HSB-CP  | 29.40     |
| 3114304                     | 40         | RDL-40-HSB-CP  | 29.40     |
| 3114346                     | 16         | SW2L-16-HSB-CP | 43.20     |
| 3114352                     | 20         | SW2L-20-HSB-CP | 43.20     |
| 3114358                     | 25         | SW2L-25-HSB-CP | 43.20     |
| 3114364                     | 30         | SW2L-30-HSB-CP | 43.20     |
| 3114370                     | 35         | SW2L-35-HSB-CP | 43.20     |
| 3114376                     | 40         | SW2L-40-HSB-CP | 43.20     |
| 3114382                     | 20         | SW4L-16-HSB-CP | 55.20     |
| 3114386                     | 20         | SW4S-20-HS-CP  | 55.20     |
| 3114388                     | 20         | SW4L-20-HSB-CP | 55.20     |
| 3114394                     | 25         | SW4L-25-HSB-CP | 55.20     |
| 3114400                     | 30         | SW4L-30-HSB-CP | 55.20     |
| 3114406                     | 35         | SW4L-35-HSB-CP | 55.20     |
| 3114412                     | 40         | SW4L-40-HSB-CP | 55.20     |

## Wera Torx-Indicators



### 300 TX Torque-Indicator

Handle: Kraffform® with anti-roll protection, two components.



| Part No. | Torque Range       | Price /Each |
|----------|--------------------|-------------|
| 3119590  | 0.4 ft/lbs, 0.6 NM | \$42.16     |
| 3119591  | 0.7 ft/lbs, 0.9 NM | 42.67       |
| 3119592  | 0.9 ft/lbs, 1.2 NM | 43.18       |
| 3119593  | 1.0 ft/lbs, 1.4 NM | 45.99       |
| 3119594  | 1.5 ft/lbs, 2.0 NM | 47.26       |
| 3119595  | 2.2 ft/lbs, 3.0 NM | 50.33       |

### 300 IP Torque-Indicator

Handle: Kraffform® with anti-roll protection, two components



| Part No. | Torque Range       | Price /Each |
|----------|--------------------|-------------|
| 3119596  | 0.4 ft/lbs, 0.6 NM | \$44.20     |
| 3119597  | 0.7 ft/lbs, 0.9 NM | 44.71       |
| 3119598  | 0.9 ft/lbs, 1.2 NM | 45.22       |
| 3119599  | 1.0 ft/lbs, 1.4 NM | 48.03       |
| 3119600  | 1.5 ft/lbs, 2.0 NM | 49.82       |
| 3119601  | 2.2 ft/lbs, 3.0 NM | 52.64       |

### 300 Hex-Torque-Indicator

Handle: Kraffform® with anti-roll protection, two components

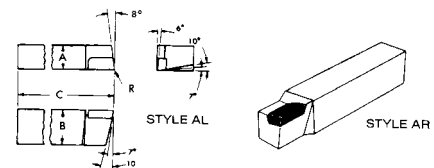


| Part No. | Torque Range       | Price /Each |
|----------|--------------------|-------------|
| 3119587  | 1.0 ft/lbs, 1.4 NM | \$45.99     |
| 3119588  | 1.5 ft/lbs, 2.0 NM | 47.26       |
| 3119589  | 2.2 ft/lbs, 3.0 NM | 50.33       |

## Brazed Carbide Tool Bits



- Grade C2 - General purpose
- Grade C5 - For steel and steel alloys
- Style AR - Right Hand, Style AL - Left Hand



| Style | Shank Dim. A | Shank Dim. B | Shank Dim. C | Nose Radius | ACT C2   |             | ACT C5   |             | Import C2 |             | Import C5 |             |
|-------|--------------|--------------|--------------|-------------|----------|-------------|----------|-------------|-----------|-------------|-----------|-------------|
|       |              |              |              |             | Part No. | Price /Each | Part No. | Price /Each | Part No.  | Price /Each | Part No.  | Price /Each |
| AR-4  | 1/4          | 1/4          | 2            | 1/64        | 0304400  | \$5.25      | 0303666  | \$5.22      | 0305127   | \$3.50      | 0305135   | \$3.50      |
| AR-5  | 5/16         | 5/16         | 2-1/4        | 1/64        | 0304401  | 5.77        | 0303667  | 5.76        | 0305128   | 3.76        | 0305136   | 3.76        |
| AR-6  | 3/8          | 3/8          | 2-1/2        | 1/64        | 0304402  | 5.91        | 0303668  | 5.90        | 0305129   | 3.84        | 0305137   | 3.84        |
| AR-7  | 7/16         | 7/16         | 3            | 1/32        | 0304403  | 6.04        | 0303669  | 6.01        | 0305130   | 3.91        | 0305138   | 3.91        |
| AR-8  | 1/2          | 1/2          | 3-1/2        | 1/32        | 0304404  | 7.69        | 0303670  | 7.69        | 0305131   | 5.03        | 0305139   | 5.03        |
| AR-10 | 5/8          | 5/8          | 4            | 1/32        | 0304405  | 10.77       | 0303671  | 10.61       | 0305132   | 6.80        | 0305140   | 6.80        |
| AR-12 | 3/4          | 3/4          | 4-1/2        | 1/32        | 0304406  | 13.33       | 0303672  | 12.88       | 0305133   | 14.11       | 0305141   | 14.11       |
| AR-16 | 1            | 1            | 7            | 1/32        | 0304407  | 21.07       | 0303673  | 21.48       | 0305134   | 21.97       | 0305142   | 21.97       |
| AR-44 | 1/2          | 1            | 7            | 1/32        | 0304408  | 10.98       | 0303674  | 10.98       |           |             |           |             |

The : symbol after a price denotes that it is a Direct Ship Product (DSP) and shipping, availability & lead times may vary.



# BRAZED CARBIDE TOOL BITS

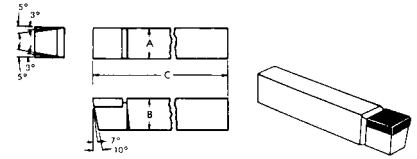
## Brazed Carbide Tool Bits Cont.



Carbide

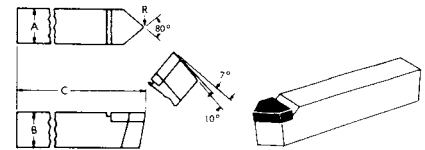
| Style AL |              |              |              |             | ACT C2   |             | ACT C5   |             | Import C2 |             | Import C5 |             |
|----------|--------------|--------------|--------------|-------------|----------|-------------|----------|-------------|-----------|-------------|-----------|-------------|
| Style    | Shank Dim. A | Shank Dim. B | Shank Dim. C | Nose Radius | Part No. | Price /Each | Part No. | Price /Each | Part No.  | Price /Each | Part No.  | Price /Each |
| AL-4     | 1/4          | 1/4          | 2            | 1/64        | 0304461  | \$5.36      | 0303675  | \$5.32      | 0305143   | \$3.50      | 0305151   | \$3.50      |
| AL-5     | 5/16         | 5/16         | 2-1/4        | 1/64        | 0304462  | 5.99        | 0303676  | 5.99        | 0305144   | 3.76        | 0305152   | 3.76        |
| AL-6     | 3/8          | 3/8          | 2-1/2        | 1/64        | 0304463  | 6.08        | 0303677  | 6.07        | 0305145   | 3.84        | 0305153   | 3.84        |
| AL-7     | 7/16         | 7/16         | 3            | 1/32        | 0304464  | 6.16        | 0303678  | 6.12        | 0305146   | 3.91        | 0305154   | 3.91        |
| AL-8     | 1/2          | 1/2          | 3-1/2        | 1/32        | 0304465  | 7.69        | 0303679  | 7.69        | 0305147   | 5.03        | 0305155   | 5.03        |
| AL-10    | 5/8          | 5/8          | 4            | 1/32        | 0304466  | 11.18       | 0303680  | 11.01       | 0305148   | 6.80        | 0305156   | 6.80        |
| AL-12    | 3/4          | 3/4          | 4-1/2        | 1/32        | 0304467  | 13.21       | 0303681  | 12.76       | 0305149   | 14.11       | 0305157   | 14.11       |
| AL-16    | 1            | 1            | 7            | 1/32        | 0304468  | 22.18       | 0303682  | 22.61       | 0305150   | 21.97       | 0305158   | 21.97       |
| AL-44    | 1/2          | 1            | 7            | 1/32        | 0304469  | 10.67       | 0303683  | 10.67       |           |             |           |             |

Style C - Square nose



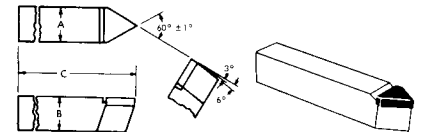
| Style C |              |              |              |             | ACT C2   |             | ACT C5   |             | Import C2 |             | Import C5 |             |
|---------|--------------|--------------|--------------|-------------|----------|-------------|----------|-------------|-----------|-------------|-----------|-------------|
| Style   | Shank Dim. A | Shank Dim. B | Shank Dim. C | Nose Radius | Part No. | Price /Each | Part No. | Price /Each | Part No.  | Price /Each | Part No.  | Price /Each |
| C-4     | 1/4          | 1/4          | 2            | -           | 0304641  | \$5.69      | 0303702  | \$5.69      | 0305191   | \$3.50      | 0305199   | \$3.50      |
| C-5     | 5/16         | 5/16         | 2-1/4        | -           | 0304642  | 6.20        | 0303703  | 6.08        | 0305192   | 3.76        | 0305200   | 3.76        |
| C-6     | 3/8          | 3/8          | 2-1/2        | 1/64        | 0304643  | 6.27        | 0303704  | 6.24        | 0305193   | 3.84        | 0305201   | 3.84        |
| C-7     | 7/16         | 7/16         | 3            | -           | 0304644  | 7.45        | 0303705  | 7.27        | 0305194   | 3.91        | 0305202   | 3.91        |
| C-8     | 1/2          | 1/2          | 3-1/2        | 1/32        | 0304645  | 8.18        | 0303706  | 7.97        | 0305195   | 5.03        | 0305203   | 5.03        |
| C-10    | 5/8          | 5/8          | 4            | -           | 0304646  | 12.79       | 0303707  | 11.94       | 0305196   | 6.80        | 0305204   | 6.80        |
| C-12    | 3/4          | 3/4          | 4-1/2        | -           | 0304647  | 16.37       | 0303708  | 16.71       | 0305197   | 14.11       | 0305205   | 14.11       |
| C-16    | 1            | 1            | 7            | -           | 0304648  | 29.00       | 0303709  | 29.39       | 0305198   | 21.97       | 0305206   | 21.97       |
| C-44    | 1/2          | 1            | 7            | -           | 0304649  | 11.74       | 0303710  | 11.74       |           |             |           |             |

Style D - Pointed nose with a 80° Included angle



| Style D |              |              |              |             | ACT C2   |             | ACT C5   |             | Import C2 |             | Import C5 |             |
|---------|--------------|--------------|--------------|-------------|----------|-------------|----------|-------------|-----------|-------------|-----------|-------------|
| Style   | Shank Dim. A | Shank Dim. B | Shank Dim. C | Nose Radius | Part No. | Price /Each | Part No. | Price /Each | Part No.  | Price /Each | Part No.  | Price /Each |
| D-4     | 1/4          | 1/4          | 2            | 1/64        | 0304704  | \$5.66      | 0303711  | \$5.65      | 0305207   | \$3.50      | 0305215   | \$3.50      |
| D-5     | 5/16         | 5/16         | 2-1/4        | 1/64        | 0304705  | 6.37        | 0303712  | 6.81        | 0305208   | 3.76        | 0305216   | 3.76        |
| D-6     | 3/8          | 3/8          | 2-1/2        | 1/64        | 0304706  | 6.85        | 0303713  | 6.90        | 0305209   | 3.84        | 0305217   | 3.84        |
| D-7     | 7/16         | 7/16         | 3            | 1/32        | 0304707  | 8.42        | 0303714  | 8.14        | 0305210   | 3.91        | 0305218   | 3.91        |
| D-8     | 1/2          | 1/2          | 3-1/2        | 1/32        | 0304708  | 8.87        | 0303715  | 8.70        | 0305211   | 5.03        | 0305219   | 5.03        |
| D-10    | 5/8          | 5/8          | 4            | 1/32        | 0304709  | 11.88       | 0303716  | 10.67       | 0305212   | 6.80        | 0305220   | 6.80        |
| D-12    | 3/4          | 3/4          | 4-1/2        | 1/32        | 0304710  | 14.11       | 0303717  | 13.60       | 0305213   | 14.11       | 0305221   | 14.11       |
| D-16    | 1            | 1            | 7            | 1/32        | 0304711  | 25.81       | 0303718  | 25.74       | 0305214   | 21.97       | 0305222   | 21.97       |

Style E - Treading Tool with a 60° Included angle



| Style E |              |              |              |             | ACT C2   |             | ACT C5   |             | Import C2 |             | Import C5 |             |
|---------|--------------|--------------|--------------|-------------|----------|-------------|----------|-------------|-----------|-------------|-----------|-------------|
| Style   | Shank Dim. A | Shank Dim. B | Shank Dim. C | Nose Radius | Part No. | Price /Each | Part No. | Price /Each | Part No.  | Price /Each | Part No.  | Price /Each |
| E-4     | 1/4          | 1/4          | 2            | -           | 0304760  | \$5.66      | 0303719  | \$5.65      | 0305223   | \$3.50      | 0305231   | \$3.50      |
| E-5     | 5/16         | 5/16         | 2-1/4        | -           | 0304761  | 6.37        | 0303720  | 6.81        | 0305224   | 3.76        | 0305232   | 3.76        |
| E-6     | 3/8          | 3/8          | 2-1/2        | 1-64        | 0304762  | 6.85        | 0303721  | 6.90        | 0305225   | 3.84        | 0305233   | 3.84        |
| E-7     | 7/16         | 7/16         | 3            | -           | 0304763  | 8.42        | 0303722  | 8.14        | 0305226   | 3.91        | 0305234   | 3.91        |
| E-8     | 1/2          | 1/2          | 3-1/2        | 1/32        | 0304764  | 8.87        | 0303723  | 8.70        | 0305227   | 5.03        | 0305235   | 5.03        |
| E-10    | 5/8          | 5/8          | 4            | -           | 0304765  | 11.88       | 0303724  | 10.67       | 0305228   | 6.80        | 0305236   | 6.80        |
| E-12    | 3/4          | 3/4          | 4-1/2        | -           | 0304766  | 14.11       | 0303725  | 13.60       | 0305229   | 14.11       | 0305237   | 14.11       |
| E-16    | 1            | 1            | 7            | -           | 0304767  | 25.93       | 0303726  | 25.85       | 0305230   | 21.97       | 0305238   | 21.97       |

# BORING TOOLS, BRAZED CARBIDE TOOL BITS

## Boring Tools



### Solid Carbide Micrograin Boring Tools BB Series - Right Hand - With Radius - NC Generation

Top cutting surface has an ultra fine finish for precision and general boring in ferrous and non-ferrous materials. A light cut is recommended to achieve a superior finish. Manufactured with wear resistant carbide.

| Part No. | Min. Bore | Max. Bore | Shank Dia. | Overall Lgth. | Price /Each |
|----------|-----------|-----------|------------|---------------|-------------|
| 0361309  | .050      | 0.1500    | 1/8        | 1-1/2         | \$20.79     |
| 0361310  | .050      | 0.2000    | 1/8        | 1-1/2         | 20.79       |
| 0361311  | .050      | 0.3000    | 1/8        | 1-1/2         | 20.79       |
| 0361312  | .050      | 0.4000    | 1/8        | 1-1/2         | 20.79       |
| 0361313  | .060      | 0.1500    | 1/8        | 1-1/2         | 20.79       |
| 0361314  | .060      | 0.2000    | 1/8        | 1-1/2         | 20.79       |
| 0361315  | .060      | 0.3000    | 1/8        | 1-1/2         | 20.79       |
| 0361316  | .060      | 0.4000    | 1/8        | 1-1/2         | 20.79       |
| 0361317  | .060      | 0.5000    | 1/8        | 1-1/2         | 20.79       |
| 0361318  | .080      | 0.1500    | 1/8        | 1-1/2         | 20.79       |
| 0361319  | .080      | 0.2000    | 1/8        | 1-1/2         | 20.79       |
| 0361320  | .080      | 0.3000    | 1/8        | 1-1/2         | 20.79       |
| 0361321  | .080      | 0.4000    | 1/8        | 1-1/2         | 20.79       |
| 0361322  | .080      | 0.5000    | 1/8        | 1-1/2         | 20.79       |
| 0361323  | .080      | 0.6000    | 1/8        | 1-1/2         | 20.79       |
| 0361324  | .100      | 0.1500    | 1/8        | 1-1/2         | 20.79       |
| 0361325  | .100      | 0.2000    | 1/8        | 1-1/2         | 20.79       |
| 0361326  | .100      | 0.3000    | 1/8        | 1-1/2         | 20.79       |
| 0361327  | .100      | 0.4000    | 1/8        | 1-1/2         | 20.79       |
| 0361328  | .100      | 0.5000    | 1/8        | 1-1/2         | 20.79       |
| 0361329  | .100      | 0.6000    | 1/8        | 1-1/2         | 20.79       |
| 0361330  | .100      | 0.7000    | 1/8        | 1-1/2         | 20.79       |
| 0361331  | .110      | 0.1500    | 1/8        | 1-1/2         | 20.79       |
| 0361332  | .110      | 0.2000    | 1/8        | 1-1/2         | 20.79       |
| 0361333  | .110      | 0.3000    | 1/8        | 1-1/2         | 20.79       |
| 0361334  | .110      | 0.4000    | 1/8        | 1-1/2         | 20.79       |
| 0361335  | .110      | 0.5000    | 1/8        | 1-1/2         | 20.79       |
| 0361336  | .110      | 0.6000    | 1/8        | 1-1/2         | 20.79       |
| 0361337  | .110      | 0.7000    | 1/8        | 1-1/2         | 20.79       |
| 0361338  | .120      | 0.2500    | 3/16       | 2             | 22.13       |
| 0361339  | .120      | 0.3500    | 3/16       | 2             | 22.13       |
| 0361340  | .120      | 0.5000    | 3/16       | 2             | 22.13       |
| 0361341  | .120      | 0.6000    | 3/16       | 2             | 22.13       |
| 0361342  | .120      | 0.7000    | 3/16       | 2             | 22.13       |
| 0361343  | .120      | 0.8000    | 3/16       | 2             | 22.13       |
| 0361344  | .140      | 0.2500    | 3/16       | 2             | 22.13       |
| 0361345  | .140      | 0.4000    | 3/16       | 2             | 22.13       |
| 0361346  | .140      | 0.5000    | 3/16       | 2             | 22.13       |
| 0361347  | .140      | 0.6000    | 3/16       | 2             | 22.13       |
| 0361348  | .140      | 0.7000    | 3/16       | 2             | 22.13       |
| 0361349  | .140      | 0.7500    | 3/16       | 2             | 22.13       |
| 0361350  | .140      | 0.8000    | 3/16       | 2             | 22.13       |
| 0361351  | .160      | 0.2500    | 3/16       | 2             | 22.13       |
| 0361352  | .160      | 0.4000    | 3/16       | 2             | 22.13       |
| 0361353  | .160      | 0.5000    | 3/16       | 2             | 22.13       |
| 0361354  | .160      | 0.6000    | 3/16       | 2             | 22.13       |
| 0361355  | .160      | 0.7500    | 3/16       | 2             | 22.13       |
| 0361356  | .160      | 0.9000    | 3/16       | 2             | 22.13       |
| 0361357  | .160      | 1.0000    | 3/16       | 2             | 22.13       |
| 0361358  | .180      | 0.3500    | 1/4        | 2-1/2         | 23.73       |
| 0361359  | .180      | 0.5000    | 1/4        | 2-1/2         | 23.73       |
| 0361360  | .180      | 0.6000    | 1/4        | 2-1/2         | 23.73       |
| 0361361  | .180      | 0.7500    | 1/4        | 2-1/2         | 23.73       |
| 0361362  | .180      | 0.9000    | 1/4        | 2-1/2         | 23.73       |
| 0361363  | .180      | 1.0000    | 1/4        | 2-1/2         | 23.73       |
| 0361364  | .200      | 1.1000    | 1/4        | 2-1/2         | 23.73       |
| 0361365  | .200      | 0.4000    | 1/4        | 2-1/2         | 23.73       |
| 0361366  | .200      | 0.5000    | 1/4        | 2-1/2         | 23.73       |
| 0361367  | .200      | 0.6000    | 1/4        | 2-1/2         | 23.73       |
| 0361368  | .200      | 0.7000    | 1/4        | 2-1/2         | 23.73       |
| 0361369  | .200      | 0.8000    | 1/4        | 2-1/2         | 23.73       |
| 0361370  | .200      | 0.9000    | 1/4        | 2-1/2         | 23.73       |

Radius: 1/8" Dia. .003-.005"  
3/16" - 1/2" dia. .005-.008"  
Shank Diameter: -.0001 to -.0003  
Minimum Bore Dia. +.000 - .005"  
Maximum Bore Dia. +.050 - .000"  
Overall Length: ±1/64"



Lock down flat locates tool on center. Other sizes available upon request. Left handed boring bars and boring bars with no corner radius are also available.

| Part No. | Min. Bore | Max. Bore | Shank Dia. | Overall Lgth. | Price /Each |
|----------|-----------|-----------|------------|---------------|-------------|
| 0361371  | .200      | 1.0000    | 1/4        | 2-1/2         | \$23.73     |
| 0361372  | .230      | 0.4000    | 5/16       | 2-1/2         | 32.04       |
| 0361373  | .230      | 0.5000    | 5/16       | 2-1/2         | 32.04       |
| 0361374  | .230      | 0.6000    | 5/16       | 2-1/2         | 32.04       |
| 0361375  | .230      | 0.7000    | 5/16       | 2-1/2         | 32.04       |
| 0361376  | .230      | 0.8000    | 5/16       | 2-1/2         | 32.04       |
| 0361377  | .230      | 0.9000    | 5/16       | 2-1/2         | 32.04       |
| 0361378  | .230      | 1.0000    | 5/16       | 2-1/2         | 32.04       |
| 0361379  | .230      | 1.1000    | 5/16       | 2-1/2         | 32.04       |
| 0361380  | .230      | 1.1500    | 5/16       | 2-1/2         | 32.04       |
| 0361381  | .230      | 1.2000    | 5/16       | 2-1/2         | 32.04       |
| 0361382  | .230      | 1.2500    | 5/16       | 2-1/2         | 32.04       |
| 0361383  | .230      | 1.4000    | 5/16       | 2-1/2         | 32.04       |
| 0361384  | .230      | 1.5000    | 5/16       | 2-1/2         | 32.04       |
| 0361385  | .230      | 1.6000    | 5/16       | 2-1/2         | 32.04       |
| 0361386  | .290      | 0.5000    | 5/16       | 2-1/2         | 32.04       |
| 0361387  | .290      | 0.6000    | 5/16       | 2-1/2         | 32.04       |
| 0361388  | .290      | 0.7500    | 5/16       | 2-1/2         | 32.04       |
| 0361389  | .290      | 0.9000    | 5/16       | 2-1/2         | 32.04       |
| 0361390  | .290      | 1.0000    | 5/16       | 2-1/2         | 32.04       |
| 0361391  | .290      | 1.1000    | 5/16       | 2-1/2         | 32.04       |
| 0361392  | .290      | 1.2500    | 5/16       | 2-1/2         | 32.04       |
| 0361393  | .290      | 1.3500    | 5/16       | 2-1/2         | 32.04       |
| 0361394  | .290      | 1.5000    | 5/16       | 2-1/2         | 32.04       |
| 0361395  | .290      | 1.6000    | 5/16       | 2-1/2         | 32.04       |
| 0361396  | .290      | 1.7500    | 5/16       | 2-1/2         | 32.04       |
| 0361397  | .320      | 0.5000    | 3/8        | 2-1/2         | 43.69       |
| 0361398  | .320      | 0.6000    | 3/8        | 2-1/2         | 43.69       |
| 0361399  | .320      | 0.7500    | 3/8        | 2-1/2         | 43.69       |
| 0361400  | .320      | 0.9000    | 3/8        | 2-1/2         | 43.69       |
| 0361401  | .320      | 1.0000    | 3/8        | 2-1/2         | 43.69       |
| 0361402  | .320      | 1.1000    | 3/8        | 2-1/2         | 43.69       |
| 0361403  | .320      | 1.2500    | 3/8        | 2-1/2         | 43.69       |
| 0361404  | .320      | 1.5000    | 3/8        | 2-1/2         | 43.69       |
| 0361405  | .320      | 1.6000    | 3/8        | 2-1/2         | 43.69       |
| 0361406  | .320      | 1.8000    | 3/8        | 2-1/2         | 43.69       |
| 0361407  | .320      | 2.0000    | 3/8        | 4             | 55.90       |
| 0361408  | .320      | 2.5000    | 3/8        | 4             | 55.90       |
| 0361409  | .320      | 3.0000    | 3/8        | 4             | 55.90       |
| 0361410  | .360      | 0.5000    | 3/8        | 2-1/2         | 43.69       |
| 0361411  | .360      | 0.6000    | 3/8        | 2-1/2         | 43.69       |
| 0361412  | .360      | 0.7500    | 3/8        | 2-1/2         | 43.69       |
| 0361413  | .360      | 0.9000    | 3/8        | 2-1/2         | 43.69       |
| 0361414  | .360      | 1.0000    | 3/8        | 2-1/2         | 43.69       |
| 0361415  | .360      | 1.2500    | 3/8        | 2-1/2         | 43.69       |
| 0361416  | .360      | 1.5000    | 3/8        | 2-1/2         | 43.69       |
| 0361417  | .360      | 1.6000    | 3/8        | 2-1/2         | 43.69       |
| 0361418  | .360      | 1.8000    | 3/8        | 2-1/2         | 43.69       |
| 0361419  | .360      | 2.0000    | 3/8        | 4             | 55.90       |
| 0361420  | .360      | 2.5000    | 3/8        | 4             | 55.90       |
| 0361421  | .360      | 3.0000    | 3/8        | 4             | 55.90       |
| 0361422  | .490      | 0.7500    | 1/2        | 3             | 60.99       |
| 0361423  | .490      | 1.0000    | 1/2        | 3             | 60.99       |
| 0361424  | .490      | 1.2500    | 1/2        | 3             | 60.99       |
| 0361425  | .490      | 1.5000    | 1/2        | 3             | 60.99       |
| 0361426  | .490      | 2.0000    | 1/2        | 4             | 66.89       |
| 0361427  | .490      | 2.5000    | 1/2        | 4             | 66.89       |
| 0361428  | .490      | 2.6000    | 1/2        | 4             | 66.89       |
| 0361429  | .490      | 2.7500    | 1/2        | 4             | 66.89       |
| 0361430  | .490      | 3.0000    | 1/2        | 6             | 83.90       |
| 0361431  | .490      | 3.5000    | 1/2        | 6             | 83.90       |
| 0361432  | .490      | 4.0000    | 1/2        | 6             | 83.90       |

## Negative Carbide Inserts

# Valenite®



Carbide Inserts & Indexable Tooling

| Materials   | Valenite Grade | Coating  |
|---|----------------|----------|
| Cast Iron & Ductile Iron  | VP1510         | MTCVD    |
| Carbon & Alloy Steels   | VP5515         | MTCVD    |
| Carbon, Alloy Steels & Stainless Steels                         | VP5525         | MTCVD    |
| Stainless Steels  | VP8535         | MTCVD    |
| Ductile Cast Iron & Steels                                      | VP1505         | MTCVD    |
| Carbon, Alloy Steels & Stainless Steels                         | VP5535         | MTCVD    |
| Cast Irons, Non-Ferrous Alloys                                  | VPUK20         | UNCOATED |
| Steels, Stainless Steels, High Temp Alloys & Non-Ferrous Alloys | VP9610         | PVD      |
| Steel & Stainless Steels  | VPUP30         | UNCOATED |
| Carbon, Alloy, Stainless Steel, Cast Iron & Aluminum            | VP5020         | PVD      |
| Steel & Stainless Steels  | VP5045         | PVD      |

| Part No. | Description           | Grade  | Price /Each |
|----------|-----------------------|--------|-------------|
| 3101211  | CNMG431M5 VP5525      | VP5525 | \$11.25     |
| 3101218  | CNMG432M5 VP1510      | VP1510 | 11.50       |
| 3101219  | CNMG432M5 VP5515      | VP5515 | 11.25       |
| 3101220  | CNMG432M5 VP5525      | VP5525 | 11.25       |
| 3101221  | CNMG432M5 VP8535      | VP8535 | 11.25       |
| 3101222  | CNMG432R3 VP1510      | VP1510 | 11.50       |
| 3101224  | CNMG432R3 VP5525      | VP5525 | 11.25       |
| 3101245  | DNMG431M5 VP5525      | VP5525 | 17.05       |
| 3101249  | DNMG432M5 VP1510      | VP1510 | 17.45       |
| 3101251  | DNMG432M5 VP5525      | VP5525 | 17.05       |
| 3101298  | TNMG432M5 VP5525      | VP5525 | 13.49       |
| 3101308  | VNMG332M5 VP5525      | VP5525 | 18.49       |
| 3101319  | WNMG432M5 VP5525      | VP5525 | 12.25       |
| 3101322  | WNMG432R3 VP5525      | VP5525 | 12.25       |
| 3101820  | CNMG432M8 VP5515      | VP5515 | 11.25       |
| 3101821  | CNMG432M8 VP5525      | VP5525 | 11.25       |
| 3101823  | CNMG432R4 VP5525      | VP5525 | 11.25       |
| 3101834  | DNMG432M8 VP5525      | VP5525 | 17.05       |
| 3101863  | TNMG432M8 VP5525      | VP5525 | 13.49       |
| 3101916  | CNMG432M5 VP5535      | VP5535 | 11.25       |
| 3101920  | DNMG432M5 VP5535      | VP5535 | 17.05       |
| 3101930  | TNMG322M5 VP5535      | VP5535 | 9.75        |
| 3101969  | CNMA432 VP1505        | VP1505 | 11.05       |
| 3101200  | CNMA432 VP1510        | VP1510 | 10.50       |
| 3106555  | TNMG322M5 VP5525      | VP5525 | 9.75        |
| 3107153  | TNMG432M5 VP5535      | VP5535 | 13.50       |
| 3106322  | TNGA2522150/ - Insert | VC35M  | 11.50       |
| 3102003  | CNMP432C5 VP5525      | VP5525 | 13.25       |

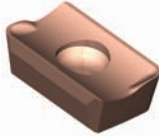
The : symbol after a price denotes that it is a Direct Ship Product (DSP) and shipping, availability & lead times may vary.

# BORING TOOLS

## Boring Tools Cont.

# Valenite®

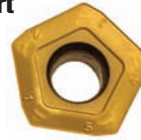
### Positive Carbide Inserts



| Materials   | Valenite Grade | Coating  |
|---|----------------|----------|
| Cast Iron & Ductile Iron  | VP1510         | MTCVD    |
| Carbon & Alloy Steels   | VP5515         | MTCVD    |
| Carbon, Alloy Steels & Stainless Steels                         | VP5525         | MTCVD    |
| Stainless Steels  | VP8535         | MTCVD    |
| Ductile Cast Iron & Steels                                      | VP1505         | MTCVD    |
| Carbon, Alloy Steels & Stainless Steels                         | VP5535         | MTCVD    |
| Cast Irons, Non-Ferrous Alloys                                  | VPUK20         | UNCOATED |
| Steels, Stainless Steels, High Temp Alloys & Non-Ferrous Alloys | VP9610         | PVD      |
| Steel & Stainless Steels  | VPUP30         | UNCOATED |
| Carbon, Alloy, Stainless Steel, Cast Iron & Aluminum            | VP5020         | PVD      |
| Steel & Stainless Steels  | VP5045         | PVD      |

| Part No. | Description             | Grade  | Price /Each |
|----------|-------------------------|--------|-------------|
| 3106901  | AP070204ER11 VP5020 11° | VP5020 | \$13.25     |
| 3106903  | AP070204ER81 VP5020 11° | VP5020 | 13.25       |
| 3106905  | AP070204FR11 VPUK20 11° | VPUK20 | 10.85       |
| 3104264  | CCGT3252PM2 VP9610      | VC929  | 17.90       |
| 3101335  | CCMT3251PM3 VP5525 7°   | VP5525 | 12.54       |
| 3101337  | CCMT3252PM3 VP5525 7°   | VP5525 | 12.54       |
| 3101338  | CCMT3252PM4 VP5525 7°   | VP5525 | 12.54       |
| 3104357  | CPEW3252PDJR VP1020     | VC902  | 16.35       |
| 3101874  | CPGT2151PM2 VP5515 11°  | VP5515 | 15.94       |
| 3101875  | CPGT2151PM2 VP5525 11°  | VP5525 | 15.94       |
| 3104283  | CPGT2151PM2 VP9610      | VC929  | 16.45       |
| 3104288  | CPGT3251PM2 VP9610      | VC929  | 18.10       |
| 3106985  | CPGT3251PM2 VP5525 11°  | VP5525 | 17.55       |
| 3106987  | CPGT3252PM2 VP5515 11°  | VP5515 | 17.55       |
| 3101876  | CPGT3252PM2 VP5525 11°  | VP5525 | 17.55       |
| 3104290  | DPGT2151PM2 VP1020      | VC929  | 18.10       |
| 3104306  | DPGT2151PM2 VP9610      | VC929  | 16.45       |
| 3107004  | DPGT3251PM2 VP1510 11°  | VP1510 | 16.95       |
| 3107005  | DPGT3251PM2 VP5515 11°  | VP5515 | 16.95       |
| 3101681  | SPG422 VPUK20           | VC2    | 15.30       |
| 3105904  | TPG321 VPUK20           | VC2    | 12.80       |
| 3105905  | TPG321 VPUK30           | VC5    | 12.80       |
| 3105909  | TPG322 VPUK20           | VC2    | 12.80       |
| 3105911  | TPG322 VPUK30           | VC5    | 12.80       |
| 3106816  | TPG322 VP1510 11°       | VP1510 | 15.50       |
| 3107032  | TPGT2151PM2 VP5515 11°  | VP5515 | 14.70       |
| 3101882  | TPGT3252PM2 VP5525 11°  | VP5525 | 17.65       |
| 3103357  | XPHT160408AL VPUK20 11° | VPUK20 | 14.00       |
| 3103356  | XPHT160408 VP5142 11°   | VP5142 | 15.40       |
| 3103380  | XPHT160412 VP5142 11°   | VP5142 | 15.40       |
| 3102320  | CCMT3252PM4 VP1510 7°   | VP1510 | 12.95       |
| 3102324  | CCMT432PM4 VP5525 7°    | VP5525 | 13.90       |

## Milling Carbide Insert



| Materials                                  | Valenite Grade | Coating  |
|--|----------------|----------|
| Carbon & Alloy Steels                      | VP5020         | PVD      |
| Cast Irons, Non-Ferrous Alloys             | VPUK20         | UNCOATED |
| Steel, Stainless Steels & High Temp Alloys | VP5040         | PVD      |
| Steels & Stainless Steels                  | VP5135         | MTCVD    |
| Cast Iron & Ductile Iron                   | VP1020         | PVD      |
| Cast Iron & Ductile Iron                   | VP1120         | MTCVD    |

| Part No. | Description                | Grade  | Price /Each |
|----------|----------------------------|--------|-------------|
| 3102707  | PDKT0905DEER11 VP5020 V555 | VP5020 | \$13.30     |
| 3102708  | PDKT0905DEER41 VP5020 V555 | VP5020 | 13.30       |
| 3102709  | PDKT0905DEER41 VP5040 V555 | VP5040 | 13.30       |
| 3102710  | PDKT0905DEER41 VP5135 V555 | VP5135 | 13.30       |
| 3102711  | PDKT0905DEFR11 VPUK20 V555 | VPUK20 | 10.75       |
| 3102712  | PDMT0905DESR81 VP5020 V555 | VP5020 | 11.85       |
| 3102713  | PDMT0905DESR81 VP5135 V555 | VP5135 | 11.85       |
| 3102714  | AP130404ER31 VP5020 V590   | VP5020 | 14.45       |
| 3102717  | AP130412ER31 VP5040 V590   | VP5040 | 14.45       |
| 3102720  | AP130416ER31 VP5020 V590   | VP5020 | 14.45       |
| 3102722  | AP130416FR31 VPUK20 V590   | VPUK20 | 11.85       |
| 3102723  | AP130424ERC31 VP5020 V590  | VP5020 | 14.45       |
| 3103350  | SNKT43531 VP5142 V066      | VP5142 | 15.20       |
| 3103351  | SNMT43531 VP5142 V066      | VP5142 | 12.70       |
| 3104394  | SEET42AFER VP1020          | VP902  | 14.35       |
| 3105729  | SD322D VPUK20              | VC2    | 14.35       |
| 3105731  | SD322P VPUK20              | VC2    | 14.35       |
| 3105735  | SD422P VPUK20              | VC2    | 16.15       |
| 3105738  | SD532P VPUK20              | VC2    | 21.55       |
| 3105753  | SECW25151 VPUK20           | VC2    | 14.80       |
| 3105830  | SPMW2522 VPUK20            | VC2    | 8.45        |
| 3106607  | SDMT150608EN21 VP5020 V490 | VP5020 | 15.75       |
| 3106608  | SDMT150608EN21 VP5040 V490 | VP5040 | 15.75       |
| 3106609  | SDMT150608EN21 VP5135 V490 | VP5135 | 15.75       |
| 3106610  | SDMT150608SN81 VP5020 V490 | VP5020 | 15.75       |
| 3106611  | SDMT150608SN81 VP5040 V490 | VP5040 | 15.75       |
| 3106612  | SDMT150608SN81 VP5135 V490 | VP5135 | 15.75       |

| Part No. | Description                         | Grade  | Price /Each |
|----------|-------------------------------------|--------|-------------|
| 3106613  | AP100304ER81 VP5020 V590            | VP5020 | \$13.90     |
| 3106614  | AP100308ER31 VP5020 V590            | VP5020 | 13.90       |
| 3106615  | AP100308ER81 VP5020 V590            | VP5020 | 13.90       |
| 3106616  | AP130408ER31 VP5020 V590            | VP5020 | 14.45       |
| 3106617  | AP130408ER81 VP5020 V590            | VP5020 | 14.45       |
| 3106619  | AP100308ER81 VP5040 V590            | VP5040 | 13.90       |
| 3106620  | AP130408ER31 VP5040 V590            | VP5040 | 14.45       |
| 3106621  | AP130408ER81 VP5040 V590            | VP5040 | 14.45       |
| 3106622  | AP130408ER81 VP5135 V590            | VP5135 | 14.45       |
| 3106624  | AP100304FR11 VPUK20 V590            | VPUK20 | 11.35       |
| 3106625  | AP130408FR11 VPUK20 V590            | VPUK20 | 11.85       |
| 3106803  | AP130412ER31 VP6020 V590            | VP6020 | 14.45       |
| 3107067  | AP160608ER31 VP5020 V590            | VP5020 | 15.05       |
| 3107068  | AP160608ER31 VP5040 V590            | VP5040 | 15.05       |
| 3107069  | AP160608ER81 VP1120 V590            | VP1120 | 15.05       |
| 3107070  | AP160608ER81 VP5020 V590            | VP5020 | 15.05       |
| 3107071  | AP160608ER81 VP5040 V590            | VP5040 | 15.05       |
| 3107072  | AP160608ER81 VP5135 V590            | VP5135 | 15.05       |
| 3106868  | PDKT0905DEER11 VP1120 VALPRO Insert | VP1120 | 15.50       |
| 3106869  | PDKT0905DEER41 VP1120 VALPRO Insert | VP1120 | 15.50       |
| 3106870  | PDMT0905DESR81 VP1120 VALPRO Insert | VP1120 | 14.45       |
| 3106879  | SDMT150608EN21 VP1120 VALPRO Insert | VP1120 | 17.40       |
| 3106880  | SDMT150608SN81 VP1120 VALPRO Insert | VP1120 | 17.40       |



**We Never Stop...**  
 Providing the Best  
 Technology in  
 Cutting Tools

## Boring Tools Cont. Valenite® Centre Dex End Mills



End mills are used for a wide range of applications including: Plumbing, side-cutting, slotting, counterboring, spot-facing, peripheral milling and profiling.

| Part No. | Description      | Shank Dia. | Length | Style              | Price   |
|----------|------------------|------------|--------|--------------------|---------|
| 3108396  | SVMSPO48R90CCC   | 0.500      | 2.88   | Center Cutting     | \$83.50 |
| 3108397  | SVMSPO60R90CCC   | 0.625      | 3.31   | Center Cutting     | 85.00   |
| 3108398  | SVMSPO73AR90CCC  | 0.750      | 3.06   | Center Cutting     | 87.50   |
| 3108399  | SVMSPO73AR90CCEC | 0.750      | 4.24   | Center Cutting     | 127.00  |
| 3108401  | SVMSPO98R90CCC   | 0.750      | 3.31   | Center Cutting     | 92.50   |
| 3108402  | SVMSPI00R90CCC   | 0.750      | 3.31   | Center Cutting     | 101.00  |
| 3108403  | SVMSPI00R90CCEC  | 1.000      | 5.12   | Center Cutting     | 139.50  |
| 3108404  | SVMSPI112R90CCC  | 0.750      | 3.31   | Center Cutting     | 107.50  |
| 3108406  | SVMSPI125R90CCC  | 1.250      | 3.82   | Center Cutting     | 115.50  |
| 3108407  | SVMSPI125R90CCEC | 1.250      | 5.50   | Center Cutting     | 158.50  |
| 3108409  | SVMSPI150R90CCC  | 1.250      | 3.82   | Center Cutting     | 127.00  |
| 3108410  | SVMSPI150R90CCEC | 1.250      | 5.50   | Center Cutting     | 174.00  |
| 3108414  | SVMSPI200R90CCEC | 1.250      | 5.50   | Center Cutting     | 201.00  |
| 3108421  | SVMSPO81R45      | 0.750      | 3.06   | Non-Center Cutting | 82.00   |
| 3108422  | SVMSPI00R45CF    | 0.500      | 2.94   | Non-Center Cutting | 114.50  |
| 3108424  | SVMSPI125R60CF   | 0.750      | 3.50   | Non-Center Cutting | 117.50  |
| 3108425  | SVMSPI138R45CF   | 0.750      | 3.50   | Non-Center Cutting | 119.50  |

| Part No. | Description    | Diameter | Length | Price    |
|----------|----------------|----------|--------|----------|
| 3112903  | SVMSPI125R45CF | 1.250    | 2.96   | \$117.50 |
| 3112904  | SVMSPI138R30CF | 1.380    | 3.47   | 119.50   |
| 3112905  | SVMSPI150R45CF | 1.500    | 3.50   | 123.00   |
| 3112906  | SVMSPI200R45CF | 2.000    | 3.94   | 174.50   |

## V555 Face Mill

The most effective solution for general purpose milling applications. This cutter offers: higher productivity on low horsepower machines, pentagonal shaped inserts.

| Part No. | Description          | Diameter | Arbor Size | Height | Type      | Price    |
|----------|----------------------|----------|------------|--------|-----------|----------|
| 3110691  | V555A090200G04R V555 | 2.35     | .750       | 1.50   | Face Mill | \$301.00 |
| 3110693  | V555A090300H06R V555 | 3.35     | 1.000      | 2.00   | Face Mill | 407.00   |
| 3110694  | V555A090400K07R V555 | 4.35     | 1.500      | 2.00   | Face Mill | 496.00   |

## V590 Series Square Shoulder Mills

Designed to generate a true 90° square shoulder on most difficult-to-machine materials, eliminating secondary operations. Ideal for ramping and helical interpolation. Positive top-form geometry inert create lower cutting forces at higher feed rates.



| Part No. | Description          | Diameter | Arbor Size | Type      | Price    |
|----------|----------------------|----------|------------|-----------|----------|
| 3113149  | V490A150200G04R V490 | 2.00     | 0.750      | Face Mill | \$338.00 |
| 3113150  | V490A150250G05R V490 | 2.50     | 0.750      | Face Mill | 446.00   |
| 3113151  | V490A150300H06R V490 | 3.00     | 1.000      | Face Mill | 512.00   |
| 3113152  | V490A150400K08R V490 | 4.00     | 1.500      | Face Mill | 606.00   |
| 3113153  | V490A150500K09R V490 | 5.00     | 1.500      | Face Mill | 749.00   |
| 3113154  | V490A150600K10R V490 | 6.00     | 1.500      | Face Mill | 891.00   |
| 3113185  | V590A10062WB09 V590  | 0.625    | 0.625      | End Mill  | 160.00   |
| 3113186  | V590A10075WC15 V590  | 0.750    | 0.750      | End Mill  | 197.50   |
| 3113187  | V590A10100WD17 V590  | 1.000    | 1.000      | End Mill  | 237.00   |
| 3113189  | V590A130200G06R V590 | 2.00     | 0.750      | Face Mill | 289.00   |
| 3113190  | V590A130250G07R V590 | 2.50     | 0.750      | Face Mill | 376.00   |
| 3113191  | V590A130300H09R V590 | 3.00     | 1.000      | Face Mill | 490.00   |
| 3113193  | V590A13100WD17 V590  | 1.00     | 1.000      | End mill  | 212.00   |
| 3113194  | V590A13125WE17 V590  | 1.250    | 1.250      | End Mill  | 246.50   |
| 3113195  | V590A13150W E21 V590 | 1.500    | 1.250      | End Mill  | 267.00   |
| 3113285  | V590A07038WA10 V590  | 0.375    | 0.500      | End Mill  | 119.50   |
| 3113347  | V590A07050WB10 V590  | 0.500    | 0.625      | End Mill  | 151.00   |
| 3113389  | V590A160200G05R V590 | 2.000    | 0.750      | Face Mill | 354.00   |
| 3113393  | V590A160300H07R V590 | 3.000    | 1.000      | Face Mill | 510.00   |
| 3113398  | V590A16100CD35 V590  | 1.000    | 1.000      | End Mill  | 292.00   |
| 3113402  | V590A16100WD17 V590  | 1.000    | 1.000      | End Mill  | 254.00   |
| 3113403  | V590A16100WD35 V590  | 1.000    | 1.000      | End Mill  | 272.00   |
| 3113407  | V590A16125WE22 V590  | 1.250    | 1.250      | End Mill  | 280.00   |
| 3113408  | V590A16125WE40 V590  | 1.250    | 1.250      | End Mill  | 301.00   |
| 3113409  | V590A16150CF45 V590  | 1.500    | 1.500      | End Mill  | 345.00   |
| 3113412  | V590A16150W E22 V590 | 1.500    | 1.250      | End Mill  | 301.00   |

The : symbol after a price denotes that it is a Direct Ship Product (DSP) and shipping, availability & lead times may vary.

## ValDrill Inch Drills

The drill creates consistent on-size holes and also provides the operator with an easy way to check the drilling diameter without interfering with the setup. A single type of insert can be used in both inboard and outboard



| Materials                       | Valenite Grade | Coating |
|---------------------------------|----------------|---------|
| Stainless Steels & Steel Alloys | VP8335         | MTCVD   |

| Part No. | Description                  | Diameter | Shank | Length | Material               | Price    |
|----------|------------------------------|----------|-------|--------|------------------------|----------|
| 3113418  | VD100A3H0500L06R Steel Drill | 0.500    | 0.750 | 4.685  | Steel, Coolant Through | \$296.00 |
| 3113435  | VD100A3H0531L06R Steel Drill | 0.531    | 0.750 | 4.764  | Steel, Coolant Through | 296.00   |
| 3113437  | VD100A3H0594L06R Steel Drill | 0.594    | 0.750 | 4.882  | Steel, Coolant Through | 348.00   |
| 3113438  | VD100A3H0625L06R Steel Drill | 0.625    | 0.750 | 4.961  | Steel, Coolant Through | 348.00   |
| 3113448  | VD100A3H1000L10R Steel Drill | 1.000    | 1.250 | 6.575  | Steel, Coolant Through | 359.00   |
| 3113453  | VD100A3H1156L12R Steel Drill | 1.156    | 1.500 | 7.441  | Steel, Coolant Through | 359.00   |

## ValDrill Inserts

The drill creates consistent on-size holes and also provides the operator with an easy way to check the drilling diameter without interfering with the setup. A single type of insert can be used in both inboard and outboard positions. A step on the drill body indicates the maximum drilling depth.



| Part No. | Description           | Grade  | Price   |
|----------|-----------------------|--------|---------|
| 3107095  | LCMT040205EN57 VP8335 | VP8335 | \$10.95 |
| 3107100  | XPMT09T308 EN57       | VP8335 | 13.65   |

VP8335 is a carbide grade with CVD TiCN/Tin Coating. It is designed for continuous and interrupted cutting in steels and stainless steels.

## ProGrip Tool Holders

Greater stability for higher feed rates without vibration. Greater accuracy - reliable clamping helps maintain close tolerance. More secure clamp grips the insert in two



| Part No. | Description | Length | Height | Width  | Handle Type | Price   |
|----------|-------------|--------|--------|--------|-------------|---------|
| 3102067  | DTFNL164D   | 6.00   | 1.00"  | 1.00"  | Left        | \$86.64 |
| 3102075  | DTJNR123B   | 4.50"  | 0.750" | 0.750" | Right       | 80.85   |
| 3112976  | DKNKL164D   | 6.00"  | 1.00"  | 1.00"  | Left        | 86.10   |
| 3112977  | DKNKR164D   | 6.00"  | 1.00"  | 1.00"  | Right       | 86.10   |
| 3112978  | DCLNL124B   | 4.50"  | 0.750" | 0.750" | Left        | 81.50   |
| 3112979  | DCLNL164C   | 5.00"  | 1.00"  | 1.00"  | Left        | 86.10   |
| 3112980  | DCLNL164D   | 6.00"  | 1.00"  | 1.00"  | Left        | 86.10   |
| 3112981  | DCLNL165D   | 6.00"  | 1.00"  | 1.00"  | Left        | 86.10   |
| 3112988  | DCLNR124Br  | 6.00"  | 0.750" | 0.750" | Right       | 81.50   |
| 3112989  | DCLNR164C   | 5.00"  | 1.00"  | 1.00"  | Right       | 86.10   |
| 3112990  | DCLNR164D   | 6.00"  | 1.00"  | 1.00"  | Right       | 86.10   |
| 3112993  | DCLNR204D   | 6.00"  | 1.250" | 1.250" | Right       | 115.90  |
| 3112994  | DCLNR205D   | 6.00"  | 1.250" | 1.250" | Right       | 115.90  |
| 3112998  | DCRNL164D   | 6.00"  | 1.00"  | 1.00"  | Left        | 86.10   |
| 3113003  | DCRNR164D   | 6.00"  | 1.00"  | 1.00"  | Right       | 86.10   |
| 3113008  | DDJNL124B   | 4.50"  | 0.750" | 0.750" | Left        | 90.10   |
| 3113011  | DDJNL164D   | 6.00"  | 1.00"  | 1.00"  | Left        | 95.15   |
| 3113013  | DDJNR124B   | 4.50"  | 0.750" | 0.750" | Right       | 90.10   |
| 3113015  | DDJNR164C   | 5.00"  | 1.00"  | 1.00"  | Right       | 95.15   |
| 3113016  | DDJNR164D   | 6.00"  | 1.00"  | 1.00"  | Right       | 95.15   |
| 3113020  | DDQNR164D   | 6.00"  | 1.00"  | 1.00"  | Right       | 95.15   |
| 3113023  | DSDNN164D   | 6.00   | 1.00"  | 1.00"  | Neutral     | 86.10   |
| 3113042  | DSSNR164D   | 6.00   | 1.00"  | 1.00"  | Right       | 86.10   |
| 3113045  | DTFNR123B   | 4.50"  | 0.750" | 0.750" | Right       | 81.50   |
| 3113048  | DTGNR123B   | 4.50"  | 0.750" | 0.750" | Right       | 81.50   |
| 3113059  | DWLNR163D   | 6.00   | 1.00"  | 1.00"  | Right       | 83.80   |
| 3113060  | DWLNR164D   | 6.00   | 1.00"  | 1.00"  | Right       | 83.80   |



# BORING TOOLS

## Boring Tools Cont.

# Valenite®

### ProGrip Boring Bars

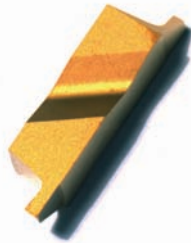
Greater stability for higher feed rates without vibration. Greater accuracy with reliable clamping which helps maintain close tolerance. More secure clamp which grips the insert in two directions.



| Part No. | Description | Length | Height | Width | Handle Type | Price    |
|----------|-------------|--------|--------|-------|-------------|----------|
| 3113295  | A16TDCLNL4  | 1"     | 1"     | 1"    | Left        | \$295.00 |
| 3113306  | A20UDCLNL4  | 1.25"  | 1.25"  | 1.25" | Left        | 343.00   |
| 3113311  | A20UDDUNR4  | 1.25"  | 1.25"  | 1.25" | Right       | 308.00   |
| 3113316  | A24VDCLNL4  | 1.5"   | 1.5"   | 1.5"  | Left        | 343.00   |
| 3113318  | A24VDCLNR4  | 1.5"   | 1.5"   | 1.5"  | Right       | 343.00   |

### Valgroove Carbide Inserts

| Materials  | Valenite Grade | Coating  |
|--|----------------|----------|
| Steel & Cast Iron  | VP5735         | MTCVD    |
| Steels, Stainless Steels, High Temp Alloys & Non-Ferrous       | VP5820         | PVD      |
| Steels, Stainless Steels, High Temp Alloys, Non-Ferrous & Iron | VP5810         | PVD      |
| Cast Iron & Non Ferrous Alloys                                 | VPUK20         | UNCOATED |
| Steel & Stainless Steels                                       | VP5845         | PVD      |



| Part No. | Description        | Grade  | Price   |
|----------|--------------------|--------|---------|
| 3101420  | VSG25N25GG         | VP5735 | \$13.05 |
| 3101422  | VSG30N30GG         | VP5735 | 14.10   |
| 3101423  | VSG30R530GG        | VP5735 | 14.10   |
| 3101427  | VSG40N40GG         | VP5735 | 14.85   |
| 3101436  | VSG25N25GG         | VP5820 | 13.05   |
| 3101438  | VSG30N30GG         | VP5820 | 14.10   |
| 3101439  | VSG30R530GG        | VP5820 | 14.10   |
| 3101441  | VSG40N40GG         | VP5820 | 14.85   |
| 3101460  | VTG30N30GG         | VP5820 | 20.94   |
| 3101463  | VTG40N40GG         | VP5820 | 22.20   |
| 3101517  | VSG30N30FG         | VP5820 | 14.10   |
| 3104449  | VLG3047R VP5810    | VC929  | 18.80   |
| 3104465  | VLG3125R VP5810    | VC929  | 18.80   |
| 3106044  | VDB125RA VPUK20    | VC2    | 20.75   |
| 3106055  | VDB188RA VPUK20    | VC2    | 21.40   |
| 3106060  | VDB375B015 VPUK20  | VC2    | 31.75   |
| 3106383  | VDB125A015 VPUK20  | VC2    | 20.35   |
| 3106387  | VDB125A015C VPUK20 | VC2    | 21.40   |
| 3106395  | VDB250RA VP5845    | VC2    | 26.15   |
| 3106400  | VDB375RB           | VC2    | 29.15   |

### Valgroove Steel Blades



| Part No. | Description | Price |
|----------|-------------|-------|
| 3102056  | VG1012120   | 94.00 |
| 3102057  | VG1012125   | 94.00 |
| 3102058  | VG1012130   | 94.00 |
| 3102059  | VG1012140   | 94.00 |

### Val Groove Tool Holders

The Val Groove system is available for parting, grooving, undercutting and profiling. A total system, combining our flexible tool holder family with super tough one and two edge inserts.



| Part No. | Description | Length | Blade Size | Width          | Max. Depth of Cut | Handle Type | Price   |
|----------|-------------|--------|------------|----------------|-------------------|-------------|---------|
| 3111357  | VG1011620   | 3.38   | 0.750      | 0.073 to 0.088 | 1.500             | Natural     | \$94.00 |
| 3111358  | VG1012115   | 4.33   | 1.020      | 0.059          | 0.750             | Natural     | 94.00   |
| 3111360  | VG1012525   | 5.91   | 1.260      | 0.098 to 0.133 | 2.362             | Natural     | 105.50  |
| 3111361  | VG1012530   | 5.91   | 1.260      | 0.098 to 0.133 | 2.362             | Natural     | 105.50  |
| 3111362  | VG1012540   | 5.91   | 1.260      | 0.156 to 0.203 | 2.362             | Natural     | 105.50  |
| 3111364  | VG1012560   | 5.91   | 1.260      | 0.236 to 0.315 | 2.362             | Natural     | 105.50  |
| 3111378  | VG111L1630  | 5.00   | 1.000      | 1.000          | 0.400             | Left        | 131.00  |
| 3111379  | VG111L1640  | 5.00   | 1.000      | 1.000          | 0.510             | Left        | 131.00  |
| 3111385  | VG111R1630  | 5.00   | 1.000      | 1.000          | 0.400             | Right       | 131.00  |
| 3111386  | VG111R1640  | 5.00   | 1.000      | 1.000          | 0.510             | Right       | 131.00  |
| 3111448  | VG111B1221  | 3.15   | 1.02       | 1.46           | NA                | Natural     | 235.50  |
| 3111449  | VG111B1621  | 4.72   | 1.02       | 1.70           | NA                | Natural     | 247.00  |
| 3111450  | VG111B1625  | 4.72   | 1.26       | 1.71           | NA                | Natural     | 247.00  |
| 3111532  | VG109L1230  | 5.00   | 0.750      | 0.750          | 0.790             | Left        | 132.00  |
| 3111534  | VG109L1630  | 6.00   | 1.000      | 1.000          | 0.790             | Left        | 139.50  |
| 3111535  | VG109L1640  | 6.00   | 1.000      | 1.000          | 0.980             | Left        | 139.50  |
| 3111536  | VG109L1650  | 6.00   | 1.000      | 1.000          | 1.260             | Left        | 139.50  |
| 3111546  | VG109R1230  | 5.00   | 0.750      | 0.750          | 0.790             | Right       | 132.00  |
| 3111548  | VG109R1630  | 6.00   | 1.000      | 1.000          | 0.790             | Right       | 139.50  |
| 3111549  | VG109R1640  | 6.00   | 1.000      | 1.000          | 0.980             | Right       | 139.50  |
| 3111550  | VG109R1650  | 6.00   | 1.000      | 1.000          | 1.260             | Right       | 139.50  |

### V-Loc Top Clamping System

The V-loc system combines the strength and simplicity of on-edge tooling with a high precision clamping system, versatile toolholder and insert geometries to produce a threading and grooving system that delivers a new level of productivity.

| Part No. | Description | Length | Height | Width | Angle    | Handle Type | Price   |
|----------|-------------|--------|--------|-------|----------|-------------|---------|
| 3111675  | VLSL123B    | 4.50   | 0.750  | 0.750 | 3 degree | Left        | \$84.00 |
| 3111678  | VLSL163D    | 5.00   | 1.00   | 1.00  | 3 degree | Left        | 84.75   |
| 3111683  | VLSR123B    | 4.50   | 0.750  | 0.750 | 3 degree | Right       | 84.00   |
| 3111686  | VLSR163D    | 5.00   | 1.00   | 1.00  | 3 degree | Right       | 84.75   |

### Econ-O-Groove

The Econ-O-Groove system features an integral clamp construction which is strong and versatile, and uses relatively few components.

| Part No. | Description   | Length | Height | Width          | Handle Type | Price    |
|----------|---------------|--------|--------|----------------|-------------|----------|
| 3111698  | A16VLEL3      | 12"    | 1"     | 1"             | Left        | \$220.50 |
| 3111700  | A16VLER3      | 12"    | 1"     | 1"             | Right       | 220.50   |
| 3112771  | VDBS16        | 6.00   | 1.00   | 1.00           | Natural     | 76.25    |
| 3112780  | VHDBS16R      | 6.00   | 1.00   | 1.00           | Natural     | 63.50    |
| 3112791  | VDBA125188LA  | 1.720  | 2.00   | 0.125 to 0.188 | Left        | 70.25    |
| 3112792  | VDBA125188RA  | 1.720  | 2.00   | 0.125 to 0.188 | Right       | 70.25    |
| 3112793  | VDBA188218LA  | 1.720  | 2.00   | 0.188 to 0.250 | Left        | 70.25    |
| 3112794  | VDBA188218RA  | 1.720  | 2.00   | 0.188 to 0.250 | Right       | 70.25    |
| 3112855  | VHDBA125188LA | 2.12   | 1.25   | 0.125 to 0.188 | Left        | 77.75    |
| 3112856  | VHDBA125188RA | 2.12   | 1.25   | 0.125 to 0.188 | Right       | 77.75    |
| 3112857  | VHDBA188250LA | 2.12   | 1.25   | 0.188 to 0.250 | Left        | 77.75    |
| 3112858  | VHDBA188250RA | 2.12   | 1.25   | 0.188 to 0.250 | Right       | 77.75    |
| 3112859  | VHDBA250375LB | 2.12   | 1.25   | 0.250 to 0.375 | Left        | 77.75    |
| 3112860  | VHDBA250375RB | 2.12   | 1.25   | 0.250 to 0.375 | Right       | 77.75    |

# INDEXABLE BORING BARS AND INSERTS

## Indexable Boring Bars and Inserts



### Indexable Boring Bars

#### A Series-CDGD Style

- 5° angle for facing and through hole boring
- 0° for through hole boring and boring to shoulder
- Metric tool sizes available



| Part No.                | Vendor No. | Angle | Diameter | Shank Dia. | Bore  | Length | Overall Lgth. | Price /Each |
|-------------------------|------------|-------|----------|------------|-------|--------|---------------|-------------|
| <b>Steel Bars</b>       |            |       |          |            |       |        |               |             |
| 0323523                 | SA1000     | 7     | 0.165    | .187       | 0.18  | 0      | 2.5           | \$116.48    |
| 0323524                 | SA1005     | 5     | 0.18     | .187       | 0.208 | 0      | 2.5           | 116.48      |
| 0323525                 | SA1010     | 5     | 0.187    | .187       | 0.23  | 0      | 2.5           | 116.48      |
| 0323526                 | SA1015     | 0     | 0.187    | .187       | 0.244 | 0      | 2.5           | 116.48      |
| 0323527                 | SA1100     | 5     | 0.25     | .250       | 0.29  | 0      | 3             | 116.48      |
| 0323528                 | SA1105     | 0     | 0.25     | .250       | 0.3   | 0      | 3             | 116.48      |
| <b>Carbide Bars</b>     |            |       |          |            |       |        |               |             |
| 0323529                 | CA1200     | 7     | 0.165    | .156       | 0.18  | 0      | 4             | 300.30      |
| 0323530                 | CA1205     | 5     | 0.18     | .187       | 0.208 | 0      | 4             | 280.28      |
| 0323531                 | CA1215     | 5     | 0.187    | .187       | 0.23  | 0      | 4             | 280.28      |
| 0323532                 | CA1220     | 0     | 0.187    | .187       | 0.244 | 0      | 4             | 280.28      |
| 0323533                 | CA1300     | 5     | 0.25     | .250       | 0.29  | 0      | 4             | 280.28      |
| 0323534                 | CA1305     | 0     | 0.25     | .250       | 0.3   | 0      | 4             | 280.28      |
| <b>Heavy Metal Bars</b> |            |       |          |            |       |        |               |             |
| 0323535                 | HA1205     | 5     | 0.18     | .187       | 0.208 | 0      | 4             | 174.72      |
| 0323536                 | HA1215     | 5     | 0.187    | .187       | 0.23  | 0      | 4             | 174.72      |
| 0323537                 | HA1220     | 0     | 0.187    | .187       | 0.244 | 0      | 4             | 174.72      |
| 0323538                 | HA1300     | 5     | 0.25     | .250       | 0.29  | 0      | 4             | 187.46      |
| 0323539                 | HA1305     | 0     | 0.25     | .250       | 0.3   | 0      | 4             | 187.46      |

#### B Series Boring Bars



| Part No.                | Vendor No. | Angle | Diameter | Shank Dia. | Bore | Length | Overall Lgth. | Price /Each |
|-------------------------|------------|-------|----------|------------|------|--------|---------------|-------------|
| <b>Steel Bars</b>       |            |       |          |            |      |        |               |             |
| 0323540                 | SB1800     | 5     | 0.187    | .187       | 0.27 | 0      | 3.5           | \$107.38    |
| 0323541                 | SB1805     | 0     | 0.187    | .187       | 0.27 | 0      | 3.5           | 107.38      |
| 0323542                 | SB2000     | 5     | 0.25     | .250       | 0.3  | 0      | 4             | 107.38      |
| 0323543                 | SB2005     | 0     | 0.25     | .250       | 0.3  | 0      | 4             | 107.38      |
| 0323544                 | SB2100     | 5     | 0.312    | .312       | 0.36 | 0      | 4             | 107.38      |
| 0323545                 | SB2105     | 0     | 0.312    | .312       | 0.36 | 0      | 4             | 107.38      |
| <b>Carbide Bars</b>     |            |       |          |            |      |        |               |             |
| 0323546                 | CB1900     | 5     | 0.187    | .187       | 0.27 | 0      | 4             | 263.90      |
| 0323547                 | CB1905     | 0     | 0.187    | .187       | 0.27 | 0      | 4             | 263.90      |
| 0323548                 | CB2200     | 5     | 0.25     | .250       | 0.3  | 0      | 4             | 263.90      |
| 0323549                 | CB2205     | 0     | 0.25     | .250       | 0.3  | 0      | 4             | 263.90      |
| 0323550                 | CB2300     | 5     | 0.312    | .312       | 0.36 | 0      | 4             | 263.90      |
| 0323551                 | CB2305     | 0     | 0.312    | .312       | 0.36 | 0      | 4             | 263.90      |
| <b>Heavy Metal Bars</b> |            |       |          |            |      |        |               |             |
| 0323552                 | HB1900     | 5     | 0.187    | .187       | 0.27 | 0      | 4             | 174.72      |
| 0323553                 | HB1905     | 0     | 0.187    | .187       | 0.27 | 0      | 4             | 174.72      |
| 0323554                 | HB2200     | 5     | 0.25     | .250       | 0.3  | 0      | 4             | 187.46      |
| 0323555                 | HB2205     | 0     | 0.25     | .250       | 0.3  | 0      | 4             | 187.46      |
| 0323556                 | HB2300     | 5     | 0.312    | .312       | 0.36 | 0      | 4             | 205.66      |
| 0323557                 | HB2305     | 0     | 0.312    | .312       | 0.36 | 0      | 4             | 205.66      |

#### C Series TPGH-2 Style



| Part No.                | Vendor No. | Angle | Diameter | Shank Dia. | Bore  | Length | Overall Lgth. | Price /Each |
|-------------------------|------------|-------|----------|------------|-------|--------|---------------|-------------|
| <b>Steel Bars</b>       |            |       |          |            |       |        |               |             |
| 0323558                 | SC2700     | 5     | 0.375    | .375       | 0.438 | 0      | 5             | \$112.84    |
| 0323559                 | SC2705     | 0     | 0.375    | .375       | 0.438 | 0      | 5             | 112.84      |
| 0323560                 | SC2800     | 5     | 0.5      | .500       | 0.563 | 0      | 6             | 112.84      |
| 0323561                 | SC2805     | 0     | 0.5      | .500       | 0.563 | 0      | 6             | 112.84      |
| <b>Carbide Bars</b>     |            |       |          |            |       |        |               |             |
| 0323562                 | CC2900     | 5     | 0.375    | .375       | 0.438 | 0      | 6             | 311.22      |
| 0323563                 | CC2905     | 0     | 0.375    | .375       | 0.438 | 0      | 6             | 311.22      |
| 0323564                 | CC3000     | 5     | 0.5      | .500       | 0.563 | 0      | 8             | 230.00      |
| 0323565                 | CC3005     | 0     | 0.5      | .500       | 0.563 | 0      | 8             | 409.50      |
| <b>Heavy Metal Bars</b> |            |       |          |            |       |        |               |             |
| 0323566                 | HC2900     | 5     | 0.375    | .375       | 0.438 | 0      | 6             | 222.04      |
| 0323567                 | HC2905     | 0     | 0.375    | .375       | 0.438 | 0      | 6             | 222.04      |
| 0323568                 | HC3000     | 5     | 0.5      | .500       | 0.563 | 0      | 6             | 336.70      |
| 0323569                 | HC3005     | 0     | 0.5      | .500       | 0.563 | 0      | 6             | 336.70      |

#### D Series TPGH-3 Style



| Part No.                | Vendor No. | Angle | Diameter | Shank Dia. | Bore  | Length | Overall Lgth. | Price /Each |
|-------------------------|------------|-------|----------|------------|-------|--------|---------------|-------------|
| <b>Steel Bars</b>       |            |       |          |            |       |        |               |             |
| 0323570                 | SD3500     | 5     | 0.625    | .625       | 0.719 | 0      | 7             | \$123.76    |
| 0323571                 | SD3505     | 0     | 0.625    | .625       | 0.719 | 0      | 7             | 123.76      |
| 0323572                 | SD3600     | 5     | 0.75     | .750       | 0.844 | 0      | 8             | 138.32      |
| 0323573                 | SD3605     | 0     | 0.75     | .750       | 0.844 | 0      | 8             | 138.32      |
| 0323574                 | SD3700     | 5     | 1        | 1.000      | 1.094 | 0      | 10            | 192.92      |
| 0323575                 | SD3705     | 0     | 1        | 1.000      | 1.094 | 0      | 10            | 192.92      |
| 0323576                 | SD3800     | 5     | 1.25     | 1.25       | 1.344 | 0      | 12            | 262.08      |
| 0323577                 | SD3805     | 0     | 1.25     | 1.25       | 1.344 | 0      | 12            | 262.08      |
| <b>Carbide Bars</b>     |            |       |          |            |       |        |               |             |
| 0323578                 | CD3910     | 5     | 0.625    | 0.625      | 0.719 | 0      | 10            | 567.84      |
| 0323579                 | CD3915     | 0     | 0.625    | 0.625      | 0.719 | 0      | 10            | 567.84      |
| 0323580                 | CD4010     | 5     | 0.75     | 0.75       | 0.844 | 0      | 10            | 684.32      |
| 0323581                 | CD4015     | 0     | 0.75     | 0.75       | 0.844 | 0      | 10            | 684.32      |
| 0323582                 | CD4110     | 5     | 1        | 1          | 1.094 | 0      | 12            | 999.18      |
| 0323583                 | CD4115     | 0     | 1        | 1          | 1.094 | 0      | 12            | 999.18      |
| <b>Heavy Metal Bars</b> |            |       |          |            |       |        |               |             |
| 0323584                 | HD3910     | 5     | 0.625    | 0.625      | 0.719 | 0      | 10            | 440.44      |
| 0323585                 | HD3915     | 0     | 0.625    | 0.625      | 0.719 | 0      | 10            | 440.44      |
| 0323586                 | HD4010     | 5     | 0.75     | 0.75       | 0.844 | 0      | 10            | 635.18      |
| 0323587                 | HD4015     | 0     | 0.75     | 0.75       | 0.844 | 0      | 10            | 635.18      |
| 0323588                 | HD4110     | 5     | 1        | 1          | 1.094 | 0      | 12            | 980.98      |
| 0323589                 | HD4115     | 0     | 1        | 1          | 1.094 | 0      | 12            | 980.98      |

#### E Series WCGT-0 Style



| Part No.                | Vendor No. | Angle | Diameter | Shank Dia. | Bore  | Length | Overall Lgth. | Price /Each |
|-------------------------|------------|-------|----------|------------|-------|--------|---------------|-------------|
| <b>Steel Bars</b>       |            |       |          |            |       |        |               |             |
| 0323590                 | SE5010     | 5     | 0.187    |            | 0.23  | 2.5    |               | \$118.30    |
| 0323591                 | SE5015     | 0     | 0.187    |            | 0.244 | 2.5    |               | 118.30      |
| 0323592                 | SE6000     | 5     | 0.25     |            | 0.3   | 4      |               | 118.30      |
| 0323593                 | SE6005     | 0     | 0.25     |            | 0.3   | 4      |               | 118.30      |
| <b>Carbide Bars</b>     |            |       |          |            |       |        |               |             |
| 0323594                 | CE5215     | 5     | 0.187    |            | 0.23  | 4      |               | 298.48      |
| 0323595                 | CE5220     | 0     | 0.187    |            | 0.244 | 4      |               | 298.48      |
| 0323596                 | CE5300     | 5     | 0.25     |            | 0.29  | 4      |               | 298.48      |
| 0323597                 | CE5305     | 0     | 0.25     |            | 0.3   | 4      |               | 298.48      |
| <b>Heavy Metal Bars</b> |            |       |          |            |       |        |               |             |
| 0323598                 | HE5215     | 5     | 0.187    |            | 0.23  | 4      |               | 174.72      |
| 0323599                 | HE5220     | 0     | 0.187    |            | 0.244 | 4      |               | 174.72      |
| 0323600                 | HE5300     | 5     | 0.25     |            | 0.29  | 4      |               | 187.46      |
| 0323601                 | HE5305     | 0     | 0.25     |            | 0.3   | 4      |               | 187.46      |

# INDEXABLE BORING BARS AND INSERTS

## Indexable Boring Bars and Inserts



### F Series WCGT-1 Style



| Part No.                | Vendor No. | Angle | Diameter | Shank Dia. | Bore | Length | Overall Lgth. | Price /Each |
|-------------------------|------------|-------|----------|------------|------|--------|---------------|-------------|
| <b>Steel Bars</b>       |            |       |          |            |      |        |               |             |
| 0323602                 | SF6100     | 5     | 0.312    |            | 0.36 | 4      |               | \$118.30    |
| 0323603                 | SF6105     | 0     | 0.312    |            | 0.36 | 4      |               | 118.30      |
| <b>Carbide Bars</b>     |            |       |          |            |      |        |               |             |
| 0323604                 | CF6300     | 5     | 0.312    |            | 0.36 | 4      |               | 298.48      |
| 0323605                 | CF6305     | 0     | 0.312    |            | 0.36 | 4      |               | 298.48      |
| <b>Heavy Metal Bars</b> |            |       |          |            |      |        |               |             |
| 0323606                 | HF6300     | 5     | 0.312    |            | 0.36 | 4      |               | 205.66      |
| 0323607                 | HF6305     | 0     | 0.312    |            | 0.36 | 4      |               | 205.66      |

### G Series WCGT-2 Style

| Part No.                | Vendor No. | Angle | Diameter | Shank Dia. | Bore  | Length | Overall Lgth. | Price /Each |
|-------------------------|------------|-------|----------|------------|-------|--------|---------------|-------------|
| <b>Steel Bars</b>       |            |       |          |            |       |        |               |             |
| 0323608                 | SG6700     | 5     | 0.375    |            | 0.438 | 5      |               | \$125.58    |
| 0323609                 | SG6705     | 0     | 0.375    |            | 0.438 | 5      |               | 125.58      |
| 0323610                 | SG6800     | 5     | 0.5      |            | 0.563 | 6      |               | 131.04      |
| 0323611                 | SG6805     | 0     | 0.5      |            | 0.563 | 6      |               | 131.04      |
| <b>Carbide Bars</b>     |            |       |          |            |       |        |               |             |
| 0323612                 | CG6900     | 5     | 0.375    |            | 0.438 | 6      |               | 343.98      |
| 0323613                 | CG6905     | 0     | 0.375    |            | 0.438 | 6      |               | 343.98      |
| 0323614                 | CG7000     | 5     | 0.5      |            | 0.563 | 6      |               | 427.70      |
| 0323615                 | CG7005     | 0     | 0.5      |            | 0.563 | 6      |               | 427.70      |
| <b>Heavy Metal Bars</b> |            |       |          |            |       |        |               |             |
| 0323616                 | HG6900     | 5     | 0.375    |            | 0.438 | 6      |               | 222.04      |
| 0323617                 | HG6905     | 0     | 0.375    |            | 0.438 | 6      |               | 222.04      |
| 0323618                 | HG7000     | 5     | 0.5      |            | 0.563 | 6      |               | 336.70      |
| 0323619                 | HG7005     | 0     | 0.5      |            | 0.563 | 6      |               | 336.70      |

### H Series WCGT-3 Style

| Part No.                | Vendor No. | Angle | Diameter | Shank Dia. | Bore  | Length | Overall Lgth. | Price /Each |
|-------------------------|------------|-------|----------|------------|-------|--------|---------------|-------------|
| <b>Steel Bars</b>       |            |       |          |            |       |        |               |             |
| 0323620                 | SH7500     | 5     | 0.625    |            | 0.719 | 7      |               | \$132.86    |
| 0323621                 | SH7505     | 0     | 0.625    |            | 0.719 | 7      |               | 132.86      |
| 0323622                 | SH7600     | 5     | 0.75     |            | 0.844 | 8      |               | 147.42      |
| 0323623                 | SH7605     | 0     | 0.75     |            | 0.844 | 8      |               | 147.42      |
| 0323624                 | SH7700     | 5     | 1        |            | 1.094 | 10     |               | 202.02      |
| 0323625                 | SH7705     | 0     | 1        |            | 1.094 | 10     |               | 202.02      |
| 0323626                 | SH7800     | 5     | 1.25     |            | 1.344 | 12     |               | 271.18      |
| 0323627                 | SH7805     | 0     | 1.25     |            | 1.344 | 12     |               | 271.18      |
| <b>Carbide Bars</b>     |            |       |          |            |       |        |               |             |
| 0323628                 | CH7910     | 5     | 0.625    |            | 0.719 | 10     |               | 595.14      |
| 0323629                 | CH7915     | 0     | 0.625    |            | 0.719 | 10     |               | 595.14      |
| 0323630                 | CH8010     | 5     | 0.75     |            | 0.844 | 10     |               | 711.62      |
| 0323631                 | CH8015     | 0     | 0.75     |            | 0.844 | 10     |               | 711.62      |
| 0323632                 | CH8110     | 5     | 1        |            | 1.094 | 12     |               | 1026.48     |
| 0323633                 | CH8115     | 0     | 1        |            | 1.094 | 12     |               | 1026.48     |
| <b>Heavy Metal Bars</b> |            |       |          |            |       |        |               |             |
| 0323634                 | HH7910     | 5     | 0.625    |            | 0.719 | 10     |               | 440.44      |
| 0323635                 | HH7915     | 0     | 0.625    |            | 0.719 | 10     |               | 440.44      |
| 0323636                 | HH8010     | 5     | 0.75     |            | 0.844 | 10     |               | 635.18      |
| 0323637                 | HH8015     | 0     | 0.75     |            | 0.844 | 10     |               | 635.18      |
| 0323638                 | HH8110     | 5     | 1        |            | 1.094 | 12     |               | 980.98      |
| 0323639                 | HH8115     | 0     | 1        |            | 1.094 | 12     |               | 980.98      |

## Boring Bar Sleeves



| Part No. | Diameter | Shank Dia. | Head Dia. | Overall Lgth. | Bore  | LOC  | Screw Size | Price /Each |
|----------|----------|------------|-----------|---------------|-------|------|------------|-------------|
| 0323640  | 5/32     | 3/8        | 3/8       | 4             | 3/4   | 5/16 | 5-40       | \$161.98    |
| 0323641  | 3/16     | 3/8        | 3/8       | 4             | 3/4   | 5/16 | 5-40       | 161.98      |
| 0323642  | 5/32     | 1/2        | 13/32     | 4             | 3/4   | 5/16 | 6-32       | 161.98      |
| 0323643  | 3/16     | 1/2        | 7/16      | 4             | 3/4   | 5/16 | 6-32       | 161.98      |
| 0323644  | 1/4      | 1/2        | 1/2       | 4             | 1     | 1/2  | 6-32       | 161.98      |
| 0323645  | 3/16     | 5/8        | 7/16      | 4             | 3/4   | 5/16 | 10-32      | 161.98      |
| 0323646  | 1/4      | 5/8        | 1/2       | 4             | 1     | 1/2  | 10-32      | 161.98      |
| 0323647  | 5/16     | 5/8        | 9/16      | 4             | 1     | 1/2  | 10-32      | 161.98      |
| 0323648  | 3/8      | 5/8        | 5/8       | 4             | 1     | 1/2  | 10-32      | 161.98      |
| 0323649  | 3/16     | 3/4        | 7/16      | 5             | 3/4   | 5/16 | 10-32      | 165.62      |
| 0323650  | 1/4      | 3/4        | 1/2       | 5             | 1-1/2 | 3/4  | 10-32      | 165.62      |
| 0323651  | 5/16     | 3/4        | 9/16      | 5             | 1-1/2 | 3/4  | 10-32      | 165.62      |
| 0323652  | 3/8      | 3/4        | 5/8       | 5             | 1-1/2 | 3/4  | 10-32      | 165.62      |
| 0323653  | 1/2      | 3/4        | 3/4       | 5             | 2     | 3/4  | 1/4-28     | 165.62      |
| 0323654  | 5/32     | 1          | 7/16      | 6             | 3/4   | 5/16 | 5-40       | 171.08      |
| 0323655  | 3/16     | 1          | 11/16     | 6             | 1-1/2 | 3/4  | 1/4-28     | 171.08      |
| 0323656  | 5/16     | 1          | 13/16     | 6             | 1-3/4 | 7/8  | 1/4-28     | 171.08      |
| 0323657  | 3/8      | 1          | 7/8       | 6             | 1-3/4 | 7/8  | 1/4-28     | 171.08      |
| 0323658  | 1/2      | 1          | 1         | 6             | 2     | 7/8  | 1/4-28     | 171.08      |
| 0323659  | 3/16     | 1-1/4      | 11/16     | 8             | 3/4   | 5/16 | 1/4-28     | 180.18      |
| 0323660  | 1/4      | 1-1/4      | 3/4       | 8             | 1     | 1/2  | 1/4-28     | 180.18      |
| 0323661  | 5/16     | 1-1/4      | 13/16     | 8             | 1-1/2 | 3/4  | 1/4-28     | 180.18      |
| 0323662  | 3/8      | 1-1/4      | 7/8       | 8             | 1-1/2 | 3/4  | 1/4-28     | 180.18      |
| 0323663  | 1/2      | 1-1/4      | 1         | 8             | 2     | 3/4  | 1/4-28     | 180.18      |
| 0323664  | 5/8      | 1-1/4      | 1-1/8     | 8             | 2     | 3/4  | 1/4-28     | 180.18      |
| 0323665  | 3/4      | 1-1/4      | 1-1/4     | 8             | 2-1/2 | 7/8  | 1/4-28     | 180.18      |
| 0323666  | 1/4      | 1-1/2      | 3/4       | 8             | 1     | 1/2  | 1/4-28     | 198.38      |
| 0323667  | 5/16     | 1-1/2      | 13/16     | 8             | 1-1/2 | 3/4  | 1/4-28     | 198.38      |
| 0323668  | 3/8      | 1-1/2      | 7/8       | 8             | 1-1/2 | 3/4  | 1/4-28     | 198.38      |
| 0323669  | 1/2      | 1-1/2      | 1         | 8             | 2     | 3/4  | 1/4-28     | 198.38      |
| 0323670  | 5/8      | 1-1/2      | 1-1/8     | 8             | 2     | 3/4  | 1/4-28     | 198.38      |
| 0323671  | 3/4      | 1-1/2      | 1-1/4     | 8             | 2-1/2 | 7/8  | 1/4-28     | 198.38      |

## 200 Series 10° Lathe Bars Everede® Lathe Boring Bars without adjusting screws are especially designed for Engine Lathes.



| Part No.   | Vendor No. | Bit Size | Diameter                                      | Length | Price /Each |
|------------|------------|----------|---|--------|-------------|
| 0323672    | 220        | 5/32     | 11/32 x 2                                     | 6      | \$63.70     |
| 0323673    | 225        | 5/32     | 3/8   | 7      | 63.70       |
| 0323674    | 230        | 5/32     | 7/16  | 7-5/8  | 63.70       |
| 0323675    | 235        | 5/32     | 1/2   | 8-1/4  | 63.70       |
| 0323676    | 240        | 5/32     | 9/16  | 8-3/4  | 69.16       |
| 0323677    | 245        | 1/4      | 5/8   | 9-1/2  | 74.62       |
| 0323678    | 250        | 1/4      | 3/4   | 10     | 78.26       |
| 0323679    | 255        | 1/4      | 7/8   | 11     | 103.74      |
| 0323680    | 265        | 1/4      | 1   | 12     | 103.74      |
| <b>Set</b> |            |          |   |        |             |
| 0323681    | 200 SET    |          | 11/32, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4, 7/8, 1 |        | 582.40      |
| 0323682    | 200-C SET  |          | 3/8, 1/2, 5/8, 3/4, 1                         |        | 334.88      |

# INDEXABLE BORING BARS AND INSERTS

## Indexable Boring Bars and Inserts Cont.



### 30°

Designed for Boring to a Shoulder

| Part No.   | Vendor No. | Bit Size | Diameter                               | Length | Price /Each |
|------------|------------|----------|--|--------|-------------|
| 0323683    | 1525       | 5/32     | 3/8                                    | 7      | \$83.72     |
| 0323684    | 1530       | 5/32     | 7/16                                   | 7-5/8  | 83.72       |
| 0323685    | 1535       | 5/32     | 1/2                                    | 8-1/4  | 83.72       |
| 0323686    | 1540       | 5/32     | 9/16                                   | 8-3/4  | 87.36       |
| 0323687    | 1545       | 1/4      | 5/8                                    | 9-1/2  | 92.82       |
| 0323688    | 1550       | 1/4      | 3/4                                    | 10     | 96.46       |
| 0323689    | 1555       | 1/4      | 7/8                                    | 11     | 121.94      |
| 0323690    | 1565       | 1/4      | 1                                      | 12     | 121.94      |
| <b>Set</b> |            |          |  |        |             |
| 0323691    | 1500-A SET |          | 3/8, 7/16, 1/2, 9/16, 5/8, 3/4, 7/8, 1 |        | 655.20      |
| 0323692    | 1500-C SET |          | 3/8, 1/2, 5/8, 3/4, 1                  |        | 431.34      |

### Midget Boring Bar Set All Shank Diameter 3/8"



| Part No.   | Vendor No. | Bit Size | Diameter               | Length               | Overall Lgth. | Price /Each |
|------------|------------|----------|------------------------|----------------------|---------------|-------------|
| 0323693    | 105        | 7/64     | 7/32                   | 1-7/16               | 6             | \$65.52     |
| 0323694    | 110        | 7/64     | 17/64                  | 1-5/8                | 6             | 65.52       |
| 0323695    | 115        | 7/64     | 5/16                   | 1-3/4                | 6             | 65.52       |
| 0323696    | 125        | 7/64     | 3/8M                   | 0                    | 6             | 65.52       |
| <b>Set</b> |            |          |                        |                      |               |             |
| 0323697    | 100SET     | 7/64     | 7/32, 17/64, 5/16, 3/8 | 1-7/16, 1-5/8, 1-3/4 | 6             | 222.95      |

### 90° Grooving Bars

Your inside diameter grooving needs O-Rings, Snap Rings, Wire Rings, Square Grooves, Radius Grooves & Special Multi-Step Grooves



| Part No. | Vendor No. | Bit Size | Shank Dia. | Diameter | Length | Overall Lgth. | Price /Each |
|----------|------------|----------|------------|----------|--------|---------------|-------------|
| 0323698  | 1305       | 7/64     | 3/8        | 7/32     | 1-7/16 | 6             | \$92.82     |
| 0323699  | 1310       | 7/64     | 3/8        | 17/64    | 1-5/8  | 6             | 92.82       |
| 0323700  | 1315       | 7/64     | 3/8        | 5/16     | 1-3/4  | 6             | 92.82       |
| 0323701  | 1325M      | 7/64     | 3/8        | 3/8      | 0      | 6             | 92.82       |
| 0323702  | 1330       | 5/32     | 7/16       | 7/16     | 0      | 8             | 121.94      |
| 0323703  | 1335       | 5/32     | 1/2        | 1/2      | 0      | 8             | 121.94      |
| 0323704  | 1340       | 5/32     | 9/16       | 9/16     | 0      | 8             | 121.94      |
| 0323705  | 1345M      | 5/32     | 5/8        | 5/8      | 0      | 10            | 121.94      |
| 0323706  | 1350       | 1/4      | 3/4        | 3/4      | 0      | 10            | 160.16      |
| 0323707  | 1355       | 1/4      | 7/8        | 7/8      | 0      | 10            | 160.16      |
| 0323708  | 1365       | 1/4      | 1          | 1        | 0      | 10            | 160.16      |

### Unsharpened Bits for all Bars

Only 5 different sizes for bars 7/32" to 3".



| Part No. | Tool Bit Size | Bar Dia. | Length | Price /Each |
|----------|---------------|----------|--------|-------------|
| 0323718  | 1/4           | 3/4      | 31/32  | \$3.83      |
| 0323717  | 1/4           | 5/8      | 31/32  | 3.83        |
| 0323716  | 5/32          | 7/16     | 19/32  | 3.83        |
| 0323715  | 5/32          | 9/16     | 3/4    | 3.83        |
| 0323714  | 5/32          | 1/2      | 11/16  | 3.83        |
| 0323713  | 5/32          | 7/16     | 19/32  | 3.83        |
| 0323712  | 5/32          | 3/8      | 17/32  | 3.83        |
| 0323711  | 5/32          | 3/8      | 17/32  | 3.83        |
| 0323710  | 7/64          | 5/16     | 7/16   | 2.22        |
| 0323709  | 7/64          | 17/64    | 3/8    | 3.83        |

### Sharpened 60° Threading Bits For 10°-15° Bars

| Part No. | Length | Bit Size | Diameter             | Price /Each |
|----------|--------|----------|----------------------|-------------|
| 0323731  | 1/2    | 7/64     | 7/32 Thru 3/8 Midget | \$8.19      |
| 0323732  | 9/16   | 5/32     | 11/32 Thru 9/16      | 9.56        |
| 0323733  | 15/16  | 1/4      | 5/8 Thru 1           | 9.56        |

### Replacement Screws

Socket Head Cap Screw or Clamp Screw

| Part No. | Bar Dia.                         | Price /Each |
|----------|----------------------------------|-------------|
| 0323740  | 7/32                             | \$2.01      |
| 0323741  | 17/64, 5/16                      | 2.01        |
| 0323742  | 3/8M                             | 2.01        |
| 0323744  | 1/2                              | 2.01        |
| 0323745  | 9/16 Dia. & #1100 Set Offset Bar | 2.01        |
| 0323746  | 5/8                              | 2.01        |
| 0323747  | 3/4                              | 2.01        |
| 0323748  | 7/8                              | 2.01        |

### Replacement Clamps

Caps or clamps for Midget, 10°, 15°, 30° or 90° bars

| Part No. | Bar Dia. | Price /Each |
|----------|----------|-------------|
| 0323749  | 17/64    | \$14.56     |
| 0323750  | 5/16     | 14.56       |
| 0323751  | 11/32    | 14.56       |
| 0323752  | 3/8      | 14.56       |
| 0323753  | 3/8M     | 14.56       |
| 0323754  | 7/16     | 14.56       |
| 0323755  | 1/2      | 14.56       |
| 0323757  | 5/8      | \$16.38     |
| 0323758  | 3/4      | 16.38       |
| 0323759  | 7/8      | 17.75       |
| 0323760  | 1        | 17.75       |
| 0323761  | 3/8      | 16.84       |
| 0323762  | 7/16     | 17.29       |

| Part No. | Bar Dia.                         | Price /Each |
|----------|----------------------------------|-------------|
| 0323763  | 1/2                              | 17.75       |
| 0323764  | 9/16 Dia. & #1100 Set Offset Bar | 19.11       |
| 0323765  | 5/8                              | 19.11       |
| 0323766  | 3/4                              | 28.21       |
| 0323767  | 7/8                              | 28.21       |
| 0323768  | 1                                | 20.02       |
| 0323769  | 7/32                             | 20.02       |
| 0323770  | 17/64                            | 20.02       |
| 0323771  | 5/16                             | 20.02       |
| 0323772  | 0                                | 20.93       |
| 0323773  | 7/16                             | 20.93       |
| 0323774  | 1/2                              | 20.93       |
| 0323775  | 9/16 Dia. & #1100 Set Offset Bar | 22.30       |
| 0323776  | 5/8                              | 22.30       |
| 0323777  | 7/8                              | 24.57       |
| 0323778  | 1                                | 24.57       |

Carbide Inserts & Indexable Tooling



# INDEXABLE BORING BARS AND INSERTS

## Indexable Boring Bars and Inserts Cont.

Carbide Inserts & Indexable Tooling



0323847



0323779

### Indexable Inserts Insert Grade Information

**TL120**- General purpose to finish grade, run at high speeds works best in stainless steel, high temp alloy and cast irons.

**MC32**-General purpose grade run, at moderate speeds and works best in stainless steels, high temp alloys, cast irons and nickel based materials.

**CVM2**-Semi-finish to finish grade run in non-ferrous materials and stainless steel.

**CV7**-Semi-finish to finish grade run in steel and stainless steel.

**MU12**-General purpose run at low speeds in stainless steel, high temp alloy and cast irons.

**CM2**-Finish Grade, run in non-ferrous materials and high strength steel.

**CS7**-Semi-finish grade, run in carbon steel. alloy steel and tool steel.

### Inserts For C Series Bars

| Part No. | Vendor No.     | Radius | Price /Each |
|----------|----------------|--------|-------------|
| 0323802  | TPGH-231-CS6   | .031   | \$12.09     |
| 0323801  | TPGH-231-CM2   | .031   | 12.09       |
| 0323800  | TPGH-231-CS2   | .031   | 12.09       |
| 0323799  | TPGH-231-MU12  | .031   | 12.09       |
| 0323798  | TPGH-231-CV6   | .031   | 13.26       |
| 0323797  | TPGH-231-CVM2  | .031   | 13.26       |
| 0323796  | TPGH-231-MC32  | .031   | 13.89       |
| 0323795  | TPGH-231-TL120 | .031   | 13.89       |
| 0323794  | TPGH-215-CS6   | .015   | 12.09       |
| 0323793  | TPGH-215-CM2   | .015   | 12.09       |
| 0323792  | TPGH-215-CS2   | .015   | 12.09       |
| 0323791  | TPGH-215-MU12  | .015   | 12.09       |
| 0323790  | TPGH-215-CV6   | .015   | 13.26       |
| 0323789  | TPGH-215-CVM2  | .015   | 13.26       |
| 0323788  | TPGH-215-MC32  | .015   | 13.89       |
| 0323787  | TPGH-215-TL120 | .015   | 13.89       |
| 0323786  | TPGH-207-CS6   | .007   | 12.09       |
| 0323785  | TPGH-207-CM2   | .007   | 12.09       |
| 0323784  | TPGH-207-CS2   | .007   | 12.09       |
| 0323783  | TPGH-207-MU12  | .007   | 12.09       |
| 0323782  | TPGH-207-CV6   | .007   | 13.26       |
| 0323781  | TPGH-207-CVM2  | .007   | 13.26       |
| 0323780  | TPGH-207-MC32  | .007   | 13.89       |
| 0323779  | TPGH-207-TL120 | .007   | 13.89       |

### Inserts For D Series Bars

| Part No. | Vendor No.     | Radius | Price /Each |
|----------|----------------|--------|-------------|
| 0323803  | TPGH-315-TL120 | .015   | \$15.45     |
| 0323804  | TPGH-315-MC32  | .015   | 15.45       |
| 0323805  | TPGH-315-CVM2  | .015   | 14.82       |
| 0323806  | TPGH-315-CV6   | .015   | 14.82       |
| 0323807  | TPGH-315-MU12  | .015   | 13.50       |
| 0323808  | TPGH-315-CS2   | .015   | 13.50       |
| 0323809  | TPGH-315-CM2   | .015   | 13.50       |
| 0323810  | TPGH-315-CS6   | .015   | 13.50       |
| 0323811  | TPGH-331-TL120 | .031   | 15.45       |
| 0323812  | TPGH-331-MC32  | .031   | 15.45       |
| 0323813  | TPGH-331-CVM2  | .031   | 14.82       |
| 0323814  | TPGH-331-CV6   | .031   | 14.82       |
| 0323815  | TPGH-331-MU12  | .031   | 13.50       |
| 0323816  | TPGH-331-CS2   | .031   | 13.50       |
| 0323817  | TPGH-331-CM2   | .031   | 13.50       |
| 0323818  | TPGH-331-CS6   | .031   | 13.50       |

## Trigon Inserts for E Series

| Part No. | Vendor No.     | Radius | Price /Each |
|----------|----------------|--------|-------------|
| 0323840  | WCGT-008-TL120 | .008   | \$14.82     |
| 0323841  | WCGT-008-MC32  | .008   | 14.82       |
| 0323842  | WCGT-008-CVM2  | .008   | 14.20       |
| 0323843  | WCGT-008-CV6   | .008   | 14.20       |
| 0323844  | WCGT-008-MU12  | .008   | 12.25       |
| 0323845  | WCGT-008-CS2   | .008   | 12.25       |
| 0323846  | WCGT-008-CS6   | .008   | 12.25       |
| 0323847  | WCGT-015-TL120 | .015   | 14.82       |
| 0323848  | WCGT-015-MC32  | .015   | 14.82       |
| 0323849  | WCGT-015-CVM2  | .015   | 14.20       |
| 0323850  | WCGT-015-CV6   | .015   | 14.20       |
| 0323851  | WCGT-015-MU12  | .015   | 12.25       |
| 0323852  | WCGT-015-CS2   | .015   | 12.25       |
| 0323853  | WCGT-015-CS6   | .015   | 12.25       |

## Trigon Inserts for F Series Bars

| Part No. | Vendor No.     | Radius | Price /Each |
|----------|----------------|--------|-------------|
| 0323854  | WCGT-108-TL120 | .008   | 14.82       |
| 0323855  | WCGT-108-MC32  | .008   | 14.82       |
| 0323856  | WCGT-108-CVM2  | .008   | 14.20       |
| 0323857  | WCGT-108-CV6   | .008   | 14.20       |
| 0323858  | WCGT-108-MU12  | .008   | 12.25       |
| 0323859  | WCGT-108-CS2   | .008   | 12.25       |
| 0323860  | WCGT-108-CS6   | .008   | 12.25       |
| 0323861  | WCGT-115-TL120 | .015   | 14.82       |
| 0323862  | WCGT-115-MC32  | .015   | 14.82       |
| 0323863  | WCGT-115-CVM2  | .015   | 14.20       |
| 0323864  | WCGT-115-CV6   | .015   | 14.20       |
| 0323865  | WCGT-115-MU12  | .015   | 12.25       |
| 0323866  | WCGT-115-CS2   | .015   | 12.25       |
| 0323867  | WCGT-115-CS6   | .015   | 12.25       |

## Trigon Inserts for G Series Bars

| Part No. | Vendor No.     | Radius | Price /Each |
|----------|----------------|--------|-------------|
| 0323868  | WCGT-208-TL120 | .008   | 14.82       |
| 0323869  | WCGT-208-MC32  | .008   | 14.82       |
| 0323870  | WCGT-208-CVM2  | .008   | 14.20       |
| 0323871  | WCGT-208-CV6   | .008   | 14.20       |
| 0323872  | WCGT-208-MU12  | .008   | 12.25       |
| 0323873  | WCGT-208-CS2   | .008   | 12.25       |
| 0323874  | WCGT-208-CS6   | .008   | 12.25       |
| 0323875  | WCGT-215-TL120 | .015   | 14.82       |
| 0323876  | WCGT-215-MC32  | .015   | 14.82       |
| 0323877  | WCGT-215-CVM2  | .015   | 14.20       |
| 0323878  | WCGT-215-CV6   | .015   | 14.20       |
| 0323879  | WCGT-215-MU12  | .015   | 12.25       |
| 0323880  | WCGT-215-CS2   | .015   | 12.25       |
| 0323881  | WCGT-215-CS6   | .015   | 12.25       |

## Trigon Inserts for H Series Bars

| Part No. | Vendor No.     | Radius | Price /Each |
|----------|----------------|--------|-------------|
| 0323882  | WCGT-308-TL120 | .008   | \$20.13     |
| 0323883  | WCGT-308-MC32  | .008   | 20.13       |
| 0323884  | WCGT-308-CVM2  | .008   | 19.50       |
| 0323885  | WCGT-308-CV6   | .008   | 19.50       |
| 0323886  | WCGT-308-MU12  | .008   | 17.32       |
| 0323887  | WCGT-308-CS2   | .008   | 17.32       |
| 0323888  | WCGT-308-CS6   | .008   | 17.32       |
| 0323889  | WCGT-315-TL120 | .015   | 20.13       |
| 0323890  | WCGT-315-MC32  | .015   | 20.13       |
| 0323891  | WCGT-315-CVM2  | .015   | 19.50       |
| 0323892  | WCGT-315-CV6   | .015   | 19.50       |
| 0323893  | WCGT-315-MU12  | .015   | 17.32       |
| 0323894  | WCGT-315-CS2   | .015   | 17.32       |
| 0323895  | WCGT-315-CS6   | .015   | 17.32       |
| 0323896  | WCGT-331-TL120 | .031   | 20.13       |
| 0323897  | WCGT-331-MC32  | .031   | 20.13       |
| 0323898  | WCGT-331-CVM2  | .031   | 19.50       |
| 0323899  | WCGT-331-CV6   | .031   | 19.50       |
| 0323900  | WCGT-331-MU12  | .031   | 17.32       |
| 0323901  | WCGT-331-CS2   | .031   | 17.32       |
| 0323902  | WCGT-331-CS6   | .031   | 17.32       |

## CDCD Inserts for A Series Bars



| Part No. | Vendor No.    | Radius | Price /Each |
|----------|---------------|--------|-------------|
| 0323903  | CDCD-02-TL120 | .002   | \$13.42     |
| 0323904  | CDCD-02-CVM2  | .002   | 14.04       |
| 0323905  | CDCD-02-CV7   | .002   | 13.42       |
| 0323906  | CDCD-02-MU12  | .002   | 12.25       |
| 0323907  | CDCD-02-CS2   | .002   | 12.25       |
| 0323908  | CDCD-02-CM2   | .002   | 12.25       |
| 0323909  | CDCD-02-CS6   | .002   | 12.25       |
| 0323910  | CDCD-02-CS7   | .002   | 12.25       |
| 0323911  | CDCD-02-CT7   | .002   | 13.42       |
| 0323912  | CDCD-02-PCD   | .002   | 176.28      |
| 0323913  | CDCD-02-CBN   | .002   | 176.28      |
| 0323914  | CDCD-07-TL120 | .007   | 13.42       |
| 0323915  | CDCD-07-CVM2  | .007   | 13.42       |
| 0323916  | CDCD-07-CV7   | .007   | 13.42       |
| 0323917  | CDCD-07-MU12  | .007   | 12.25       |
| 0323918  | CDCD-07-CS2   | .007   | 12.25       |
| 0323919  | CDCD-07-CM2   | .007   | 12.25       |
| 0323920  | CDCD-07-CS6   | .007   | 12.25       |
| 0323921  | CDCD-07-CS7   | .007   | 12.25       |
| 0323922  | CDCD-07-CT7   | .007   | 13.42       |
| 0323923  | CDCD-07-PCD   | .007   | 176.28      |
| 0323924  | CDCD-07-CBN   | .007   | 176.28      |
| 0323925  | CDCD-15-TL120 | .015   | 14.04       |
| 0323926  | CDCD-15-CVM2  | .015   | 13.42       |
| 0323927  | CDCD-15-CV7   | .015   | 13.42       |
| 0323928  | CDCD-15-MU12  | .015   | 12.25       |
| 0323929  | CDCD-15-CS2   | .015   | 12.25       |
| 0323930  | CDCD-15-CM2   | .015   | 12.25       |
| 0323931  | CDCD-15-CS6   | .015   | 12.25       |
| 0323932  | CDCD-15-CS7   | .015   | 12.25       |
| 0323933  | CDCD-15-CT7   | .015   | 13.42       |
| 0323934  | CDCD-15-PCD   | .015   | 176.28      |
| 0323935  | CDCD-15-CBN   | .015   | 176.28      |

## Indexable Chamfer Mills w/ Weldon Shanks



| Part No. | Min. Dia. | Max. Dia. | Shank Angle | Flutes | Cut Lgth. | Price /Each    |
|----------|-----------|-----------|-------------|--------|-----------|----------------|
| 0323967  | 1.000     | 1.958     | 1-1/4       | 60     | 3         | 0.277 \$229.32 |
| 0323966  | 1.188     | 1.971     | 1-1/4       | 45     | 3         | 0.391 229.32   |
| 0323965  | 1.188     | 1.914     | 1-1/4       | 41     | 3         | 0.418 229.32   |
| 0323964  | 1.250     | 1.803     | 1-1/4       | 30     | 3         | 0.479 229.32   |
| 0323963  | .750      | 1.708     | 1           | 60     | 3         | 0.277 187.46   |
| 0323962  | .938      | 1.721     | 1           | 45     | 3         | 0.391 187.46   |
| 0323961  | .938      | 1.664     | 1           | 41     | 3         | 0.418 187.46   |
| 0323960  | 1.000     | 1.553     | 1           | 30     | 3         | 0.479 187.46   |
| 0323959  | .500      | 1.458     | 3/4         | 60     | 2         | 0.277 171.08   |
| 0323958  | .688      | 1.471     | 3/4         | 45     | 2         | 0.391 171.08   |
| 0323957  | .688      | 1.414     | 3/4         | 41     | 2         | 0.418 171.08   |
| 0323956  | .750      | 1.303     | 3/4         | 30     | 2         | 0.479 171.08   |

## Inserts for Chamfermills

| Part No. | Vendor No.    | Radius | Price /Each |
|----------|---------------|--------|-------------|
| 0323968  | APLT-347-CVM2 | .047   | \$14.43     |
| 0323969  | APLT-347-CV6  | .047   | 14.43       |
| 0323970  | APLT-347-CS2  | .047   | 11.86       |
| 0323971  | APLT-347-CS6  | .047   | 11.86       |

# INDEXABLE BORING BARS & INSERTS & QUICK CHANGE CUTTING TOOLS

## Indexable Boring Bars and Inserts Cont.



## Indexable Countersinks

| Part No. | Angle | Body Dia. | Shank Dia. | Max. Dia. | Min. Dia. | Price /Each |
|----------|-------|-----------|------------|-----------|-----------|-------------|
| 0323972  | 60    | 1/2       | 3/8        | 0.463     | 0.125     | \$145.60    |
| 0323973  | 82    | 5/8       | 3/8        | 0.583     | 0.125     | 145.60      |
| 0323974  | 90    | 5/8       | 3/8        | 0.621     | 0.125     | 145.60      |
| 0323975  | 100   | 3/4       | 1/2        | 0.719     | 0.125     | 165.62      |
| 0323976  | 120   | 7/8       | 1/2        | 0.741     | 0.125     | 172.90      |
| 0323977  | 130   | 7/8       | 1/2        | 0.771     | 0.125     | 172.90      |
| 0323978  | 60    | 5/8       | 3/8        | 0.588     | 0.25      | 80.00       |
| 0323979  | 82    | 3/4       | 1/2        | 0.708     | 0.25      | 165.62      |
| 0323980  | 90    | 3/4       | 1/2        | 0.746     | 0.25      | 165.62      |
| 0323981  | 100   | 7/8       | 1/2        | 0.844     | 0.25      | 165.62      |
| 0323982  | 120   | 1         | 1/2        | 0.866     | 0.25      | 198.38      |
| 0323983  | 130   | 1         | 1/2        | 0.896     | 0.25      | 198.38      |
| 0323984  | 60    | 3/4       | 1/2        | 0.713     | 0.375     | 165.62      |
| 0323985  | 82    | 7/8       | 1/2        | 0.833     | 0.375     | 165.62      |
| 0323986  | 90    | 7/8       | 1/2        | 0.871     | 0.375     | 165.62      |
| 0323987  | 100   | 1         | 1/2        | 0.969     | 0.375     | 198.38      |
| 0323988  | 120   | 1-1/8     | 1/2        | 0.991     | 0.375     | 198.38      |
| 0323989  | 130   | 1-1/8     | 1/2        | 1.021     | 0.375     | 198.38      |
| 0323990  | 60    | 7/8       | 1/2        | 0.838     | 0.5       | 165.62      |
| 0323991  | 82    | 1         | 1/2        | 0.958     | 0.5       | 187.46      |
| 0323992  | 90    | 1-1/8     | 1/2        | 0.996     | 0.5       | 187.46      |
| 0323993  | 100   | 1-1/8     | 1/2        | 1.094     | 0.5       | 198.38      |
| 0323994  | 120   | 1-1/4     | 1/2        | 1.116     | 0.5       | 198.38      |
| 0323995  | 130   | 1-1/4     | 1/2        | 1.145     | 0.5       | 198.38      |

## Inserts for Countersinks

| Part No. | Vendor No.    | Radius | Price /Each |
|----------|---------------|--------|-------------|
| 0323789  | TPGH-215-CVM2 | .015   | \$13.26     |
| 0323790  | TPGH-215-CV6  | .015   | 13.26       |
| 0323792  | TPGH-215-CS2  | .015   | 12.09       |
| 0323794  | TPGH-215-CS6  | .015   | 12.09       |

## Quick Change Carbide Insert Cutting Tools



## Quick Change Carbide Insert Cutting Tools with Adjustable Chipbreaker Turning Holder for Carbide Triangular Inserts

| Part No.    | Tool Holder                                       | Type/Mounting | Price /Each |
|-------------|---|---------------|-------------|
| <b>#12</b>  |   |               |             |
| 7012918     | turning holder for carbide triangular inserts     | AXA           | \$117.00    |
| 7012962     | turning holder for carbide triangular inserts     | BXA           | 126.00      |
| 7013006     | turning holder for carbide triangular inserts     | CXA           | 137.00      |
| 7013050     | 12 turning holder for carbide triangular inserts  | CA            | 153.00      |
| <b>#12N</b> |   |               |             |
| 7012919     | turning holder for carbide triangular inserts     | AXA           | 117.00      |
| 7012963     | turning holder for carbide triangular inserts     | BXA           | 126.00      |
| 7013007     | turning holder for carbide triangular inserts     | CXA           | 137.00      |
| 7013051     | 12n turning holder for carbide triangular inserts | CA            | 153.00      |

## Combination Turning and Facing Holder for Carbide Triangular Inserts

| Part No.    | Tool Holder   | Type/Mounting | Price /Each |
|-------------|---|---------------|-------------|
| <b>#16</b>  |   |               |             |
| 7012926     | combo turn/face holder for carbide triangular inserts | AXA           | \$160.00    |
| 7012969     | combination turning & facing holder                   | BXA           | 176.00      |
| 7013013     | combination turning & facing                          | CXA           | 198.00      |
| 7013057     | 16 combination turning & facing holder                | CA            | 220.00      |
| <b>#16N</b> |   |               |             |
| 7012927     | combo turn/face holder for carbide triangular inserts | AXA           | 165.00      |
| 7012970     | combination turning & facing holder                   | BXA           | 182.00      |
| 7013014     | combination turning & facing holder                   | CXA           | 209.00      |
| 7013058     | 16n combination turning & facing holder               | CA            | 231.00      |

## Quick Change Carbide Insert Cutting Tools #23 Turning and Facing Holder



| Part No. | Tool Holder                  | Type/Mounting | Price /Each |
|----------|------------------------------|---------------|-------------|
| 7012934  | turning and facing holder    | AXA           | \$215.00    |
| 7012977  | turning and facing holder    | BXA           | 231.00      |
| 7013021  | turning and facing holder    | CXA           | 253.00      |
| 7013065  | 23 turning and facing holder | CA            | 297.00      |

## 80° Diamond Turning and Facing Tool



| Part No.    | Tool Holder                                     | Type/Mounting | Price /Each |
|-------------|---|---------------|-------------|
| <b>#80</b>  |   |               |             |
| 7013042     | cxad-series 0 diamond turning & facing tool     | CXA           | \$152.00    |
| 7012954     | axad-series 0 diamond turning & facing tool     | AXA           | 130.00      |
| 7012998     | diamondturning & facing tool                    | BXA           | 143.00      |
| 7013088     | cad-80 800 diamond turning & facing tool        | CA            | 188.00      |
| <b>#80L</b> |   |               |             |
| 7013043     | cxad-H series 0 diamond turning & facing holder | CXA           | 152.00      |
| 7012955     | axad-H series 0 diamond turning & facing tool   | AXA           | 130.00      |
| 7012999     | diamond turning & facing tool                   | BXA           | 143.00      |

## Quick Change Profiling Tool Holders

| Part No.    | Tool Holder               | Type/Mounting | Price /Each |
|-------------|---------------------------|---------------|-------------|
| <b>#15</b>  |                           |               |             |
| 7012924     | profiling tool holder     | AXA           | \$209.00    |
| 7012967     | profiling tool holder     | BXA           | 226.00      |
| 7013011     | profiling tool holder     | CXA           | 242.00      |
| 7013055     | 15 profiling tool holder  | CA            | 264.00      |
| <b>#15L</b> |                           |               |             |
| 7012925     | profiling tool holder     | AXA           | 209.00      |
| 7012968     | profiling tool holder     | BXA           | 226.00      |
| 7013056     | 15l profiling tool holder | CA            | 264.00      |

## Quick Change Knurling Tool Holders

| Part No.   | Tool Holder                            | Type/Mounting | Price /Each |
|------------|--|---------------|-------------|
| <b>#10</b> |  |               |             |
| 7012915    | knurling, facing and turning holder    | AXA           | \$105.00    |
| 7012959    | knurling, facing and turning holder    | BXA           | 124.00      |
| 7013003    | knurling, facing and turning holder    | CXA           | 139.00      |
| 7013047    | 10 knurling, facing and turning holder | CA            | 152.00      |
| <b>#19</b> |  |               |             |
| 7012928    | adjustable knurling holder             | AXA           | 275.00      |
| 7012971    | adjustable knurling holder             | BXA           | 286.00      |
| 7013015    | adjustable knurling holder             | CXA           | 303.00      |
| 7013059    | 19 adjustable knurling holder          | CA            | 314.00      |

## Threading Holder #8



| Part No. | Tool Holder        | Type/Mounting | Price /Each |
|----------|--------------------|---------------|-------------|
| 7012950  | threading holder   | AXA           | \$102.00    |
| 7012993  | threading holder   | BXA           | 108.00      |
| 7013038  | threading holder   | CXA           | 125.00      |
| 7013084  | 8 threading holder | CA            | 143.00      |

## Threading and Grooving Tool Holder #81



| Part No. | Tool Holder                           | Type/Mounting | Price /Each |
|----------|---------------------------------------|---------------|-------------|
| 7012951  | threading and grooving tool holder    | AXA           | \$155.00    |
| 7012994  | threading and grooving tool holder    | BXA           | 171.00      |
| 7013039  | threading and grooving tool holder    | CXA           | 182.00      |
| 7013085  | 81 threading and grooving tool holder | CA            | 193.00      |

Carbide Inserts & Indexable Tooling

# CUTTING TOOLS & TOOL HOLDERS

## Quick Change Carbide Insert Cutting Tools Cont.

Carbide Inserts & Indexable Tooling



### Adjustable Threading Holders w/ H.S. Blade & AT88 Head



| Part No. | Tool Holder   | Type/Mounting | Price /Each |
|----------|---|---------------|-------------|
| 7012952  | adjustable threading holder with h.s. blade & at head | AXA           | \$209.00    |
| 7012995  | adj threading holder with h.s. blade & at head        | BXA           | 225.00      |
| 7013040  | adj threading holder with h.s. blade & at head        | CXA           | 237.00      |
| 7013086  | 88 ad threading holder with h.s. blade & at88 head    | CA            | 259.00      |

## Quick Change Cut Off & Grooving Holders



### Universal Parting Blade Holders #7, #7R



| Part No.          | Tool Holder                                      | Type/Mounting | Price /Each |
|-------------------|--|---------------|-------------|
| 7012946           | universal parting blade holder                   | AXA           | \$85.00     |
| 7012989           | universal parting blade holder                   | BXA           | 97.00       |
| 7013034           | universal parting blade holder                   | CXA           | 108.00      |
| 7013079           | 7 universal parting blade holder                 | CA            | 141.00      |
| <b>Reversible</b> |  |               |             |
| 7012949           | universal parting blade tool holder - reversible | AXA           | 96.00       |
| 7012992           | universal parting blade tool holder - reversible | BXA           | 108.00      |
| 7013037           | universal parting blade tool holder - reversible | CXA           | 119.00      |
| 7013083           | 7r univ parting blade tool holder - reversible   | CA            | 152.00      |

### Cut Off and Grooving Holder #71, #77



| Part No.   | Tool Holder                             | Type/Mounting | Price /Each |
|------------|---|---------------|-------------|
| <b>#71</b> |   |               |             |
| 7012947    | cut-off and grooving holder             | AXA           | \$159.00    |
| 7012990    | cut-off and grooving holder             | BXA           | 171.00      |
| 7013035    | cut-off and grooving holder             | CXA           | 182.00      |
| 7013081    | 71-1 cut-off & grooving holder (1-1/2") | CA            | 209.00      |
| 7013080    | 71 cut-off and grooving holder (2")     | CA            | 209.00      |
| <b>#77</b> |   |               |             |
| 7012948    | cut-off and grooving holder             | AXA           | 154.00      |
| 7012991    | cut-off grooving holder                 | BXA           | 165.00      |
| 7013036    | cut-off grooving holder                 | CXA           | 174.00      |
| 7013082    | 77 cut-off and grooving holder holder   | CA            | 204.00      |

## Sets



### 5 Piece Starter Set



#### Set consists of the following: Tool Post, Custom T Bolt & Holders Listed Below

| Part No. | Tool Holder | Set Range      | Price /Each |
|----------|-------------|----------------|-------------|
| 7012895  | Set         | basic set 5 pc | \$623.46    |
| 7012898  | Set         | basic set 5 pc | 635.00      |
| 7012901  | Set         | basic set 5 pc | 810.00      |
| 7012904  | Set         | basic set 5 pc | 1017.00     |
| 7012907  | Set         | basic set 5 pc | 1408.00     |
| 7012910  | Set         | basic set 5 pc | 2211.00     |

### 7 Piece Starter Set



#### Set consists of the following: Tool Post, Custom T Bolt & Holders Listed Below

| Part No. | Tool Holder | Set Range | Price /Each |
|----------|-------------|-----------|-------------|
| 7012896  | Set         | 7 pc set  | \$698.00    |
| 7012899  | Set         | 7 pc set  | 831.00      |
| 7012902  | Set         | 7 pc set  | 1027.00     |
| 7012905  | Set         | 7 pc set  | 1229.00     |
| 7012908  | Set         | 7 pc set  | 1847.00     |
| 7012911  | Set         | 7 pc set  | 2939.00     |

### "AS" Set



#### Set consists of the following: Tool Post, Custom T Bolt & Holders Listed Below

| Part No. | Tool Holder | Set Range           | Price /Each |
|----------|-------------|---------------------|-------------|
| 7012894  | Set         | tool post & holder  | \$1055.00   |
| 7012897  | Set         | tool post & holders | 1228.00     |
| 7012900  | Set         | tool post & holders | 1457.00     |
| 7012903  | Set         | tool post & holders | 1779.00     |
| 7012906  | Set         | tool post & holders | 2166.00     |
| 7012909  | Set         | tool post & holders | 3109.00     |

## Qualified Tool Post and Holders



### Qualified Tool Posts and Holders

| Part No. | Tool Holder                           | Type/Mounting | Price /Each |
|----------|---------------------------------------|---------------|-------------|
| 7013133  | 54q morse taper holder                | CA            | \$808.00    |
| 7013132  | 53q morse taper holder                | CA            | 204.00      |
| 7013131  | 52q morse taper holder                | CA            | 204.00      |
| 7013130  | 4q-750 boring bar holder              | CA            | 204.00      |
| 7013129  | 4q-2000 boring bar holder             | CA            | 215.00      |
| 7013128  | 4q-1750 boring bar holder             | CA            | 248.00      |
| 7013127  | 4q-1500 boring bar holder             | CA            | 240.00      |
| 7013126  | 4q-1250 boring bar holder             | CA            | 240.00      |
| 7013125  | 4q-1000 boring bar holder             | CA            | 226.00      |
| 7013124  | 1q qualified turning holder           | CA            | 215.00      |
| 7013123  | 1k qualified facing and boring holder | CA            | 185.00      |
| 7013122  | da-55-i indexable morse taper holder  | CA            | 185.00      |

## Indexable Tool Holders



### Indexable Tool Holders

| Part No. | Tool Holder                                    | Type /Mounting | Price /Each |
|----------|--|----------------|-------------|
| 7013119  | 77-i indexable cutoff holder (carbide)         | CA             | \$228.00    |
| 7013118  | 54-i indexable morse taper holder              | CA             | 157.00      |
| 7013116  | 2-i indexable turning, facing & boring holder  | CA             | 112.00      |
| 7013115  | 104-i indexable boring bar holder              | CA             | 148.00      |
| 7013114  | 100-i indexable boring bar holder              | CA             | 140.00      |
| 7013113  | 1-x overSize indexable turning & facing holder | CA             | 140.00      |
| 7013109  | 77-i indexable cutoff holder (carbide)         | BXA            | 185.00      |
| 7013104  | 53-i indexable morse taper holder              | BXA            | 99.00       |
| 7013097  | 2-i indexable turning, facing & boring holder  | BXA            | 71.00       |
| 7013096  | 141-i indexable heavy duty boring bar holder   | BXA            | 118.00      |
| 7013095  | 104-i indexable boring bar holder              | BXA            | 108.00      |
| 7013094  | 100-i indexable boring bar holder              | BXA            | 103.00      |
| 7013093  | 1-x os indexable turning & facing holder       | BXA            | 90.00       |
| 7013092  | 1-i indexable turning & facing holder          | BXA            | 65.00       |



# UNIVERSAL LATHES & DRILL CHUCKS & ACCESSORIES

## Universal Lathe



### Universal Lathe-Spindle & Collet Stops



| Part No. | Accessory Descriptions                  | Price /Each |
|----------|---|-------------|
| 7013137  | caq-ss set screw for 4q-750 holder 4pcs | \$195.00    |
| 7013138  | spindle and collet stop                 | 195.00      |
| 7013139  | spindle and collet stop                 | 280.00      |
| 7013140  | spindle and collet stop                 | 345.00      |
| 7013141  | spindle and collet stop                 | 410.00      |
| 7013142  | spindle and collet stop                 | 620.00      |
| 7013143  | spindle and collet stop                 | 785.00      |
| 7013144  | spindle and collet stop                 | 3.73        |
| 7013145  | 0 : "o" rings (set of 2)                | 212.14      |
| 7013146  | 0 : body with scr/gibs/rings            | 56.57       |
| 7013147  | 0 : gibs (set of 3)                     | 30.86       |
| 7013148  | 0 : long - extension                    | 23.14       |
| 7013149  | 0 : short - extension                   | 46.29       |
| 7013150  | 0 : t-handle wrench                     | 73.29       |
| 7013151  | 0 : taper screw                         | 3.73        |
| 7013152  | 00 : "o" rings (set of 2)               | 212.14      |
| 7013153  | 00 : body with scr/gibs/rings           | 56.57       |
| 7013154  | 00 : gibs (set of 3)                    | 30.86       |
| 7013155  | 00 : long - extension                   | 23.14       |
| 7013156  | 00 : short - extension                  | 46.29       |
| 7013157  | 00 : t-handle wrench                    | 73.29       |
| 7013158  | 00 : taper screw                        | 4.63        |
| 7013159  | 1 : "o" rings (set of 2)                | 228.86      |
| 7013160  | 1 : body with scr/gibs/rings            | 61.71       |
| 7013161  | 1 : gibs (set of 3)                     | 36.00       |
| 7013162  | 1 : long - extension                    | 33.43       |
| 7013163  | 1 : short - extension                   | 52.71       |
| 7013164  | 1 : t-handle wrench                     | 79.71       |
| 7013165  | 1 : taper screw                         | 5.66        |
| 7013166  | 2 : "o" rings (set of 2)                | 315.00      |
| 7013167  | 2 : body with scr/gibs/rings            | 79.71       |
| 7013168  | 2 : gibs (set of 3)                     | 46.29       |
| 7013169  | 2 : long - extension                    | 37.29       |
| 7013170  | 2 : short - extension                   | 61.71       |

| Part No. | Accessory Descriptions       | Price /Each |
|----------|------------------------------|-------------|
| 7013171  | 2 : t-handle wrench          | \$108.00    |
| 7013172  | 2 : taper screw              | 6.43        |
| 7013173  | 3 : "o" rings (set of 2)     | 407.57      |
| 7013174  | 3 : body with scr/gibs/rings | 91.29       |
| 7013175  | 3 : gibs (set of 3)          | 61.71       |
| 7013176  | 3 : long - extension         | 46.29       |
| 7013177  | 3 : short - extension        | 77.14       |
| 7013178  | 3 : t-handle wrench          | 136.29      |
| 7013179  | 3 : taper screw              | 7.46        |
| 7013180  | 4 : "o" rings (set of 2)     | 478.29      |
| 7013181  | 4 : body with scr/gibs/rings | 99.00       |
| 7013182  | 4 : gibs (set of 3)          | 69.43       |
| 7013183  | 4 : long - extension         | 54.00       |
| 7013184  | 4 : short - extension        | 96.43       |
| 7013185  | 4 : t-handle wrench          | 154.29      |
| 7013186  | 4 : taper screw              | 10.41       |
| 7013187  | 5 : "o" rings (set of 2)     | 669.86      |
| 7013188  | 5 : body with scr/gibs/rings | 137.57      |
| 7013189  | 5 : gibs (set of 3)          | 97.71       |
| 7013190  | 5 : long - extension         | 75.86       |
| 7013191  | 5 : short - extension        | 133.71      |
| 7013192  | 5 : t-handle wrench          | 216.00      |

## Drill Chucks and Accessories

# Jacobs

### Ball Bearing Super Chucks

Super Chuck® Ball Bearing Chucks are designed for close tolerance production drilling on precision equipment.

- Maximizes gripping force and drilling accuracy
- Jaws center-ground for absolute straightness and alignment
- Each chuck is 100% inspected for performance and precision
- T.I.R. .003" maximum at half capacity



| Part No. | Model No. | Min. Capacity | Max. Capacity | Key Number | Mount | Price /Each |
|----------|-----------|---------------|---------------|------------|-------|-------------|
| 0308125  | 11N       | .040          | .375          | K32        | 2JT   | \$112.38    |
| 0308126  | 14N       | .040          | .500          | K3         | 3JT   | 161.61      |
| 0308127  | 16N       | .125          | .625          | K4         | 3JT   | 207.76      |
| 0308128  | 18N       | .125          | .750          | K4         | 4JT   | 269.25      |

## Plain Bearing Heavy Duty

- Jaws specially treated to ensure extended thread life and high gripping surface hardness
- Heavy and medium duty models for threaded or taper mounting
- Jaws center-ground for absolute straightness and alignment
- Through-hardened sleeve teeth, plus hardened nose and keyholes provide outstanding wear resistance
- T.I.R. .004" maximum at half capacity



| Part No. | Model No. | Min. Capacity | Max. Capacity | Key Number | Mount | Price /Each |
|----------|-----------|---------------|---------------|------------|-------|-------------|
| 0308129  | 3A        | .125          | .625          | K3         | 3JT   | \$145.44    |
| 0308130  | 34-02     | .040          | .500          | K3         | 2JT   | 87.74       |
| 0308131  | 34-06     | .040          | .500          | K3         | 6JT   | 110.32      |
| 0308132  | 34-33     | .040          | .500          | K3         | 33JT  | 94.17       |
| 0308133  | 36        | .180          | .800          | K4         | 3JT   | 165.22      |
| 0308134  | 0         | .0135         | .156          | K0         | 0JT   | 79.75       |
| 0308135  | 1A        | .040          | .250          | K1         | 1JT   | 64.17       |
| 0308136  | 2A        | .040          | .375          | K2         | 2JT   | 83.16       |
| 0308137  | 33        | .08           | .500          | K32        | 33JT  | 91.17       |

## Precision KeyLess Chucks

- For general machining applications
- Precision tested and certified to .0016" T.I.R. maximum at half capacity
- Self-tightening feature automatically increases gripping force proportional to increased torque to prevent tool shank slippage



| Part No. | Model No.      | Min. Cap. | Max. Cap. | Mount | Price /Each |
|----------|----------------|-----------|-----------|-------|-------------|
| 0308145  | JKP 80-J2S (1) | .012"     | .315      | 2JS   | \$197.45    |
| 0308146  | JKP 100-J33    | .020"     | .394      | 33 JT | 212.17      |
| 0308147  | JKP 100-J2     | .020"     | .394      | 2 JT  | 212.17      |
| 0308148  | JKP 130-J33    | .039"     | .512      | 33 JT | 227.08      |
| 0308149  | JKP 130-J2     | .039"     | .512      | 2 JT  | 227.08      |
| 0308150  | JKP 130-J6     | .118"     | .512      | 6 JT  | 227.08      |

## Drill Chucks and Accessories Cont.

# Jacobs

### Power Tool Chucks

- Industrial quality drill chuck gives precision performance for the tradesman or serious home craftsman.



| Part No. | Model No. | Description                             | Min. Capacity | Max. Capacity | Key Number | Mount  | Price /Each |
|----------|-----------|---|---------------|---------------|------------|--------|-------------|
| 0308153  | 31037     | 1/2" Keyless, 3/8-24 mount              | .062          | .500          |            | 3/8-24 | \$37.76     |
| 0308154  | 31237     | 1/2" Keyless Hammer Chuck, 1/2-20 mount | .062          | .500          |            | 1/2-20 | 44.89       |
| 0308155  | 30246     | 3/8" Keyed, 3/8-24 mount                | .063          | .375          | KK         | 3/8-24 | 33.91       |
| 0308156  | 31052     | 1/2" Keyed, 1/2-20 mount                | .063          | .500          | KK         | 1/2-20 | 37.76       |

## Thread Mount Chucks

- Fluted sleeve standard on all models



| Part No. | Model No. | Min. Capacity | Max. Capacity | Key Number | Mount  | Price /Each |
|----------|-----------|---------------|---------------|------------|--------|-------------|
| 0308138  | 7BA3/8    | .040          | .250          | K7         | 3/8-24 | \$64.20     |
| 0308139  | 1B3/8     | .040          | .250          | K1         | 3/8-24 | 58.83       |
| 0308141  | 41BA3/8   | .040          | .375          | K30        | 3/8-24 | 68.63       |
| 0308142  | 41BA1/2   | .040          | .375          | K30        | 1/2-20 | 92.71       |
| 0308143  | 33BA1/2   | .08           | .500          | K32        | 1/2-20 | 79.00       |
| 0308144  | 33BA3/8   | .08           | .500          | K32        | 3/8-24 | 81.99       |



# DRILL CHUCKS & ACCESSORIES

## Drill Chucks and Accessories Cont.



### Chuck Keys

- Soft steel handles limit the potential for dangerous fracturing under excessive load
- Nickel thumb grip styles increase leverage and user comfort
- Self-ejecting models with spring-loaded ejectors to ensure key disengagement after tightening



| Part No. | Model No. | Use with Chuck                | Pilot Size | Handle Type  | Price /Each |
|----------|-----------|-------------------------------|------------|--------------|-------------|
| 0308289  | K1        | 1 SERIES                      | 5/32"      | T- Handle    | \$4.51      |
| 0308290  | K2        | 2 SERIES                      | 1/4"       | Thumb Handle | 6.70        |
| 0308291  | K3        | 3 & 34 Series, 14N            | 5/16"      | Thumb Handle | 7.67        |
| 0308292  | K3C       | 34Series-33C                  | 5/16"      | Thumb Handle | 8.64        |
| 0308293  | K4        | 36 Series, 16N, 18N           | 3/8"       | Thumb Handle | 11.74       |
| 0308294  | K5        | 20N                           | 7/16"      | T- Handle    | 23.52       |
| 0308295  | K7        | 7 Series                      | 7/32"      | Thumb Handle | 6.33        |
| 0308296  | K30       | 31, 41 Series, 8-1/2 N        | 15/64"     | Thumb Handle | 6.70        |
| 0308297  | K32       | 32 & 33 Series, 11N           | 1/4"       | Thumb Handle | 7.13        |
| 0308298  | KK        | 22BA, 23BA, 24BA, 26BA, 29-33 | 9/32"      | T- Handle    | 5.47        |
| 0308299  | KGA       | 1/4" & 3/8" Multi-Craft       | 1/4"       | L-Handle     | 2.95        |

Carbide Inserts & Indexable Tooling

### R-8 Shanks

- Adapts R-8 bridgeport taper to Jacobs® taper chucks



| Part No. | Model No. | Description | OaL  | Price /Each |
|----------|-----------|-------------|------|-------------|
| 0308194  | AO802     | 2 JT        | 5.18 | \$96.87     |
| 0308195  | AO803     | 3 JT        | 5.53 | 96.87       |
| 0308196  | AO804     | 4 JT        | 5.97 | 96.87       |
| 0308197  | AO806     | 6 JT        | 5.31 | 96.87       |
| 0308198  | AO833     | 33 JT       | 5.31 | 96.87       |

### Straight Shank Arbors

Adapts straight shanks to Jacobs® taper



| Part No. | Model No. | Description | OaL   | Price /Each |
|----------|-----------|-------------|-------|-------------|
| 0308176  | A4000     | 1/2" X 0JT  | 3.094 | \$16.63     |
| 0308177  | A4001     | 1/2" X 1JT  | 3.312 | 16.63       |
| 0308178  | A4002     | 1/2" X 2JT  | 3.531 | 16.63       |
| 0308179  | A4003     | 1/2" X 3JT  | 3.875 | 16.63       |
| 0308180  | A4006     | 1/2" X 6JT  | 3.656 | 21.62       |
| 0308181  | A4033     | 1/2" X 33JT | 3.656 | 16.63       |
| 0308182  | A4101     | 5/8" X 1JT  | 3.312 | 20.47       |
| 0308183  | A4102     | 5/8" X 2JT  | 3.531 | 20.47       |
| 0308184  | A4103     | 5/8" X 3JT  | 3.875 | 28.58       |
| 0308185  | A4106     | 5/8" X 6JT  | 3.656 | 22.43       |
| 0308186  | A4133     | 5/8" X 33JT | 3.656 | 19.11       |
| 0308187  | A4202     | 3/4" X 2JT  | 4.031 | 28.58       |
| 0308188  | A4203     | 3/4" X 3JT  | 4.375 | 26.19       |
| 0308189  | A4206     | 3/4" X 6JT  | 4.156 | 30.52       |
| 0308190  | A4233     | 3/4" X 33JT | 4.156 | 30.99       |

### Wedge Sets

- For removing taper mount chucks from arbors or chucks.



| Part No. | Description  | Use on Taper | Price /Each |
|----------|--------------|--------------|-------------|
| 0307948  | #1 WEDGE SET | 1 JT         | \$8.04      |
| 0307949  | #2 WEDGE SET | 2 JT         | 8.04        |
| 0307950  | #3 WEDGE SET | 3 JT         | 8.04        |
| 0307951  | #6 WEDGE SET | 6 & 33 JT    | 8.04        |

### Taper Shank Arbors

- Adapts Jacobs® taper to Morse tapers.



| Part No. | Model No. | Description     | OaL  | Price /Each |
|----------|-----------|-----------------|------|-------------|
| 0308157  | AO201     | 2 Morse X 1 JT  | 3.94 | \$22.08     |
| 0308158  | AO202     | 2 Morse X 2 JT  | 4.16 | 18.11       |
| 0308159  | AO203     | 2 Morse X 3 JT  | 4.50 | 17.76       |
| 0308160  | AO204     | 2 Morse X 4 JT  | 4.94 | 22.66       |
| 0308161  | AO206     | 2 Morse X 6 JT  | 4.28 | 24.36       |
| 0308162  | AO233     | 2 Morse X 33 JT | 4.28 | 18.16       |
| 0308163  | AO301     | 3 Morse X 1 JT  | 4.69 | 25.29       |
| 0308164  | AO302     | 3 Morse X 2 JT  | 4.94 | 25.29       |
| 0308165  | AO303     | 3 Morse X 3 JT  | 5.27 | 24.29       |
| 0308166  | AO304     | 3 Morse X 4 JT  | 5.70 | 27.96       |
| 0308167  | AO305     | 3 Morse X 5 JT  | 5.94 | 29.61       |
| 0308168  | AO306     | 3 Morse X 6 JT  | 5.06 | 25.29       |
| 0308169  | AO333     | 3 Morse X 33 JT | 5.06 | 25.29       |
| 0308170  | AO402     | 4 Morse X 2 JT  | 5.91 | 43.91       |
| 0308171  | AO403     | 4 Morse X 3 JT  | 6.25 | 38.63       |
| 0308172  | AO404     | 4 Morse X 4 JT  | 6.69 | 38.63       |
| 0308173  | AO405     | 4 Morse X 5 JT  | 6.91 | 54.03       |
| 0308174  | AO406     | 4 Morse X 6 JT  | 6.03 | 39.37       |
| 0308175  | AO433     | 4 Morse X 33 JT | 6.06 | 40.96       |

### Threaded Taper Shank Arbors

- Adapts threaded shank to Morse Tapers



| Part No. | Model No. | Description         | OaL  | Price /Each |
|----------|-----------|---------------------|------|-------------|
| 0308191  | AO261     | 2 Morse - 3/8" - 24 | 3.69 | \$63.77     |
| 0308192  | AO264     | 2 Morse - 1/2" - 20 | 4.06 | 63.77       |
| 0308193  | AO268     | 2 Morse - 5/8" - 16 | 4.19 | 62.64       |

### Chucking Accessories



#### Collet Stops

Used when inserting parts into any 5C Collet to make sure that they stop at the same spot. Five piece set converts standard 1" lathe collets into solid or ejector stop collets. Comes complete with all attachments and springs. Made in the USA.



| Part No. | Description                                | Price /Each |
|----------|--|-------------|
| 7002027  | Universal Collet Stop grabs on Collet I.D. | \$34.30     |

### Draw Bars for all Knee Type Milling Machines

This is a replacement part for all knee mills. They are manufactured to fit most popular machines and the Universal Bar can be used on any mill. Manufactured from low carbon steel, soft and black oxide plated. Made from tow parts - the shaft and the hex.

Universal drawbar provided with a variety of spacers which allow for adjustment of the shaft length. Sufficient spacers are provided to allow for shaft length adjustments by one quarter inch increments. Made in the USA.



| Part No. | Description                                      | Price /Each |
|----------|--|-------------|
| 7002029  | Drawbar for Bridgeport and copies                | \$23.70     |
| 7002033  | Drawbar fits any Mill - Universal Kit (pictured) | 45.00       |

### Vise Jaws

These soft jaws made from Aluminum are machined to fit the production parts being produced, and used for custom clamping applications. These are a consumable item, as the jaws are stored with each job, and fresh ones are used for each new part.

Create steps, pockets and custom shapes to hold all types of odd shaped workpieces. Made in the USA.



| Part No. | Description   | Price /Each |
|----------|---|-------------|
| 7001978  | Vise Jaws (Pair) Alum for 4" Vise 4" Lth 1-1/2" Ht 3/4" Thk | \$33.53:    |
| 7001979  | Vise Jaws (Pair) Alum for 5" Vise 5" Lth 1-1/2" Ht 3/4" Thk | 33.53:      |
| 7001980  | Vise Jaws (Pair) Alum for 6" Vise 6" Lth 2" Ht 3/4" Thk     | 32.94       |
| 7001981  | Vise Jaws (Pair) Alum for 6" Vise 6" Lth 2-1/2" Ht 1" Thk   | 40.00       |
| 7001982  | Vise Jaws (Pair) Alum for 6" Vise 6" Lth 3" Ht 1" Thk       | 43.53:      |
| 7001983  | Vise Jaws (Pair) Alum for 6" Vise 6" Lth 3" Ht 1-1/2" Thk   | 45.00:      |
| 7001984  | Vise Jaws (Pair) Alum for 6" Vise 7" Lth 2" Ht 1-1/4" Thk   | 47.00:      |

# CHUCKING ACCESSORIES, EDGE FINDERS & COLLETS

## Chuckling Accessories Cont.



### Vise Stops

Used on any milling vise. Parts stop at the same place for operations. All vise stops are made of steel and black oxide coated. Made in the USA.



| Part No. | Description                        | Price /Each |
|----------|------------------------------------|-------------|
| 7002039  | Work Stop for 5 & 6" Milling Vises | \$45.65     |
| 7002049  | E-Z Vise Stop                      | 19.15       |
| 7002048  | Mini Vise Stop                     | 16.00       |

### Vise Speed Handles

New design nests the steel arms inside the solid aluminum hub for a much stronger unit. Hub is machined - not a casting. Used on all types and brands of milling machine vises. Made in the USA.



| Part No. | Description   | Price /Each |
|----------|---|-------------|
| 7002044  | Vise Speed Handle fits 4" Milling Vises w/9/16" Hex Broach      | \$32.50:    |
| 7002046  | Vise Speed Handle fits 5" Milling Vises w/5/8" Hex Crank        | 32.50:      |
| 7002042  | Vise Speed Handle fits 6" Milling Vises w/3/4" Hex Crank        | 32.50       |
| 7002047  | Vise Speed Handle fits 8" Milling Vises w/7/8" Hex Crank        | 32.50       |
| 7002045  | Vise Speed Handle fits Import Milling Vises w/5/8" Square Crank | 32.50:      |
| 7002043  | All Steel Vise Speed Handle fits 6: Vise w/3/4" Hex Crank       | 70.59:      |

## Edge Finders



### Edge Finders

#### Features

- Body and contacts made of tool steel, hardened, ground and lapped for diameter and concentricity
- With Case



| Part No. | Description            | Price /Each |
|----------|------------------------|-------------|
| 0324790  | Single End Edge Finder | \$29.70     |
| 0324822  | Double End Edge Finder | 36.81       |

## Collets

**CENTAUR**  
PRECISION TOOLS INC.  
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### Torque Control Tap Adaptors



| Part No. | Size   | Price /Each |
|----------|--------|-------------|
| 0343213  | 0-6    | \$82.00     |
| 0343214  | 8      | 82.00       |
| 0343215  | 10     | 82.00       |
| 0343216  | 12     | 82.00       |
| 0343217  | 1/4    | 82.00       |
| 0343218  | 5/16   | 82.00       |
| 0343219  | 3/8    | 82.00       |
| 0343220  | 7/16   | 82.00       |
| 0343221  | 1/2    | 82.00       |
| 0343222  | 9/16   | 82.00       |
| 0343223  | 5/16   | 112.00      |
| 0343224  | 3/8    | 112.00      |
| 0343225  | 7/16   | 112.00      |
| 0343226  | 1/2    | 112.00      |
| 0343227  | 9/16   | 112.00      |
| 0343228  | 5/8    | 112.00      |
| 0343229  | 11/16  | 112.00      |
| 0343230  | 3/4    | 112.00      |
| 0343231  | 13/16  | 112.00      |
| 0343232  | 7/8    | 112.00      |
| 0343233  | 1/8-SS | 82.00       |
| 0343234  | 1/8-LS | 82.00       |
| 0343235  | 1/4P   | 112.00      |
| 0343236  | 3/8P   | 112.00      |
| 0343237  | 1/2P   | 112.00      |
| 0343238  | 3/8P   | 190.00      |
| 0343239  | 1/2P   | 190.00      |
| 0343240  | 3/4P   | 190.00      |
| 0343241  | 1"P    | 190.00      |

## Positive-Drive Tap Adaptors

- Fully interchangeable with Bilz and other popular tapping systems
- Engineered for smooth operation and easy release



| Part No. | Size   | Price /Each |
|----------|--------|-------------|
| 0343158  | 0-6    | \$28.75     |
| 0343159  | #8     | 28.75       |
| 0343160  | #10    | 28.75       |
| 0343161  | #12    | 28.75       |
| 0343162  | 1/4    | 28.75       |
| 0343163  | 5/16   | 28.75       |
| 0343164  | 3/8    | 28.75       |
| 0343165  | 7/16   | 28.75       |
| 0343166  | 1/2    | 28.75       |
| 0343167  | 9/16   | 28.75       |
| 0343168  | 0-6    | 39.00       |
| 0343169  | #8     | 39.00       |
| 0343170  | #10    | 39.00       |
| 0343171  | #12    | 39.00       |
| 0343172  | 1/4    | 39.00       |
| 0343173  | 5/16   | 39.00       |
| 0343174  | 3/8    | 39.00       |
| 0343175  | 7/16   | 39.00       |
| 0343176  | 1/2    | 39.00       |
| 0343177  | 9/16   | 39.00       |
| 0343178  | 5/8    | 39.00       |
| 0343179  | 11/16  | 39.00       |
| 0343180  | 3/4    | 39.00       |
| 0343181  | 13/16  | 39.00       |
| 0343182  | 7/8    | 39.00       |
| 0343183  | 13/16  | 110.00      |
| 0343184  | 7/8    | 110.00      |
| 0343185  | 15/16  | 110.00      |
| 0343186  | 1      | 110.00      |
| 0343187  | 1-1/8  | 110.00      |
| 0343188  | 1-1/4  | 110.00      |
| 0343189  | 1-3/8  | 110.00      |
| 0343190  | 1      | 207.00      |
| 0343191  | 1-1/8  | 207.00      |
| 0343192  | 1-1/4  | 207.00      |
| 0343193  | 1-3/8  | 207.00      |
| 0343194  | 1-1/2  | 207.00      |
| 0343195  | 1-5/8  | 207.00      |
| 0343196  | 1-3/4  | 207.00      |
| 0343197  | 1-7/8  | 207.00      |
| 0343198  | 1/8-SS | 28.75       |
| 0343199  | 1/8-LS | 28.75       |
| 0343200  | 1/8-SS | 39.00       |
| 0343201  | 1/8-LS | 39.00       |
| 0343202  | 1/4P   | 39.00       |
| 0343203  | 3/8P   | 39.00       |
| 0343204  | 1/2P   | 39.00       |
| 0343205  | 3/8P   | 110.00      |
| 0343206  | 1/2P   | 110.00      |
| 0343207  | 3/4P   | 110.00      |
| 0343208  | 1P     | 110.00      |
| 0343209  | 3/4P   | 207.00      |
| 0343210  | 1P     | 207.00      |
| 0343211  | 1-1/4P | 207.00      |
| 0343212  | 1-1/2P | 207.00      |

Machine Tool Accessories, Milling

# COLLETS

## Collets Cont.

**CENTAUR**  
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### External Coolant Flow Tap Adaptors

For use in coolant through applications with standard taps. For Oil Hole Taps use standard adaptors.



| Part No. | Size   | Price /Each |
|----------|--------|-------------|
| 0343246  | 0-6    | \$40.00     |
| 0343247  | 8      | 40.00       |
| 0343248  | 10     | 40.00       |
| 0343249  | 12     | 40.00       |
| 0343250  | 1/4    | 40.00       |
| 0343251  | 5/16   | 40.00       |
| 0343252  | 3/8    | 40.00       |
| 0343253  | 7/16   | 40.00       |
| 0343254  | 1/2    | 40.00       |
| 0343255  | 9/16   | 40.00       |
| 0343256  | 1/8-SS | 40.00       |
| 0343257  | 1/8-LS | 40.00       |

### Taper Shank Tap Holders Rigid Tap Holders



| Part No. | Description   | Price /Each |
|----------|---------------|-------------|
| 0343242  | CAT40 / MRT#1 | \$220.00    |
| 0343243  | CAT40 / MRT#2 | 245.00      |
| 0343244  | CAT50 /MRT#1  | 260.00      |
| 0343245  | CAT50 /MRT#2  | 275.00      |

### All Purpose Tapping Attachment For tapping operations on reversible drilling and tapping machines, lathes, mills and others.

The Centaur CDSPL provides a wide-range, twin chucking head for direct clamping of taps. There is no need for separate collets. An adjustable safety torque clutch helps prevent tap breakage. Radial parallel float compensates for misalignment between hole and tap. Length compensation on compression and tension compensates for the difference between machine feed and tap pitch.

- Double chucking
- Safety torque clutch
- Radial parallel float
- Length compensation



| Part No. | Tap Capacity | Shank | Price /Each |
|----------|--------------|-------|-------------|
| 0343261  | #0-1/2       | MT2   | \$560.00    |
| 0343262  | #0-1/2       | MT3   | 560.00      |
| 0343263  | #0-1/2       | 1"    | 560.00      |
| 0343264  | 1/4-3/4      | MT3   | 765.00      |
| 0343265  | 1/4-3/4      | MT4   | 765.00      |
| 0343266  | 1/4-3/4      | 1"    | 765.00      |

### High Grip Power Milling Chucks

- Up to five times the gripping power of traditional collet chucks
- Vibration-reducing design for outstanding surface finish
- Unique clamping system guarantees 0.0004" TIR or less at 4 inches
- Compatible with high speed machining centers with coolant-through spindles

| Part No. | Chuck      | Price /Each |
|----------|------------|-------------|
| 0343267  | V40 3/4"   | \$299.00    |
| 0343268  | V50 3/4"   | 319.00      |
| 0343269  | V40 1-1/4" | 399.00      |
| 0343270  | V50 1-1/4" | 419.00      |

### Collets for Milling Chucks

#### For 3/4" Chucks

| Part No. | Chuck | Diameter | Price /Each |
|----------|-------|----------|-------------|
| 0343271  | 3/4"  | 1/8      | \$28.00     |
| 0343272  | 3/4"  | 3/16     | 28.00       |
| 0343273  | 3/4"  | 1/4      | 28.00       |
| 0343274  | 3/4"  | 5/16     | 28.00       |
| 0343275  | 3/4"  | 3/8      | 28.00       |
| 0343276  | 3/4"  | 7/16     | 28.00       |
| 0343277  | 3/4"  | 1/2      | 28.00       |
| 0343278  | 3/4"  | 9/16     | 28.00       |
| 0343279  | 3/4"  | 5/8      | 28.00       |

### RD/ER 16 Collets

- Collapse Per Collet: 0.5/1mm. (0.019/0.039 in.)
- Capacity Per Set: 0.5mm-10mm (0.019-0.394 in.)
- Precision per DIN 6499
- Maximum Tightening Torque: 40ft/lbs.



| Part No. | Diameter | Price /Each |
|----------|----------|-------------|
| 0343280  | M3-2     | \$23.00     |
| 0343281  | M4-3     | 23.00       |
| 0343282  | M5-4     | 23.00       |
| 0343283  | M6-5     | 23.00       |
| 0343284  | M7-6     | 23.00       |
| 0343285  | M8-7     | 23.00       |
| 0343286  | M9-8     | 23.00       |
| 0343287  | M10-9    | 23.00       |
| 0343288  |          | 225.00      |
| 0343289  | 1/16     | 23.00       |
| 0343290  | 3/32     | 23.00       |
| 0343291  | 1/8      | 23.00       |
| 0343292  | 5/32     | 23.00       |
| 0343293  | 3/16     | 23.00       |
| 0343294  | 7/32     | 23.00       |
| 0343295  | 1/4      | 23.00       |
| 0343296  | 9/32     | 23.00       |
| 0343297  | 5/16     | 23.00       |
| 0343298  | 11/32    | 23.00       |
| 0343299  | 3/8      | 23.00       |
| 0343300  | 13/32    | 23.00       |

### RD/ER 16 Internal Coolant Collets

Sealed for coolant through applications, with pressure resistance tested to 1000 p.s.i.



| Part No. | Diameter | Price /Each |
|----------|----------|-------------|
| 0343301  |          | \$154.19    |
| 0343302  | M 3      | 51.45       |
| 0343303  | M 4      | 51.45       |
| 0343304  | M 5      | 51.45       |
| 0343305  | M 6      | 51.45       |
| 0343306  | M 7      | 51.45       |
| 0343307  | M 8      | 51.45       |
| 0343308  | M 9      | 51.45       |
| 0343309  | M 10     | 51.45       |
| 0343310  | 1/8      | 51.45       |
| 0343311  | 5/32     | 51.45       |
| 0343312  | 3/16     | 51.45       |
| 0343313  | 7/32     | 51.45       |
| 0343314  | 1/4      | 51.45       |
| 0343315  | 9/32     | 51.45       |
| 0343316  | 5/16     | 51.45       |
| 0343317  | 11/32    | 51.45       |
| 0343318  | 3/8      | 51.45       |

### RD/ER 16 Tapping Collets

#### RTS Rigid Tapping Collets with Square Drive

For synchronous tapping operations using any RD/ER collet chuck. Collet bore is exact tool diameter, with square drive, for accuracy and rigidity.

#### RDT Quick-Change Tapping Collets with Axial Compensation

For use with RD/ER collet chuck, these tapping collets help prevent tap breakage on machines requiring axial compensation.



| Part No. | Tap Size | Type | Price /Each |
|----------|----------|------|-------------|
| 0343319  | 0-6      | RTS  | \$49.00     |
| 0343320  | 8        | RTS  | 49.00       |
| 0343321  | 10       | RTS  | 49.00       |
| 0343322  | 12       | RTS  | 49.00       |
| 0343323  | 1/4      | RTS  | 49.00       |
| 0343324  | 5/16     | RTS  | 49.00       |
| 0343325  | 0-6      | RDS  | 80.00       |
| 0343326  | 8        | RDS  | 80.00       |
| 0343327  | 10       | RDS  | 80.00       |

### RD/ER 20 Collets

- Collapse per collet: 1mm (0.039 in.)
- Capacity per Set: 1-13mm (0.039-0.512in.)
- Precision per DIN 6499
- Maximum tightening torque: 60ft/lbs.



| Part No. | Metric Range | Price /Each |
|----------|--------------|-------------|
| 0343328  | 2-1          | \$23.60     |
| 0343329  | 3-2          | 23.60       |
| 0343330  | 4-3          | 23.60       |
| 0343331  | 5-4          | 23.60       |
| 0343332  | 6-5          | 23.60       |
| 0343333  | 7-6          | 23.60       |
| 0343334  | 8-7          | 23.60       |
| 0343335  | 9-8          | 23.60       |
| 0343336  | 10-9         | 23.60       |
| 0343337  | 11-10        | 23.60       |
| 0343338  | 12-11        | 23.60       |
| 0343339  | 13-12        | 23.60       |
| 0343340  |              | 273.00      |

## Collets Cont.

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### RD/ER 20 Collets Cont. (Inch)

| Part No. | Inch Range | Price /Each |
|----------|------------|-------------|
| 0343341  | 1/16       | \$23.60     |
| 0343342  | 3/32       | 23.60       |
| 0343343  | 1/8        | 23.60       |
| 0343344  | 5/32       | 23.60       |
| 0343345  | 3/16       | 23.60       |
| 0343346  | 7/32       | 23.60       |
| 0343347  | 1/4        | 23.60       |
| 0343348  | 9/32       | 23.60       |
| 0343349  | 5/16       | 23.60       |
| 0343350  | 11/32      | 23.60       |
| 0343351  | 3/8        | 23.60       |
| 0343352  | 13/32      | 23.60       |
| 0343353  | 7/16       | 23.60       |
| 0343354  | 15/32      | 23.60       |
| 0343355  | 1/2        | 23.60       |
| 0343356  |            | 346.50      |

### RD/ER 20 Internal Coolant Collets

Dealed for coolant through applications, with pressure resistance tested to 1000 psi.



| Part No. | Diameter | Price /Each |
|----------|----------|-------------|
| 0343357  | M 3      | \$52.50     |
| 0343358  | M 4      | 52.50       |
| 0343359  | M 5      | 52.50       |
| 0343360  | M 6      | 52.50       |
| 0343361  | M 7      | 52.50       |
| 0343362  | M 8      | 52.50       |
| 0343363  | M 9      | 52.50       |
| 0343364  | M 10     | 52.50       |
| 0343365  | M 11     | 52.50       |
| 0343366  | M 12     | 52.50       |
| 0343367  | M 13     | 52.50       |
| 0343368  | 1/8      | 52.50       |
| 0343369  | 5/32     | 52.50       |
| 0343370  | 3/16     | 52.50       |
| 0343371  | 7/32     | 52.50       |
| 0343372  | 1/4      | 52.50       |
| 0343373  | 9/32     | 52.50       |
| 0343374  | 5/16     | 52.50       |
| 0343375  | 11/32    | 52.50       |
| 0343376  | 3/8      | 52.50       |
| 0343377  | 13/32    | 52.50       |
| 0343378  | 7/16     | 52.50       |
| 0343379  | 15/32    | 52.50       |
| 0343380  | 1/2      | 52.50       |

### RD/ER 20 Tapping Collets



| Part No. | Tab Size | Type | Price /Each |
|----------|----------|------|-------------|
| 0343381  | 0-6      | RTS  | \$50.00     |
| 0343382  | 8        | RTS  | 50.00       |
| 0343383  | 10       | RTS  | 50.00       |
| 0343384  | 12       | RTS  | 50.00       |
| 0343385  | 1/4      | RTS  | 50.00       |
| 0343386  | 5/16     | RTS  | 50.00       |
| 0343387  | 3/8      | RTS  | 50.00       |
| 0343388  | 7/16     | RTS  | 50.00       |
| 0343389  | 1/2      | RTS  | 50.00       |
| 0343390  | 0-6      | RDS  | 83.00       |
| 0343391  | 8        | RDS  | 83.00       |
| 0343392  | 10       | RDS  | 83.00       |
| 0343393  | 12       | RDS  | 83.00       |
| 0343394  | 1/4      | RDS  | 83.00       |

### RD/ER 25 Collets System

- Collapse per Collet: 1mm (0.039in.)
- Capacity per Set: 1-16mm (0.039-0.630 in)
- Precision per DIN 6499
- Max. Tightening Torque: 70ft./lbs.



| Part No. | Metric Range | Price /Each |
|----------|--------------|-------------|
| 0343395  | M2-1         | \$24.15     |
| 0343396  | M3-2         | 24.15       |
| 0343397  | M4-3         | 24.15       |
| 0343398  | M5-4         | 24.15       |
| 0343399  | M6-5         | 24.15       |
| 0343400  | M7-6         | 24.15       |
| 0343401  | M8-7         | 24.15       |
| 0343402  | M9-8         | 24.15       |
| 0343403  | M10-9        | 24.15       |
| 0343404  | M11-10       | 24.15       |
| 0343405  | M12-11       | 24.15       |
| 0343406  | M13-12       | 24.15       |
| 0343407  | M14-13       | 24.15       |
| 0343408  | M15-14       | 24.15       |
| 0343409  | M16-15       | 24.15       |
| 0343410  |              | 357.00      |
| 0343411  | 1/16         | 24.15       |

### Standard Precision

| Part No. | Inch Range | Price /Each |
|----------|------------|-------------|
| 0343412  | 3/32       | \$24.15     |
| 0343413  | 1/8        | 24.15       |
| 0343414  | 5/32       | 24.15       |
| 0343415  | 3/16       | 24.15       |
| 0343416  | 7/32       | 24.15       |
| 0343417  | 1/4        | 24.15       |
| 0343418  | 9/32       | 24.15       |
| 0343419  | 5/16       | 24.15       |
| 0343420  | 11/32      | 24.15       |
| 0343421  | 3/8        | 24.15       |
| 0343422  | 13/32      | 24.15       |
| 0343423  | 7/16       | 24.15       |
| 0343424  | 15/32      | 24.15       |
| 0343425  | 1/2        | 24.15       |
| 0343426  | 17/32      | 24.15       |
| 0343427  | 9/16       | 24.15       |
| 0343428  | 19/32      | 24.15       |
| 0343429  | 5/8        | 24.15       |
| 0343430  |            | 451.50      |

### RD/ER 25 Internal Coolant Collets

Sealed for coolant through applications, with pressure resistance tested to 1000 psi.



| Part No. | Diameter | Price /Each |
|----------|----------|-------------|
| 0343431  | M 3      | \$54.60     |
| 0343432  | M 4      | 54.60       |
| 0343433  | M 5      | 54.60       |
| 0343434  | M 6      | 54.60       |
| 0343435  | M 7      | 54.60       |
| 0343436  | M 8      | 54.60       |
| 0343437  | M 9      | 54.60       |
| 0343438  | M 10     | 54.60       |
| 0343439  | M 11     | 54.60       |
| 0343440  | M 12     | 54.60       |
| 0343441  | M 13     | 54.60       |
| 0343442  | M 14     | 54.60       |
| 0343443  | M 15     | 54.60       |
| 0343444  | M 16     | 54.60       |
| 0343445  | 1/8      | 54.60       |
| 0343446  | 5/32     | 54.60       |
| 0343447  | 3/16     | 54.60       |
| 0343448  | 7/32     | 54.60       |
| 0343449  | 1/4      | 54.60       |
| 0343450  | 9/32     | 54.60       |
| 0343451  | 5/16     | 54.60       |
| 0343452  | 11/32    | 54.60       |
| 0343453  | 3/8      | 54.60       |
| 0343454  | 13/32    | 54.60       |
| 0343455  | 7/16     | 54.60       |
| 0343456  | 15/32    | 54.60       |
| 0343457  | 1/2      | 54.60       |
| 0343458  | 17/32    | 54.60       |
| 0343459  | 9/16     | 54.60       |
| 0343460  | 19/32    | 54.60       |
| 0343461  | 5/8      | 54.60       |

### RD/ER 25 Tapping Collets



| Part No. | Tap Size    | Type | Price /Each |
|----------|-------------|------|-------------|
| 0343462  | 0-6         | RTS  | \$52.00     |
| 0343463  | 8           | RTS  | 52.00       |
| 0343464  | 10          | RTS  | 52.00       |
| 0343465  | 12          | RTS  | 52.00       |
| 0343466  | 1/4         | RTS  | 52.00       |
| 0343467  | 5/16        | RTS  | 52.00       |
| 0343468  | 3/8         | RTS  | 52.00       |
| 0343469  | 7/16        | RTS  | 52.00       |
| 0343470  | 1/2         | RTS  | 52.00       |
| 0343471  | 9/16        | RTS  | 52.00       |
| 0343472  | 5/8         | RTS  | 52.00       |
| 0343473  | 1/8 PIPE_LS | RTS  | 52.00       |
| 0343474  | 0-6         | RDT  | 88.00       |
| 0343475  | 8           | RDT  | 88.00       |
| 0343476  | 10          | RDT  | 88.00       |
| 0343477  | 12          | RDT  | 88.00       |
| 0343478  | 1/4         | RDT  | 88.00       |
| 0343479  | 5/16        | RDT  | 88.00       |
| 0343480  | 3/8         | RDT  | 88.00       |
| 0343481  | 7/16        | RDT  | 88.00       |
| 0343482  | 1/2         | RDT  | 88.00       |



# COLLETS

## Collets Cont.

**CENTAUR**  
PRECISION TOOLS INC.  
An ISO 9001:2000 Certified Company

### RD/ER 32 Collets System

- Collapse per Collet: 1mm (0.039in.)
- Capacity per Set: 2-20mm (0.079-0.787 in.)
- Precision per DIN 6499
- Max. Tightening torque: 80ft./lbs.



| Part No. | Metric Range | Price /Each |
|----------|--------------|-------------|
| 0343483  | M3-2         | \$25.25     |
| 0343484  | M4-3         | 25.25       |
| 0343485  | M5-4         | 25.25       |
| 0343486  | M6-5         | 25.25       |
| 0343487  | M7-6         | 25.25       |
| 0343488  | M8-7         | 25.25       |
| 0343489  | M9-8         | 25.25       |
| 0343490  | M10-9        | 25.25       |
| 0343491  | M11-10       | 25.25       |
| 0343492  | M12-11       | 25.25       |
| 0343493  | M13-12       | 25.25       |
| 0343494  | M14-13       | 25.25       |
| 0343495  | M15-14       | 25.25       |
| 0343496  | M16-15       | 25.25       |
| 0343497  | M17-16       | 25.25       |
| 0343498  | M18-17       | 25.25       |
| 0343499  | M19-18       | 25.25       |
| 0343500  | M20-19       | 25.25       |
| 0343501  |              | 446.00      |

### Standard Precision

| Part No. | Inch Range | Price /Each |
|----------|------------|-------------|
| 0343502  | 3/32       | \$25.25     |
| 0343503  | 1/8        | 25.25       |
| 0343504  | 5/32       | 25.25       |
| 0343505  | 3/16       | 25.25       |
| 0343506  | 7/32       | 25.25       |
| 0343507  | 1/4        | 25.25       |
| 0343508  | 9/32       | 25.25       |
| 0343509  | 5/16       | 25.25       |
| 0343510  | 11/32      | 25.25       |
| 0343511  | 3/8        | 25.25       |
| 0343512  | 13/32      | 25.25       |
| 0343513  | 7/16       | 25.25       |
| 0343514  | 15/32      | 25.25       |
| 0343515  | 1/2        | 25.25       |
| 0343516  | 17/32      | 25.25       |
| 0343517  | 9/16       | 25.25       |
| 0343518  | 19/32      | 25.25       |
| 0343519  | 5/8        | 25.25       |
| 0343520  | 21/32      | 25.25       |
| 0343521  | 11/16      | 25.25       |
| 0343522  | 23/32      | 25.25       |
| 0343523  | 3/4        | 25.25       |
| 0343524  |            | 546.00      |

### RD/ER 32 Internal Coolant Collets

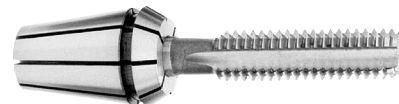
Sealed for coolant through applications, with pressure resistance tested to 1000 psi.



| Part No. | Diameter | Price /Each |
|----------|----------|-------------|
| 0343525  | M 4      | \$56.70     |
| 0343526  | M 5      | 56.70       |
| 0343527  | M 6      | 56.70       |
| 0343528  | M 7      | 56.70       |
| 0343529  | M 8      | 56.70       |
| 0343530  | M 9      | 56.70       |
| 0343531  | M 10     | 56.70       |
| 0343532  | M 11     | 56.70       |
| 0343533  | M 12     | 56.70       |
| 0343534  | M 13     | 56.70       |
| 0343535  | M 14     | 56.70       |
| 0343536  | M 15     | 56.70       |
| 0343537  | M 16     | 56.70       |
| 0343538  | M 17     | 56.70       |
| 0343539  | M 18     | 56.70       |
| 0343540  | M 19     | 56.70       |
| 0343541  | M 20     | 56.70       |
| 0343542  | 1/8      | 56.70       |
| 0343543  | 5/32     | 56.70       |
| 0343544  | 3/16     | 56.70       |
| 0343545  | 7/32     | 56.70       |
| 0343546  | 1/4      | 56.70       |
| 0343547  | 9/32     | 56.70       |
| 0343548  | 5/16     | 56.70       |
| 0343549  | 11/32    | 56.70       |
| 0343550  | 3/8      | 56.70       |
| 0343551  | 13/32    | 56.70       |
| 0343552  | 7/16     | 56.70       |
| 0343553  | 15/32    | 56.70       |
| 0343554  | 1/2      | 56.70       |
| 0343555  | 17/32    | 56.70       |
| 0343556  | 9/16     | 56.70       |
| 0343557  | 19/32    | 56.70       |
| 0343558  | 5/8      | 56.70       |
| 0343559  | 21/32    | 56.70       |
| 0343560  | 11/16    | 56.70       |
| 0343561  | 23/32    | 56.70       |
| 0343562  | 3/4      | 56.70       |

Check out our selection of lathes on page 13-164

### RD/ER 32 Tapping Collets



| Part No. | Tap Size    | Type | Price /Each |
|----------|-------------|------|-------------|
| 0343563  | 0-6         | RTS  | \$54.00     |
| 0343564  | 8           | RTS  | 54.00       |
| 0343565  | 10          | RTS  | 54.00       |
| 0343566  | 12          | RTS  | 54.00       |
| 0343567  | 1/4         | RTS  | 54.00       |
| 0343568  | 5/16        | RTS  | 54.00       |
| 0343569  | 3/8         | RTS  | 54.00       |
| 0343570  | 7/16        | RTS  | 54.00       |
| 0343571  | 1/2         | RTS  | 54.00       |
| 0343572  | 9/16        | RTS  | 54.00       |
| 0343573  | 5/8         | RTS  | 54.00       |
| 0343574  | 11/16       | RTS  | 54.00       |
| 0343575  | 3/4         | RTS  | 54.00       |
| 0343576  | 13/16       | RTS  | 54.00       |
| 0343577  | 1/8 PIPE-LS | RTS  | 54.00       |
| 0343578  | 1/4 PIPE    | RTS  | 54.00       |
| 0343579  | 0-6         | RDT  | 104.00      |
| 0343580  | 8           | RDT  | 104.00      |
| 0343581  | 10          | RDT  | 104.00      |
| 0343582  | 12          | RDT  | 104.00      |
| 0343583  | 1/4         | RDT  | 104.00      |
| 0343584  | 5/16        | RDT  | 104.00      |
| 0343585  | 3/8         | RDT  | 104.00      |
| 0343586  | 7/16        | RDT  | 104.00      |
| 0343587  | 1/2         | RDT  | 104.00      |
| 0343588  | 9/16        | RDT  | 104.00      |

### RD/ER 40 Collets System

- Collapse per Collet: 1mm (0.039 in.)
- Capacity per Set: 3-26mm (0.018-1.024 in.)
- Precision per DIN 6499
- Max. Tightening Torque: 90 ft./lbs.



| Part No. | Metric Range | Price /Each |
|----------|--------------|-------------|
| 0343590  | M4-3         | \$26.75     |
| 0343591  | M5-4         | 26.75       |
| 0343592  | M6-5         | 26.75       |
| 0343593  | M7-6         | 26.75       |
| 0343594  | M8-7         | 26.75       |
| 0343595  | M9-8         | 26.75       |
| 0343596  | M10-9        | 26.75       |
| 0343597  | M11-10       | 26.75       |
| 0343598  | M12-11       | 26.75       |
| 0343599  | M13-12       | 26.75       |
| 0343600  | M14-13       | 26.75       |
| 0343601  | M15-14       | 26.75       |
| 0343602  | M16-15       | 26.75       |
| 0343603  | M17-16       | 26.75       |
| 0343604  | M18-17       | 26.75       |
| 0343605  | M19-18       | 26.75       |
| 0343606  | M20-19       | 26.75       |
| 0343607  | M21-20       | 26.75       |
| 0343608  | M22-21       | 26.75       |
| 0343609  | M23-22       | 26.75       |
| 0343610  | M24-23       | 26.75       |
| 0343611  | M25-24       | 26.75       |
| 0343612  | M26-25       | 26.75       |
| 0343613  | 23 piece set | 603.00      |

## Collets Cont.

### CENTAUR PRECISION TOOLS INC.

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| Part No. | Inch Range   | Price /Each |
|----------|--------------|-------------|
| 0343614  | 1/8          | \$26.75     |
| 0343615  | 5/32         | 26.75       |
| 0343616  | 3/16         | 26.75       |
| 0343617  | 7/32         | 26.75       |
| 0343618  | 1/4          | 26.75       |
| 0343619  | 9/32         | 26.75       |
| 0343620  | 5/16         | 26.75       |
| 0343621  | 11/32        | 26.75       |
| 0343622  | 3/8          | 26.75       |
| 0343623  | 13/32        | 26.75       |
| 0343624  | 7/16         | 26.75       |
| 0343625  | 15/32        | 26.75       |
| 0343626  | 1/2          | 26.75       |
| 0343627  | 17/32        | 26.75       |
| 0343628  | 9/16         | 26.75       |
| 0343629  | 19/32        | 26.75       |
| 0343630  | 5/8          | 26.75       |
| 0343631  | 21/32        | 26.75       |
| 0343632  | 11/16        | 26.75       |
| 0343633  | 23/32        | 26.75       |
| 0343634  | 3/4          | 26.75       |
| 0343635  | 25/32        | 26.75       |
| 0343636  | 13/16        | 26.75       |
| 0343637  | 27/32        | 26.75       |
| 0343638  | 7/8          | 26.75       |
| 0343639  | 29/32        | 26.75       |
| 0343640  | 15/16        | 26.75       |
| 0343641  | 31/32        | 26.75       |
| 0343642  | 1            | 26.75       |
| 0343643  | 29 piece set | 766.00      |

### RD/ER 40 Internal Coolant Collets

Sealed for coolant through applications, pressure resistance tested to 1000 psi.

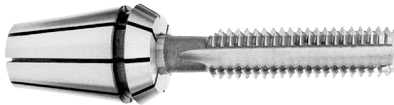


| Part No. | Diameter | Price /Each |
|----------|----------|-------------|
| 0343644  | M 4      | \$58.80     |
| 0343645  | M 5      | 58.80       |
| 0343646  | M 6      | 58.80       |
| 0343647  | M 7      | 58.80       |
| 0343648  | M 8      | 58.80       |
| 0343649  | M 9      | 58.80       |
| 0343650  | M 10     | 58.80       |
| 0343651  | M 11     | 58.80       |
| 0343652  | M 12     | 58.80       |
| 0343653  | M 13     | 58.80       |
| 0343654  | M 14     | 58.80       |
| 0343655  | M 15     | 58.80       |
| 0343656  | M 16     | 58.80       |
| 0343657  | M 17     | 58.80       |
| 0343658  | M 18     | 58.80       |
| 0343659  | M 19     | 58.80       |
| 0343660  | M 20     | 58.80       |
| 0343661  | M 21     | 58.80       |
| 0343662  | M 22     | 58.80       |
| 0343663  | M 23     | 58.80       |
| 0343664  | M 24     | 58.80       |
| 0343665  | M 25     | 58.80       |
| 0343666  | M 26     | 58.80       |
| 0343667  | 1/8      | 58.80       |
| 0343668  | 5/32     | 58.80       |
| 0343669  | 3/16     | 58.80       |
| 0343670  | 7/32     | 58.80       |

## RD/ER 40 Internal Continued

| Part No. | Diameter | Price /Each |
|----------|----------|-------------|
| 0343671  | 1/4      | \$58.80     |
| 0343672  | 9/32     | 58.80       |
| 0343673  | 5/16     | 58.80       |
| 0343674  | 11/32    | 58.80       |
| 0343675  | 3/8      | 58.80       |
| 0343676  | 13/32    | 58.80       |
| 0343677  | 7/16     | 58.80       |
| 0343678  | 15/32    | 58.80       |
| 0343679  | 1/2      | 58.80       |
| 0343680  | 17/32    | 58.80       |
| 0343681  | 9/16     | 58.80       |
| 0343682  | 19/32    | 58.80       |
| 0343683  | 5/8      | 58.80       |
| 0343684  | 21/32    | 58.80       |
| 0343685  | 11/16    | 58.80       |
| 0343686  | 23/32    | 58.80       |
| 0343687  | 3/4      | 58.80       |
| 0343688  | 25/32    | 58.80       |
| 0343689  | 13/16    | 58.80       |
| 0343690  | 27/32    | 58.80       |
| 0343691  | 7/8      | 58.80       |
| 0343692  | 29/32    | 58.80       |
| 0343693  | 15/16    | 58.80       |
| 0343694  | 31/32    | 58.80       |
| 0343695  | 1        | 58.80       |

## RD/ER 40 Tapping Collets



| Part No. | Tap Size    | Type | Price /Each |
|----------|-------------|------|-------------|
| 0343696  | 0-6         | RTS  | \$56.00     |
| 0343697  | 8           | RTS  | 56.00       |
| 0343698  | 10          | RTS  | 56.00       |
| 0343699  | 12          | RTS  | 56.00       |
| 0343700  | 1/4         | RTS  | 56.00       |
| 0343701  | 5/16        | RTS  | 56.00       |
| 0343702  | 3/8         | RTS  | 56.00       |
| 0343703  | 7/16        | RTS  | 56.00       |
| 0343704  | 1/2         | RTS  | 56.00       |
| 0343705  | 9/16        | RTS  | 56.00       |
| 0343706  | 5/8         | RTS  | 56.00       |
| 0343707  | 11/16       | RTS  | 56.00       |
| 0343708  | 3/4         | RTS  | 56.00       |
| 0343709  | 13/16       | RTS  | 56.00       |
| 0343710  | 7/8         | RTS  | 56.00       |
| 0343711  | 15/16       | RTS  | 56.00       |
| 0343712  | 1           | RTS  | 56.00       |
| 0343713  | 1/8 PIPE-LS | RTS  | 56.00       |
| 0343714  | 1/4 PIPE    | RTS  | 56.00       |
| 0343715  | 3/8 PIPE    | RTS  | 56.00       |
| 0343716  | 1/2 PIPE    | RTS  | 56.00       |
| 0343717  | 0-6         | RDT  | 103.00      |
| 0343718  | 8           | RDT  | 103.00      |
| 0343719  | 10          | RDT  | 103.00      |
| 0343720  | 12          | RDT  | 103.00      |
| 0343721  | 1/4         | RDT  | 103.00      |
| 0343722  | 5/16        | RDT  | 103.00      |
| 0343723  | 3/8         | RDT  | 103.00      |
| 0343724  | 7/16        | RDT  | 103.00      |
| 0343725  | 1/2         | RDT  | 103.00      |
| 0343726  | 9/16        | RDT  | 103.00      |
| 0343727  | 5/8         | RDT  | 103.00      |
| 0343728  | 11/16       | RDT  | 103.00      |
| 0343729  | 1/8 PIPE-LS | RDT  | 103.00      |
| 0343730  | 1/4 PIPE    | RDT  | 103.00      |

## Master Tooling Kits



| Part No. | Collet Size | Chuck Size   | No. of Pieces | Price /Each |
|----------|-------------|--------------|---------------|-------------|
| 0343731  | RD 16       | Cyl. 3/4x134 | 10            | \$320.00    |
| 0343732  | RD 16       | Cyl. 1x140   | 10            | 360.00      |
| 0343733  | RD 16       | CAT40        | 10            | 417.00      |
| 0343734  | RD 32       | Cyl. 1x150   | 18            | 491.00      |
| 0343735  | RD 32       | CAT40        | 18            | 659.00      |
| 0343736  | RD 32       | CAT50        | 18            | 689.00      |

## Straight Shank RD/ER Collet Chucks



| Part No. | A        | B          | B1         | D         | Price /Each |
|----------|----------|------------|------------|-----------|-------------|
| 0343737  | 1/2(in.) | 168(mm)    | 154(mm)    | 229(mm)   | \$85.00     |
|          |          | 6.61 (in.) | 6.06 (in.) | .87(in.)  |             |
| 0343738  | 1 (in.)  | 95 (mm)    | 50(mm)     | 229(mm)   | 70.00       |
|          |          | 3.74 (in.) | 1.97 (in.) | .87(in.)  |             |
| 0343739  | 5/8(in.) | 179(mm)    | 154(mm)    | 229(mm)   | 85.00       |
|          |          | 7.04(in.)  | 6.06 (in.) | .87(in.)  |             |
| 0343740  | 3/4 (in) | 160(mm)    | 134(mm)    | 229(mm)   | 90.00       |
|          |          | 6.40(in.)  | 5.28 (in.) | .87(in.)  |             |
| 0343741  | 1(in.)   | 160(mm)    | 134(mm)    | 229(mm)   | 110.00      |
|          |          | 6.30(in.)  | 5.28 (in.) | .87(in.)  |             |
| 0343742  | 1(in.)   | 135(mm)    | 100(mm)    | 42(mm)    | 90.00       |
|          |          | 5.31(in.)  | 3.94 (in.) | 1.65(in.) |             |

## Clamping Nuts and Wrenches



### Mini Nuts

| Part No. | Type    | Price /Each |
|----------|---------|-------------|
| 0343771  | RD 16 M | \$28.00     |
| 0343772  | RD 20 M | 32.00       |
| 0343773  | RD 25 M | 35.00       |

### Mini Wrench

| Part No. | Type   | Price /Each |
|----------|--------|-------------|
| 0343774  | E 16 M | \$15.50     |
| 0343775  | E 20 M | 17.00       |
| 0343776  | E 25 M | 18.00       |

### Hex Nuts

| Part No. | Type     | Price /Each |
|----------|----------|-------------|
| 0343777  | UM/RD 16 | \$22.00     |
| 0343778  | UM/RD 20 | 24.00       |

### E Nuts

| Part No. | Type     | Price /Each |
|----------|----------|-------------|
| 0343779  | UX/RD 16 | \$26.00     |
| 0343780  | UX/RD 20 | 28.00       |
| 0343781  | UM/RD 25 | 29.00       |
| 0343782  | UM/RD 32 | 33.00       |

### E Wrench

| Part No. | Type | Price /Each |
|----------|------|-------------|
| 0343783  | E 16 | \$12.50     |
| 0343784  | E 20 | 14.00       |
| 0343785  | E 25 | 15.50       |
| 0343786  | E 32 | 18.00       |

Machine Tool  
Accessories, Milling

# COLLETS

## Collets Cont.

**CENTAUR**  
PRECISION TOOLS INC.  
An ISO 9001:2000 Certified Company



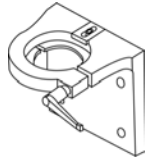
### Retention Knobs

- For machines without coolant through spindles

| Part No. | Taper  | Thread | Price /Each |
|----------|--------|--------|-------------|
| 0343787  | CAT 40 | 1/2-13 | \$14.00     |
| 0343788  | CAT 50 | 5/8-11 | 16.00       |

### Locking Fixture for all Tapers

- Fit CAT (V-Flange), BT & NMTB tapers
- Bolt down or use in vise



| Part No. | Shank | Price /Each |
|----------|-------|-------------|
| 0343789  | 40    | \$88.00     |
| 0343790  | 50    | 105.00      |

### RDG/TG 75 Collets

- Collapse per Collet: 1/64 in.
- Capacity per Set: 3/32-3/4 in.
- Precision per DIN 6341
- Max. Tightening Torque: 80ft./lbs.



| Part No. | Collet Size | Price /Each |
|----------|-------------|-------------|
| 0343806  | 3/32        | \$22.00     |
| 0343807  | 7/64        | 22.00       |
| 0343808  | 1/8         | 22.00       |
| 0343809  | 9/64        | 22.00       |
| 0343810  | 5/32        | 22.00       |
| 0343811  | 11/64       | 22.00       |
| 0343812  | 3/16        | 22.00       |
| 0343813  | 13/64       | 22.00       |
| 0343814  | 7/32        | 22.00       |
| 0343815  | 1/4         | 20.00       |
| 0343816  | 17/64       | 20.00       |
| 0343817  | 9/32        | 20.00       |
| 0343818  | 19/64       | 20.00       |
| 0343819  | 5/16        | 20.00       |
| 0343820  | 21/64       | 20.00       |
| 0343821  | 11/32       | 20.00       |
| 0343822  | 23/64       | 20.00       |
| 0343823  | 3/8         | 20.00       |
| 0343824  | 25/64       | 20.00       |
| 0343825  | 13/32       | 20.00       |
| 0343826  | 27/64       | 20.00       |
| 0343827  | 7/16        | 20.00       |
| 0343828  | 29/64       | 20.00       |
| 0343829  | 15/32       | 20.00       |
| 0343830  | 31/64       | 20.00       |
| 0343831  | 1/2         | 20.00       |
| 0343832  | 33/64       | 20.00       |
| 0343833  | 17/32       | 20.00       |
| 0343834  | 35/64       | 20.00       |
| 0343835  | 9/16        | 20.00       |
| 0343836  | 37/64       | 20.00       |
| 0343837  | 19/32       | 20.00       |
| 0343838  | 39/64       | 20.00       |
| 0343839  | 5/8         | 20.00       |
| 0343840  | 41/64       | 20.00       |
| 0343841  | 21/32       | 20.00       |
| 0343842  | 43/64       | 20.00       |
| 0343843  | 11/16       | 20.00       |
| 0343844  | 45/64       | 20.00       |
| 0343845  | 23/32       | 20.00       |
| 0343846  | 47/64       | 20.00       |
| 0343847  | 3/4         | 20.00       |

### Rigid Tapping Collets with Square Drive



| Part No. | Tap Size    | Price /Each |
|----------|-------------|-------------|
| 0343791  | 0-6         | \$30.00     |
| 0343792  | 8           | 30.00       |
| 0343793  | 10          | 30.00       |
| 0343794  | 12          | 30.00       |
| 0343795  | 1/4         | 30.00       |
| 0343796  | 5/16        | 30.00       |
| 0343797  | 3/8         | 30.00       |
| 0343798  | 7/16        | 30.00       |
| 0343799  | 1/2         | 30.00       |
| 0343800  | 9/16        | 30.00       |
| 0343801  | 5/8         | 30.00       |
| 0343802  | 11/16       | 30.00       |
| 0343803  | 3/4         | 30.00       |
| 0343804  | 1/8 PIPE-LS | 30.00       |
| 0343805  | 1/4 PIPE    | 30.00       |

### RDG/TG 100 Collets



| Part No. | Collet Size | Price /Each |
|----------|-------------|-------------|
| 0343869  | 3/32        | \$31.50     |
| 0343870  | 7/64        | 31.50       |
| 0343871  | 1/8         | 31.50       |
| 0343872  | 9/64        | 31.50       |
| 0343873  | 5/32        | 31.50       |
| 0343874  | 11/64       | 31.50       |
| 0343875  | 3/16        | 31.50       |
| 0343876  | 13/64       | 31.50       |
| 0343877  | 7/32        | 31.50       |
| 0343878  | 15/64       | 31.50       |
| 0343879  | 1/4         | 26.25       |
| 0343880  | 17/64       | 26.25       |
| 0343881  | 9/32        | 26.25       |
| 0343882  | 19/64       | 26.25       |
| 0343883  | 5/16        | 26.25       |
| 0343884  | 21/64       | 26.25       |
| 0343885  | 11/32       | 26.25       |
| 0343886  | 23/64       | 26.25       |
| 0343887  | 3/8         | 20.00       |
| 0343888  | 25/64       | 20.00       |
| 0343889  | 13/32       | 20.00       |
| 0343890  | 27/64       | 20.00       |
| 0343891  | 7/16        | 20.00       |
| 0343892  | 29/64       | 20.00       |
| 0343893  | 15/32       | 20.00       |
| 0343894  | 31/64       | 20.00       |
| 0343895  | 1/2         | 20.00       |
| 0343896  | 33/64       | 20.00       |
| 0343897  | 17/32       | 20.00       |
| 0343898  | 35/64       | 20.00       |

### Internal Coolant Collets



| Part No. | Collet Size | Price /Each |
|----------|-------------|-------------|
| 0343899  | 9/16        | \$20.00     |
| 0343900  | 37/64       | 20.00       |
| 0343901  | 19/32       | 20.00       |
| 0343902  | 39/64       | 20.00       |
| 0343903  | 5/8         | 20.00       |
| 0343904  | 41/64       | 20.00       |
| 0343905  | 21/32       | 20.00       |
| 0343906  | 43/64       | 20.00       |
| 0343907  | 11/16       | 20.00       |
| 0343908  | 45/64       | 20.00       |
| 0343909  | 23/32       | 20.00       |
| 0343910  | 47/64       | 20.00       |
| 0343911  | 3/4         | 20.00       |
| 0343912  | 49/64       | 20.00       |
| 0343913  | 25/32       | 20.00       |
| 0343914  | 51/64       | 20.00       |
| 0343915  | 13/16       | 20.00       |
| 0343916  | 53/64       | 20.00       |
| 0343917  | 27/32       | 20.00       |
| 0343918  | 55/64       | 20.00       |
| 0343919  | 7/8         | 20.00       |
| 0343920  | 57/64       | 20.00       |
| 0343921  | 29/32       | 20.00       |
| 0343922  | 59/64       | 20.00       |
| 0343923  | 15/16       | 20.00       |
| 0343924  | 61/64       | 20.00       |
| 0343925  | 31/32       | 20.00       |
| 0343926  | 63/64       | 20.00       |
| 0343927  | 1           | 20.00       |

Sealed for coolant through applications, pressure tested for 1000 psi.

| Part No. | Collet Size | Price /Each |
|----------|-------------|-------------|
| 0343930  | 5/32        | 44.10       |
| 0343931  | 11/64       | 44.10       |
| 0343932  | 3/16        | 44.10       |
| 0343933  | 13/64       | 44.10       |
| 0343934  | 7/32        | 44.10       |
| 0343935  | 15/64       | 44.10       |
| 0343936  | 1/4         | 44.10       |
| 0343937  | 17/64       | 44.10       |
| 0343938  | 9/32        | 44.10       |
| 0343939  | 19/64       | 44.10       |
| 0343940  | 5/16        | 44.10       |
| 0343941  | 21/64       | 44.10       |
| 0343942  | 11/32       | 44.10       |
| 0343943  | 23/64       | 44.10       |
| 0343944  | 3/8         | 44.10       |
| 0343945  | 25/64       | 44.10       |
| 0343946  | 13/32       | 44.10       |
| 0343947  | 27/64       | 44.10       |
| 0343948  | 7/16        | 44.10       |
| 0343949  | 29/64       | 44.10       |
| 0343950  | 15/32       | 44.10       |
| 0343951  | 31/64       | 44.10       |
| 0343952  | 1/2         | 44.10       |
| 0343953  | 33/64       | 44.10       |
| 0343954  | 17/32       | 44.10       |
| 0343955  | 35/64       | 44.10       |
| 0343956  | 9/16        | 44.10       |
| 0343957  | 37/64       | 44.10       |
| 0343958  | 19/32       | 44.10       |
| 0343959  | 39/64       | 44.10       |
| 0343960  | 5/8         | 44.10       |
| 0343961  | 41/64       | 44.10       |

## Collets Cont.

**CENTAUR**  
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### Internal Coolant Collets Cont.

| Part No. | Collet Size | Price /Each |
|----------|-------------|-------------|
| 0343962  | 21/32       | 44.10       |
| 0343963  | 43/64       | 44.10       |
| 0343964  | 11/16       | 44.10       |
| 0343965  | 45/64       | 44.10       |
| 0343966  | 23/32       | 44.10       |
| 0343967  | 47/64       | 44.10       |
| 0343968  | 3/4         | 44.10       |
| 0343969  | 49/64       | 44.10       |
| 0343970  | 25/32       | 44.10       |
| 0343971  | 51/64       | 44.10       |
| 0343972  | 13/16       | 44.10       |
| 0343973  | 53/64       | 44.10       |
| 0343974  | 27/32       | 44.10       |
| 0343975  | 55/64       | 44.10       |
| 0343976  | 7/8         | 44.10       |
| 0343977  | 57/64       | 44.10       |
| 0343978  | 29/32       | 44.10       |
| 0343979  | 59/64       | 44.10       |
| 0343980  | 15/16       | 44.10       |
| 0343981  | 61/64       | 44.10       |
| 0343982  | 31/32       | 44.10       |
| 0343983  | 63/64       | 44.10       |
| 0343984  | 1           | 44.10       |



### Internal Coolant Collet Sets

| Part No. | Set Range               | No. of Pieces | Price per UOM |
|----------|-------------------------|---------------|---------------|
| 0343928  | 3/32-1 (1/64 increment) | 59            | \$1320.00     |
| 0343929  | 3/8-1 (1/32 increment)  | 21            | 409.50        |

### RDG/TG 100 Rigid Tapping Collets with Square Drive

| Part No. | Tap Size    | Price /Each |
|----------|-------------|-------------|
| 0343848  | 0-6         | \$32.00     |
| 0343849  | 8           | 32.00       |
| 0343850  | 10          | 32.00       |
| 0343851  | 12          | 32.00       |
| 0343852  | 1/4         | 32.00       |
| 0343853  | 5/16        | 32.00       |
| 0343854  | 3/8         | 32.00       |
| 0343855  | 7/16        | 32.00       |
| 0343856  | 1/2         | 32.00       |
| 0343857  | 9/16        | 32.00       |
| 0343858  | 5/8         | 32.00       |
| 0343859  | 11/16       | 32.00       |
| 0343860  | 3/4         | 32.00       |
| 0343861  | 16/16       | 32.00       |
| 0343862  | 7/8         | 32.00       |
| 0343863  | 15/16       | 32.00       |
| 0343864  | 1           | 32.00       |
| 0343865  | 1/8 PIPE-LS | 32.00       |
| 0343866  | 1/4 PIPE    | 32.00       |
| 0343867  | 3/8 PIPE    | 32.00       |
| 0343868  | 1/2 PIPE    | 32.00       |

### RDA/DA 300 Collets

- Collapse per Collet: 1/64 in.
- Max. Tightening Torque: 20 ft./lbs



| Part No. | Collet Size | Price /Each |
|----------|-------------|-------------|
| 0343988  | 1/32        | \$32.00     |
| 0343989  | 3/64        | 32.00       |
| 0343990  | 1/16        | 17.00       |
| 0343991  | 5/64        | 17.00       |
| 0343992  | 3/32        | 17.00       |
| 0343993  | 7/64        | 17.00       |
| 0343994  | 1/8         | 11.50       |
| 0343995  | 9/64        | 11.50       |
| 0343996  | 5/32        | 11.50       |
| 0343997  | 11/64       | 11.50       |
| 0343998  | 3/16        | 11.50       |
| 0343999  | 13/64       | 11.50       |
| 0344000  | 7/32        | 11.50       |
| 0344001  | 15/64       | 11.50       |
| 0344002  | 1/4         | 11.50       |

### RDA/DA 200 Collets

- Collapse per collet: 1/64 in.
- Max. Tightening Torque: 20ft./lbs.



| Part No. | Collet Size | Price /Each |
|----------|-------------|-------------|
| 0344003  | 1/32        | \$28.00     |
| 0344004  | 3/64        | 19.00       |
| 0344005  | 1/16        | 19.00       |
| 0344006  | 5/64        | 19.00       |
| 0344007  | 3/32        | 19.00       |
| 0344008  | 7/64        | 19.00       |
| 0344009  | 1/8         | 11.50       |
| 0344010  | 9/64        | 11.50       |
| 0344011  | 5/32        | 11.50       |
| 0344012  | 11/64       | 11.50       |
| 0344013  | 3/16        | 11.50       |
| 0344014  | 13/64       | 11.50       |
| 0344015  | 7/32        | 11.50       |
| 0344016  | 15/64       | 11.50       |
| 0344017  | 1/4         | 11.50       |
| 0344018  | 17/64       | 11.50       |
| 0344019  | 9/32        | 11.50       |
| 0344020  | 19/64       | 11.50       |
| 0344021  | 5/16        | 11.50       |
| 0344022  | 21/64       | 11.50       |
| 0344023  | 11/32       | 11.50       |
| 0344024  | 23/64       | 11.50       |
| 0344025  | 3/8         | 11.50       |
| 0344026  | 25/64       | 11.50       |

### RDA/DA 100 Collets

- Collapse per collet: 1/64 in.
- Max. Tightening Torque: 35 ft./lbs.



| Part No. | Collet Size | Price /Each |
|----------|-------------|-------------|
| 0344027  | 3/64        | \$18.50     |
| 0344028  | 1/16        | 18.50       |
| 0344029  | 5/64        | 18.50       |
| 0344030  | 3/32        | 18.50       |
| 0344031  | 7/64        | 18.50       |
| 0344032  | 1/8         | 15.00       |
| 0344033  | 9/64        | 15.00       |
| 0344034  | 5/32        | 15.00       |
| 0344035  | 11/64       | 15.00       |
| 0344036  | 3/16        | 15.00       |
| 0344037  | 13/64       | 15.00       |
| 0344038  | 7/32        | 15.00       |
| 0344039  | 15/64       | 15.00       |
| 0344040  | 1/4         | 11.50       |
| 0344041  | 17/64       | 11.50       |
| 0344042  | 9/32        | 11.50       |
| 0344043  | 19/64       | 11.50       |
| 0344044  | 5/16        | 11.50       |
| 0344045  | 21/64       | 11.50       |
| 0344046  | 11/32       | 11.50       |
| 0344047  | 23/64       | 11.50       |
| 0344048  | 3/8         | 11.50       |
| 0344049  | 25/64       | 11.50       |
| 0344050  | 13/32       | 11.50       |
| 0344051  | 27/64       | 11.50       |
| 0344052  | 7/16        | 11.50       |
| 0344053  | 29/64       | 11.50       |
| 0344054  | 15/32       | 11.50       |
| 0344055  | 31/64       | 11.50       |
| 0344056  | 1/2         | 11.50       |
| 0344057  | 33/64       | 11.50       |
| 0344058  | 17/32       | 11.50       |
| 0344059  | 35/64       | 11.50       |
| 0344060  | 9/16        | 11.50       |



# COLLETS

## Collets Cont.

### **CENTAUR** PRECISION TOOLS INC. An ISO 9001:2000 Certified Company

#### RDA/DA 180

- Collapse per collet: 1/64 in.
- Max. Tightening Torque: 45 ft./lbs.



| Price<br>Part No. | Collet<br>Size | /Each   |
|-------------------|----------------|---------|
| 0344061           | 3/64           | \$23.00 |
| 0344062           | 1/16           | 23.00   |
| 0344063           | 5/64           | 23.00   |
| 0344064           | 3/32           | 23.00   |
| 0344065           | 7/64           | 23.00   |
| 0344066           | 1/8            | 20.50   |
| 0344067           | 9/64           | 20.50   |
| 0344068           | 5/32           | 20.50   |
| 0344069           | 11/64          | 20.50   |
| 0344070           | 3/16           | 20.50   |
| 0344071           | 13/64          | 20.50   |
| 0344072           | 7/32           | 20.50   |
| 0344073           | 15/64          | 20.50   |
| 0344074           | 1/4            | 14.50   |
| 0344075           | 17/64          | 14.50   |
| 0344076           | 9/32           | 14.50   |
| 0344077           | 19/64          | 14.50   |
| 0344078           | 5/16           | 14.50   |
| 0344079           | 21/64          | 14.50   |
| 0344080           | 11/32          | 14.50   |
| 0344081           | 23/64          | 14.50   |
| 0344082           | 3/8            | 14.50   |
| 0344083           | 25/64          | 14.50   |
| 0344084           | 13/32          | 14.50   |
| 0344085           | 27/64          | 14.50   |
| 0344086           | 7/16           | 14.50   |
| 0344087           | 29/64          | 14.50   |
| 0344088           | 15/32          | 14.50   |
| 0344089           | 31/64          | 14.50   |
| 0344090           | 1/2            | 14.50   |
| 0344091           | 33/64          | 14.50   |
| 0344092           | 17/32          | 14.50   |
| 0344093           | 35/64          | 14.50   |
| 0344094           | 9/16           | 14.50   |
| 0344095           | 37/64          | 14.50   |
| 0344096           | 19/32          | 14.50   |
| 0344097           | 39/64          | 14.50   |
| 0344098           | 5/8            | 14.50   |
| 0344099           | 41/64          | 14.50   |
| 0344100           | 21/32          | 14.50   |
| 0344101           | 43/64          | 14.50   |
| 0344102           | 11/16          | 14.50   |
| 0344103           | 45/64          | 14.50   |
| 0344104           | 23/32          | 14.50   |
| 0344105           | 47/64          | 14.50   |
| 0344106           | 3/4            | 14.50   |
| 0344107           | 49/64          | 14.50   |

## 5C Round Collets

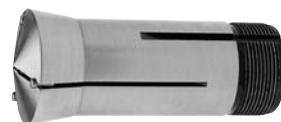
- Hardened and Ground
- External thread=1.234 x 220 RH
- Internal Thread= 1.047 x 24 RH



| Part No. | Collet Size | Price /Each |
|----------|-------------|-------------|
| 0344118  | 1/16        | \$19.00     |
| 0344119  | 5/64        | 19.00       |
| 0344120  | 3/32        | 19.00       |
| 0344121  | 7/64        | 19.00       |
| 0344122  | 1/8         | 19.00       |
| 0344123  | 9/64        | 19.00       |
| 0344124  | 5/32        | 19.00       |
| 0344125  | 11/64       | 19.00       |
| 0344126  | 3/16        | 19.00       |
| 0344127  | 13/64       | 19.00       |
| 0344128  | 7/32        | 19.00       |
| 0344129  | 15/64       | 19.00       |
| 0344130  | 1/4         | 19.00       |
| 0344131  | 17/64       | 19.00       |
| 0344132  | 9/32        | 19.00       |
| 0344133  | 19/64       | 19.00       |
| 0344134  | 5/16        | 19.00       |
| 0344135  | 21/64       | 19.00       |
| 0344136  | 11/32       | 19.00       |
| 0344137  | 23/64       | 19.00       |
| 0344138  | 3/8         | 19.00       |
| 0344139  | 25/64       | 19.00       |
| 0344140  | 13/32       | 19.00       |
| 0344141  | 27/64       | 19.00       |
| 0344142  | 7/16        | 19.00       |
| 0344143  | 29/64       | 19.00       |
| 0344144  | 15/32       | 19.00       |
| 0344145  | 31/64       | 19.00       |
| 0344146  | 1/2         | 19.00       |
| 0344147  | 33/64       | 19.00       |
| 0344148  | 17/32       | 19.00       |
| 0344149  | 35/64       | 19.00       |
| 0344150  | 9/16        | 19.00       |
| 0344151  | 37/64       | 19.00       |
| 0344152  | 19/32       | 19.00       |
| 0344153  | 39/64       | 19.00       |
| 0344154  | 5/8         | 19.00       |
| 0344155  | 41/64       | 19.00       |
| 0344156  | 21/32       | 19.00       |
| 0344157  | 43/64       | 19.00       |
| 0344158  | 11/16       | 19.00       |
| 0344159  | 45/64       | 19.00       |
| 0344160  | 23/32       | 19.00       |
| 0344161  | 47/64       | 19.00       |
| 0344162  | 3/4         | 19.00       |
| 0344163  | 49/64       | 19.00       |
| 0344164  | 25/32       | 19.00       |
| 0344165  | 51/64       | 19.00       |
| 0344166  | 13/16       | 19.00       |
| 0344167  | 53/64       | 19.00       |
| 0344168  | 27/32       | 19.00       |
| 0344169  | 55/64       | 19.00       |
| 0344170  | 7/8         | 19.00       |
| 0344171  | 57/64       | 19.00       |
| 0344172  | 29/32       | 19.00       |

| Part No. | Collet Size | Price /Each |
|----------|-------------|-------------|
| 0344173  | 59/64       | \$19.00     |
| 0344174  | 15/16       | 19.00       |
| 0344175  | 61/64       | 19.00       |
| 0344176  | 31/32       | 19.00       |
| 0344177  | 63/64       | 19.00       |
| 344178   | 1           | 19.00       |
| 0344179  | 1-1/64      | 19.00       |
| 0344180  | 1-1/32      | 19.00       |
| 0344181  | 1-3/64      | 19.00       |
| 0344182  | 1-1/16      | 19.00       |
| 0344183  | 1/8         | 29.00       |
| 0344184  | 3/16        | 29.00       |
| 0344185  | 1/4         | 29.00       |
| 0344186  | 5/16        | 29.00       |
| 0344187  | 3/8         | 29.00       |
| 0344188  | 7/16        | 29.00       |
| 0344189  | 1/2         | 29.00       |
| 0344190  | 9/16        | 29.00       |
| 0344191  | 5/8         | 29.00       |
| 0344192  | 11/16       | 29.00       |
| 0344193  | 3/4         | 29.00       |
| 0344194  | 13/16       | 29.00       |
| 0344195  | 7/8         | 29.00       |
| 0344196  | 1/8         | 29.00       |
| 0344197  | 3/16        | 29.00       |
| 0344198  | 1/4         | 29.00       |
| 0344199  | 5/16        | 29.00       |
| 0344200  | 3/8         | 29.00       |
| 0344201  | 7/16        | 29.00       |
| 0344202  | 1/2         | 29.00       |
| 0344203  | 9/16        | 29.00       |
| 0344204  | 5/8         | 29.00       |
| 0344205  | 11/16       | 29.00       |

## Emergency Collet



| Part No. | Collets                       | Price /Each |
|----------|-------------------------------|-------------|
| 0344206  | 5C Emergency Collet With Pins | \$24.00     |

## 5C Step Collet



| Part No. | Collets           | Price /Each |
|----------|-------------------|-------------|
| 0344207  | 2" 5C Step Collet | \$45.00     |
| 0344208  | 3" 5C Step Collet | 48.00       |
| 0344209  | 4" 5C Step Collet | 70.00       |
| 0344210  | 5" 5C Step Collet | 85.00       |
| 0344211  | 6" 5C Step Collet | 105.00      |

# COLLETS, VISES & TOOL HOLDERS

## Collets Cont.

**CENTAUR**  
PRECISION TOOLS INC.  
An ISO 9001:2000 Certified Company

### 5C Collet Adjustable Backstop



| Part No. | Collets                            | Price /Each |
|----------|------------------------------------|-------------|
| 0344212  | Adjustable Backstop For 5C Collets | \$20.00     |

### Collet Holder Set



| Part No. | Collets  | Price /Each |
|----------|--|-------------|
| 0344213  | 5C Collet Holder Set With Hex, Square, and Lever | \$115.00    |

### R8 Collets



| Part No. | Collet Size | Price /Each |
|----------|-------------|-------------|
| 0344214  | 1/16"       | \$19.00     |
| 0344215  | 3/32"       | 19.00       |
| 0344216  | 1/8"        | 19.00       |
| 0344217  | 5/32"       | 19.00       |
| 0344218  | 3/16"       | 19.00       |
| 0344219  | 7/32"       | 19.00       |
| 0344220  | 1/4"        | 19.00       |
| 0344221  | 9/32"       | 19.00       |
| 0344222  | 5/16"       | 19.00       |
| 0344223  | 11/32"      | 19.00       |
| 0344224  | 3/8"        | 19.00       |
| 0344225  | 13/32"      | 19.00       |
| 0344226  | 7/16"       | 19.00       |
| 0344227  | 15/32"      | 19.00       |
| 0344228  | 1/2"        | 19.00       |
| 0344229  | 17/32"      | 19.00       |
| 0344230  | 9/16"       | 19.00       |
| 0344231  | 19/32"      | 19.00       |
| 0344232  | 5/8"        | 19.00       |
| 0344233  | 21/32"      | 19.00       |
| 0344234  | 11/16"      | 19.00       |
| 0344235  | 23/32"      | 19.00       |
| 0344236  | 3/4"        | 19.00       |
| 0344237  | 7/8"        | 19.00       |

## Vises

### Milling Vise



### Precision Milling Vise-Rugged 6" Wide Vector Angle Jaw, 7-5/8" Open Cap, HD Standard Milling Vise

| Part No. | Height | OaL | Width  | Weight | Price /EA |
|----------|--------|-----|--------|--------|-----------|
| 0333291  | 4 3/4" | 19" | 6 1/4" | 74.5   | \$366.00  |

### Optional Swivel Base-360° (0333291 and 0333292)

| Part No. | Weight | Price /Each |
|----------|--------|-------------|
| 0333295  | 22     | \$140.00    |

### Hi Precision Rugged 6" x 8.8" Opening; ± 0.0002" Parallel Bedway, Vector Angle Jaw, Heavy Duty Milling Vise

| Part No. | Height | OaL    | Width | Weight | Price /EA |
|----------|--------|--------|-------|--------|-----------|
| 0333292  | 4 5/8" | 17.63" | 6"    | 74.5   | \$384.00  |

### 6" x 9" Capacity Vector Angle Jaws Heavy Duty Hi-Prec Milling Vise

| Part No. | Height | OaL | Width | Weight | Price /EA |
|----------|--------|-----|-------|--------|-----------|
| 0333293  | 4.88"  | 18" | 6"    | 88     | \$440.00  |

### Optional Swivel Base-360° (0333291)

| Part No. | Weight | Price /Each |
|----------|--------|-------------|
| 0333296  | 22     | \$140.00    |

### 8" x 10" Jaw Open ±0.0004" Bed Parallel HD Milling Vise

| Part No. | Height | OaL   | Width | Weight | Price /EA |
|----------|--------|-------|-------|--------|-----------|
| 0333294  | 7.47"  | 21.8" | 8"    | 150    | \$750.00  |

### Optional Swivel Base-360° (0333294)

| Part No. | Weight | Price /Each |
|----------|--------|-------------|
| 0333297  | 36     | \$348.00    |



### DoubleLock® Vises Manual

- Large Capacity
- 80,000 PSI
- Repeatable clamping to .0002"
- Self-Adjusting over the entire clamping range
- 10 year limited warranty



| Part No. | A      | B     | C       | D      | J      | FF Max | Price /Each |
|----------|--------|-------|---------|--------|--------|--------|-------------|
| 7015574  | 2.375" | 4.00" | 16.125" | 2.094" | 1.115" | 3.00"  | \$995.00:   |
| 7015575  | 3.125" | 6.00" | 21.00"  | 2.69"  | 1.485" | 4.00"  | 1340.00:    |
| 7015576  | 3.75"  | 8.06" | 30.00"  | 4.00"  | 1.695" | 6.00"  | 3366.00:    |

## Tool Holders



### Milling Machine Arbors For 30-40-50 National Standard Taper Spindles

- Type A arbors are provided with end pilots 23/32 x 1-3/4"



| Part No.       | Taper | Style  | Pilot Dia. | Price /Each |
|----------------|-------|--------|------------|-------------|
| 7001071        | 30    | A10-2  | 7/8        | \$223.87:   |
| 7001072        | 30    | A10-2  | 1          | 245.61:     |
| 7001073        | 30    | A10-2  | 1.1/4      | 272.78:     |
| 7001074        | 30    | A10-3  | 1.1/4      | 272.78:     |
| 7001075        | 40    | A10    | 7/8        | 242.35:     |
| 7001076        | 40    | A16-3  | 7/8        | 358.63:     |
| 7001077        | 40    | A8     | 1          | 245.61:     |
| 7001078        | 40    | A10    | 1          | 261.91:     |
| 7001079        | 40    | A12    | 1          | 305.38:     |
| 7001080        | 40    | A16-3  | 1          | 361.89:     |
| 7001081        | 40    | A8     | 1.1/4      | 260.82:     |
| 7001082        | 40    | A10    | 1.1/4      | 290.17:     |
| 7001083        | 40    | A12    | 1.1/4      | 312.98:     |
| 7001084        | 40    | A16-3  | 1.1/4      | 381.45:     |
| 7001085        | 50    | A10    | 7/8        | 307.56:     |
| 7001086        | 50    | A18-4  | 7/8        | 452.09:     |
| 7001087        | 50    | A8     | 1          | 256.47:     |
| 7001088        | 50    | A12    | 1          | 342.33:     |
| 7001089        | 50    | A18-4  | 1          | 417.31:     |
| 7001090        | 50    | A8     | 1.1/4      | 279.30:     |
| 7001091        | 50    | A12    | 1.1/4      | 392.32:     |
| 7001092        | 50    | A18-4  | 1.1/4      | 477.09:     |
| <b>Style B</b> |       |        |            |             |
| 7001093        | 30    | B1     | 1          | 164.10:     |
| 7001094        | 30    | B2     | 1          | 176.05:     |
| 7001095        | 40    | B14-3  | 7/8        | 259.74:     |
| 7001096        | 40    | B16-3  | 7/8        | 324.94:     |
| 7001097        | 40    | B3     | 1          | 160.84:     |
| 7001098        | 40    | B14-3  | 1          | 333.64:     |
| 7001099        | 40    | B3     | 1          | 415.14:     |
| 7001100        | 40    | B14-3  | 1.1/4      | 165.19:     |
| 7001101        | 40    | B14-3  | 1.1/4      | 365.15:     |
| 7001102        | 40    | B20-3  | 1.1/4      | 446.66:     |
| 7001103        | 40    | B20-4  | 1.1/2      | 516.21:     |
| 7001104        | 50    | B3-1/2 | 1          | 201.05:     |
| 7001105        | 50    | B15-4  | 1          | 365.15:     |
| 7001106        | 50    | B18-4  | 1          | 409.71:     |
| 7001107        | 50    | B24-4  | 1          | 477.09:     |
| 7001108        | 50    | B3-1/2 | 1.1/4      | 194.53:     |
| 7001109        | 50    | B15-4  | 1.1/4      | 415.14:     |
| 7001110        | 50    | B18-4  | 1.1/4      | 436.87:     |
| 7001111        | 50    | B24-4  | 1.1/4      | 507.52:     |
| 7001112        | 50    | B30-4  | 1.1/4      | 637.93:     |
| 7001113        | 50    | B3-1/2 | 1.1/2      | 231.48:     |
| 7001114        | 50    | B18-4  | 1.1/2      | 471.65:     |
| 7001115        | 50    | B24-5  | 1.1/2      | 564.03:     |
| 7001116        | 50    | B30-5  | 1.1/2      | 685.74:     |
| 7001117        | 50    | B36-5  | 1.1/2      | 772.68:     |
| 7001118        | 50    | B24-5  | 2          | 685.74:     |
| 7001119        | 50    | B30-5  | 2          | 775.94:     |
| 7001120        | 50    | B36-5  | 2          | 860.71:     |
| 7001121        | 50    | B36-6  | 2.1/2      | 1319.31:    |
| 7001122        |       |        |            | 4.00:       |

Machine Tool Accessories, Milling

# TOOL HOLDERS

## Tool Holders Cont.



### Jacobs Taper Arbors

- Constructed of alloy steel for long, durable service life.
- Hardened to RC 56-60 for long service life.
- Shiny taper with black oxide finish for the best combination of accuracy and durability.
- Taper T.I.R. <.0002"



| Part No. | Taper  | Taper Shank     | Price /Each |
|----------|--------|-----------------|-------------|
| 7001709  | BT-40  | #2 JACOBS TAPER | \$110.00    |
| 7001755  | CAT-40 | #2 JACOBS TAPER | 100.00      |
| 7001870  | CAT-50 | #2 JACOBS TAPER | 117.00      |

| Part No. | Taper  | Taper Shank     | Price /Each |
|----------|--------|-----------------|-------------|
| 7001711  | BT-40  | #3 JACOBS TAPER | \$105.00    |
| 7001757  | CAT-40 | #3 JACOBS TAPER | 100.00      |
| 7001872  | CAT-50 | #3 JACOBS TAPER | 111.00      |

| Part No. | Taper  | Taper Shank     | Price /Each |
|----------|--------|-----------------|-------------|
| 7001759  | CAT-40 | #4 JACOBS TAPER | \$105.00    |
| 7001874  | CAT-50 | #4 JACOBS TAPER | 117.00      |

| Part No. | Taper  | Taper Shank     | Price /Each |
|----------|--------|-----------------|-------------|
| 7001761  | CAT-40 | #6 JACOBS TAPER | \$103.00    |
| 7001877  | CAT-50 | #6 JACOBS TAPER | 117.00      |

| Part No. | Taper  | Taper Shank      | Price /Each |
|----------|--------|------------------|-------------|
| 7001735  | BT-40  | #33 JACOBS TAPER | \$105.00    |
| 7001823  | CAT-40 | #33 JACOBS TAPER | 100.00      |
| 7001935  | CAT-50 | #33 JACOBS TAPER | 117.00      |

### Morse Tapers

- Constructed of alloy steel for long, durable service life.
- Hardened to RC 56-60 for long service life.
- Shiny taper with black oxide finish for the best combination of accuracy and durability.
- Taper T.I.R. <.0002"



| Part No. | Taper  | Taper Shank X Gage Length | Price /Each |
|----------|--------|---------------------------|-------------|
| 7001754  | CAT-40 | #1 MORSE TAP X 1.75"      | \$109.00    |
| 7001868  | CAT-50 | #1 MORSE TAP X 2.75"      | 155.00      |

| Part No. | Taper  | Taper Shank X Gage Length | Price /Each |
|----------|--------|---------------------------|-------------|
| 7001710  | BT-40  | #2 MORSE TAP X 1.75"      | \$112.00    |
| 7001756  | CAT-40 | #2 MORSE TAP X 1.75"      | 102.00      |
| 7001871  | CAT-50 | #2 MORSE TAP X 2.75"      | 134.00      |

| Part No. | Taper  | Taper Shank X Gage Length | Price /Each |
|----------|--------|---------------------------|-------------|
| 7001712  | BT-40  | #3 MORSE TAP X 2.50"      | \$113.00    |
| 7001758  | CAT-40 | #3 MORSE TAP X 1.75"      | 102.00      |
| 7001873  | CAT-50 | #3 MORSE TAP X 2.25"      | 134.00      |

| Part No. | Taper  | Taper Shank X Gage Length | Price /Each |
|----------|--------|---------------------------|-------------|
| 7001760  | CAT-40 | #4 MORSE TAP X 2.00"      | \$102.00    |
| 7001875  | CAT-50 | #4 MORSE TAP X 2.25"      | 134.00      |

| Part No. | Taper  | Taper Shank X Gage Length | Price /Each |
|----------|--------|---------------------------|-------------|
| 7001876  | CAT-50 | #5 MORSE TAP X 2.75"      | 163.00      |

### Blank Bars

- Constructed of ANSI 8620 steel for long, durable service life.
- Taper hardened to RC 56-60 for long service life.
- Body hardened to RC15-30 to allow for machinability.
- Shiny taper with black oxide finish for the best combination of accuracy and durability.
- Parsymmetry design for high-speed operation.



| Part No.          | Taper  | Bore          | Price /Each |
|-------------------|--------|---------------|-------------|
| <b>Blank Bars</b> |        |               |             |
| 7001806           | CAT-40 | 2.5" OD X 8"  | \$216.00    |
| 7001930           | CAT-50 | 2.7" OD X 8"  | 217.00      |
| 7001940           | CAT-50 | 4" OD X 11"   | 217.00      |
| 7001941           | CAT-50 | 4" OD X 7"    | 217.00      |
| 7001951           | CAT-50 | 6.12" OD X 7" | 333.00      |

### Boring Head Holders

- Constructed of alloy steel for long, durable service life.
- Hardened to RC 56-60 for long service life.
- Shiny taper with black oxide finish for the best combination of accuracy and durability.
- Parsymmetry design for high-speed operation.



| Part No.                           | Taper  | Thread Size X Gage Length | Price /Each |
|------------------------------------|--------|---------------------------|-------------|
| <b>7/8-20" Boring Head Holders</b> |        |                           |             |
| 7001850                            | CAT-40 | 7/8" THREAD X 1.50"       | \$139.00    |
| 7001851                            | CAT-40 | 7/8" THREAD X 1.88"       | 139.00      |

| Part No.                             | Taper  | Thread Size X Gage Length | Price /Each |
|--------------------------------------|--------|---------------------------|-------------|
| <b>1 1/2-18" Boring Head Holders</b> |        |                           |             |
| 7001784                              | CAT-40 | 1 1/2" THREAD X 1.88"     | \$139.00    |
| 7001785                              | CAT-40 | 1 1/2" THREAD X 2"        | 139.00      |
| 7001897                              | CAT-50 | 1-1/2" THREAD X 1.50"     | 159.00      |

### Single Angle Collet Chucks

- Through -spindle coolant capability.
- Parsymmetry design for high speed operation.
- Constructed of alloy steel for long, durable service life.



| Part No.                  | Taper  | Collet Size X Gage Length | Price /Each |
|---------------------------|--------|---------------------------|-------------|
| <b>75PG Collet Series</b> |        |                           |             |
| 7001749                   | BT-40  | 75SA X 2.75"              | \$137.00    |
| 7001846                   | CAT-40 | 75 X 3.00"                | 109.00      |

| Part No.                   | Taper  | Collet Size X Gage Length | Price /Each |
|----------------------------|--------|---------------------------|-------------|
| <b>100PG Collet Series</b> |        |                           |             |
| 7001715                    | BT-40  | Single Angle              | \$127.00    |
| 7001767                    | CAT-40 | 100SA X 3.00"             | 110.00      |
| 7001768                    | CAT-40 | 100SA X 5.00"             | 128.00      |
| 7001769                    | CAT-40 | 100SA X 6.50"             | 146.00      |
| 7001882                    | CAT-50 | 100SA X 3.00"             | 138.00      |
| 7001883                    | CAT-50 | 100SA X 3.50"             | 139.00      |
| 7001884                    | CAT-50 | 100SA X 5.50"             | 151.00      |
| 7001885                    | CAT-50 | 100SA X 7.50"             | 166.00      |

| Part No.                             | Taper  | Collet Size X Gage Length | Price /Each |
|--------------------------------------|--------|---------------------------|-------------|
| <b>Flange Entry Coolant (Form B)</b> |        |                           |             |
| 7001856                              | CAT-40 | 100SA X 3.00" B           | \$142.00    |
| 7001857                              | CAT-40 | 100SA X 5.00" B           | 193.00      |
| 7001965                              | CAT-50 | 100 X 3.50" B             | 178.00      |
| 7001966                              | CAT-50 | 100 X 5.50" B             | 201.00      |

| Part No.                   | Taper  | Collet Size X Gage Length | Price /Each |
|----------------------------|--------|---------------------------|-------------|
| <b>150PG Collet Series</b> |        |                           |             |
| 7001902                    | CAT-50 | 150 X 3.00"               | \$224.00    |
| 7001903                    | CAT-50 | 150 X 3.50"               | 224.00      |
| 7001904                    | CAT-50 | 150 X 5.50"               | 229.00      |

## Tool Holders Cont.

# PARLEC

### Double-Angle Collet Chucks

- Collet seat taper T.I.R. <.0004".
- Through spindle coolant capability.
- Parasymmetry design for high-speed operation.
- Hardened to RC 52-56 to avoid damaging collet chuck threads.



| Part No. | Taper  | Tapper Shank X Gage Length | Price /Each |
|----------|--------|----------------------------|-------------|
| 7001731  | BT-40  | 300 DA X 3.00"             | \$147.00    |
| 7001814  | CAT-40 | 300 DA X 3.38"             | 140.00      |
| 7001815  | CAT-40 | 300 DA X 5.15"             | 176.00      |

| Part No. | Taper  | Tapper Shank X Gage Length | Price /Each |
|----------|--------|----------------------------|-------------|
| 7001727  | BT-40  | 200DA X 2.75"              | \$147.00    |
| 7001799  | CAT-40 | 200DA X 2.73"              | 132.00      |
| 7001800  | CAT-40 | 200 DA X 3.00"             | 140.00      |
| 7001801  | CAT-40 | 200DA X 5.00"              | 176.00      |

| Part No. | Taper  | Tapper Shank X Gage Length | Price /Each |
|----------|--------|----------------------------|-------------|
| 7001725  | BT-40  | 180DA X 3.00" long         | \$147.00    |
| 7001792  | CAT-40 | 180DA X 2.95"              | 132.00      |
| 7001793  | CAT-40 | 180DA X 3.38"              | 140.00      |
| 7001794  | CAT-40 | 180 DA X 5.15"             | 176.00      |
| 7001911  | CAT-50 | 180DA X 3.38"              | 179.00      |
| 7001912  | CAT-50 | 180DA X 6.15"              | 182.00      |
| 7001913  | CAT-50 | 180DA X 8.15"              | 216.00      |

### ER Collet Chucks

- Collet seat taper T.I.R. <.0002"
- Hardened to RC 52-56 to avoid damaging collet chuck threads
- Through-spindle coolant capability.
- Accepts DIN 5499-B collets



| Part No.                  | Taper  | Collet Size      | Price /Each |
|---------------------------|--------|------------------|-------------|
| <b>ER11 Collet Series</b> |        |                  |             |
| 7001773                   | CAT-40 | 11ER X 2.50"     | \$167.00    |
| 7001774                   | CAT-40 | 11ER X 4.00"     | 182.00      |
| 7001775                   | CAT-40 | 11ER+J92 X 6.00" | 202.00      |

| Part No.                  | Taper  | Collet Size    | Price /Each |
|---------------------------|--------|----------------|-------------|
| <b>ER16 Collet Series</b> |        |                |             |
| 7001722                   | BT-40  | 16ER X 2.50"   | \$185.00    |
| 7001723                   | BT-40  | 16ER X 3.00"   | 172.00      |
| 7001724                   | BT-40  | 16ER X 5.00"   | 182.00      |
| 7001789                   | CAT-40 | 16ER X 2.50"   | 174.00      |
| 7001790                   | CAT-40 | 16 ER X 3.00"  | 165.00      |
| 7001791                   | CAT-40 | 16 ER X 5.00"  | 183.00      |
| 7001908                   | CAT-50 | 16ER X 4.00"   | 185.00      |
| 7001909                   | CAT-50 | 16ER X 6.00"   | 197.00      |
| 7001910                   | CAT-50 | 16ER X 8.00"   | 229.00      |
| 7001859*                  | CAT-40 | 16ER X 3.00" B | 215.00      |

\*Flange Coolant

| Part No.                  | Taper  | Collet Size     | Price /Each |
|---------------------------|--------|-----------------|-------------|
| <b>ER20 Collet Series</b> |        |                 |             |
| 7001728                   | BT-40  | 20ER X 4.00"    | \$172.00    |
| 7001729                   | BT-40  | 20ER X 6.00"    | 191.00      |
| 7001802                   | CAT-40 | 20ER X 3.00"    | 168.00      |
| 7001803                   | CAT-40 | 20 ERX 4.00"    | 172.00      |
| 7001804                   | CAT-40 | 20 ERX 6.00"    | 186.00      |
| 7001805                   | CAT-40 | 20 ERX 8.00"    | 208.00      |
| 7001916                   | CAT-50 | 20ER X 4.00"    | 199.00      |
| 7001917                   | CAT-50 | 20ER X 6.00"    | 214.00      |
| 7001918                   | CAT-50 | 20 ERX 8.00"    | 238.00      |
| 7001860*                  | CAT-40 | 20 ER X 4.00" B | 212.00      |

\*Flange Coolant

| Part No.                  | Taper  | Collet Size  | Price /Each |
|---------------------------|--------|--------------|-------------|
| <b>ER25 Collet Series</b> |        |              |             |
| 7001811                   | CAT-40 | 25ER X 2.50" | \$168.00    |
| 7001812                   | CAT-40 | 25ER X 4.00" | 176.00      |
| 7001813                   | CAT-40 | 25ER X 6.00" | 202.00      |
| 7001924                   | CAT-50 | 25ER X 4.00" | 202.00      |
| 7001925                   | CAT-50 | 25ER X 6.00" | 217.00      |
| 7001926                   | CAT-50 | 25ER X 8.00" | 240.00      |

| Part No.                  | Taper  | Collet Size    | Price /Each |
|---------------------------|--------|----------------|-------------|
| <b>ER32 Collet Series</b> |        |                |             |
| 7001733                   | BT-40  | 32ER X 4.00"   | \$182.00    |
| 7001734                   | BT-40  | 32ER X 6.00"   | 202.00      |
| 7001819                   | CAT-40 | 32ER X 3.00"   | 174.00      |
| 7001820                   | CAT-40 | 32ER X 4.00"   | 176.00      |
| 7001821                   | CAT-40 | 32ER X 6.00"   | 192.00      |
| 7001822                   | CAT-40 | 32ER X 8.00"   | 296.00      |
| 7001932                   | CAT-50 | 32ER X 4.00"   | 204.00      |
| 7001933                   | CAT-50 | 32ER X 6.00"   | 219.00      |
| 7001934                   | CAT-50 | 32ER X 8.00"   | 238.00      |
| 7001861*                  | CAT-40 | 32ER X 4.00" B | 227.00      |
| 7001968                   | CAT-50 | 32ER X 4.00"   | 272.00      |
| 7001969                   | CAT-50 | 32ER X 6.00"   | 272.00      |

\*Flange Coolant

| Part No.                  | Taper  | Collet Size   | Price /Each |
|---------------------------|--------|---------------|-------------|
| <b>ER40 Collet Series</b> |        |               |             |
| 7001738                   | BT-40  | 40ER X 4.00"  | \$193.00    |
| 7001828                   | CAT-40 | 40ER X 4.00"  | 176.00      |
| 7001829                   | CAT-40 | 40 ER X 6.00" | 202.00      |
| 7001942                   | CAT-50 | 40ER X 4.00"  | 233.00      |
| 7001943                   | CAT-50 | 40ER X 6.00"  | 256.00      |
| 7001944                   | CAT-50 | 40ER X 8.00"  | 302.00      |

### Shell Mill Holders

- Parsymmetry design for high-speed operation.
- Constructed of alloy steel for long, durable service life.
- Shiny taper with black oxide finish for the best combination of accuracy and durability.
- Shell mill pilot T.I.R. <.0002"



| Part No.             | Taper  | Pilot Dia. X Gage Length | Price /Each |
|----------------------|--------|--------------------------|-------------|
| <b>3/4" Diameter</b> |        |                          |             |
| 7001750              | BT-40  | 3/4" X 2.00"             | \$130.00    |
| 7001847              | CAT-40 | 3/4" X 1.38"             | 135.00      |
| 7001848              | CAT-40 | 3/4" X 1.50"             | 124.00      |
| 7001849              | CAT-40 | 3/4" X 4.00"             | 151.00      |
| 7001958              | CAT-50 | 3/4" X 1.50"             | 147.00      |
| 7001959              | CAT-50 | 3/4" X 3.50"             | 176.00      |
| 7001960              | CAT-50 | 3/4" X 5.50"             | 246.00      |

| Part No.               | Taper  | Pilot Dia. X Gage Length | Price /Each |
|------------------------|--------|--------------------------|-------------|
| <b>09- 1" Diameter</b> |        |                          |             |
| 7001716                | BT-40  | 1" X 2.00"               | \$130.00    |
| 7001770                | CAT-40 | 1" X 1.00"               | 135.00      |
| 7001771                | CAT-40 | 1" X 2.00"               | 124.00      |
| 7001772                | CAT-40 | 1" X 4.00"               | 159.00      |
| 7001886                | CAT-50 | 1" X 2.00"               | 144.00      |
| 7001887                | CAT-50 | 1" X 4.00"               | 178.00      |
| 7001888                | CAT-50 | 1" X 6.00"               | 203.00      |

| Part No.               | Taper  | Pilot Dia. X Gage Length | Price /Each |
|------------------------|--------|--------------------------|-------------|
| <b>1 1/4" Diameter</b> |        |                          |             |
| 7001719                | BT-40  | 1 1/4" X 2.25"           | \$141.00    |
| 7001781                | CAT-40 | 1 1/4" X 1.62"           | 173.00      |
| 7001782                | CAT-40 | 1 1/4" X 2.25"           | 130.00      |
| 7001783                | CAT-40 | 1 1/4" X 4.00"           | 159.00      |
| 7001894                | CAT-50 | 1 1/4" X 1.50"           | 160.00      |
| 7001895                | CAT-50 | 1 1/4" X 3.50"           | 185.00      |
| 7001896                | CAT-50 | 1 1/4" X 5.50"           | 242.00      |

| Part No.               | Taper  | Pilot Dia. X Gage Length | Price /Each |
|------------------------|--------|--------------------------|-------------|
| <b>1 1/2" Diameter</b> |        |                          |             |
| 7001721                | BT-40  | 1 1/2" X 2.25"           | \$150.00    |
| 7001787                | CAT-40 | 1 1/2" X 2.40"           | 138.00      |
| 7001788                | CAT-40 | 1 1/2" X 4.00"           | 173.00      |
| 7001905                | CAT-50 | 1 1/2" X 2.40"           | 151.00      |
| 7001906                | CAT-50 | 1 1/2" X 4.00"           | 186.00      |
| 7001907                | CAT-50 | 1 1/2" X 6.00"           | 239.00      |

| Part No.           | Taper  | Pilot Dia. X Gage Length | Price /Each |
|--------------------|--------|--------------------------|-------------|
| <b>2" Diameter</b> |        |                          |             |
| 7001920            | CAT-50 | 2" X 2.40"               | \$191.00    |
| 7001921            | CAT-50 | 2" X 4.00"               | 217.00      |
| 7001922            | CAT-50 | 2" X 6.00"               | 318.00      |

| Part No.               | Taper  | Pilot Dia. X Gage Length | Price /Each |
|------------------------|--------|--------------------------|-------------|
| <b>2 1/2" Diameter</b> |        |                          |             |
| 7001928                | CAT-50 | 2 1/2" X 2.40"           | \$249.00    |
| 7001929                | CAT-50 | 2 1/2" X 4.00"           | 310.00      |

| Part No.                       | Taper  | Pilot Dia. X Gage Length | Price /Each |
|--------------------------------|--------|--------------------------|-------------|
| <b>Shell/Face Mill Holders</b> |        |                          |             |
| 7001927                        | CAT-50 | 2 1/2"                   | \$298.00    |

### Stub Arbors

- Shiny taper with black oxide finish for the best combination of accuracy and durability.
- Arbor shaft T.I.R. <.0002"
- Hardened to RC 56-60for long service life.
- Parasymmetry design for high-speed operation.



| Part No.              | Taper  | Pilot Dia. | Price /Each |
|-----------------------|--------|------------|-------------|
| <b>1" Stub Arbors</b> |        |            |             |
| 7001766               | CAT-40 | 1" X 4.00" | \$217.00    |

| Part No.                  | Taper  | Pilot Dia.     | Price /Each |
|---------------------------|--------|----------------|-------------|
| <b>1 1/4" Stub Arbors</b> |        |                |             |
| 7001780                   | CAT-40 | 1 1/4" X 4.00" | \$217.00    |
| 7001893                   | CAT-50 | 1 1/4" X 4.00" | 268.00      |

| Part No.              | Taper  | Pilot Dia. | Price /Each |
|-----------------------|--------|------------|-------------|
| <b>2" Stub Arbors</b> |        |            |             |
| 7001919               | CAT-50 | 2" X 6.00" | \$340.00    |



# TOOL HOLDERS

## Tool Holders Cont.

# PARLEC

### Weldon Style End Mill Holders

#### Weldon Style

- Constructed of alloy for long, durable service life.
- Through-spindle coolant capability.
- Parasymmetry design for high-speed operation.
- End mill socket T.I.R.<.0002".
- Hardened to RC 56-60 for long service life.



| Part No.    | Taper  | Diameter X Gage Length | Price /Each |
|-------------|--------|------------------------|-------------|
| <b>14mm</b> |        |                        |             |
| 7001864     | CAT-40 | 14 MM X 2.62"          | \$124.00    |

| Part No.    | Taper  | Diameter X Gage Length | Price /Each |
|-------------|--------|------------------------|-------------|
| <b>16mm</b> |        |                        |             |
| 7001971     | CAT-50 | M16 X 3.75"            | \$146.00    |

| Part No.    | Taper  | Diameter X Gage Length | Price /Each |
|-------------|--------|------------------------|-------------|
| <b>20mm</b> |        |                        |             |
| 7001865     | CAT-40 | 20 MM X 3.50"          | \$124.00    |
| 7001972     | CAT-50 | M20 X 3.75"            | 146.00      |

| Part No.    | Taper  | Diameter X Gage Length | Price /Each |
|-------------|--------|------------------------|-------------|
| <b>25mm</b> |        |                        |             |
| 7001866     | CAT-40 | 25 MM X 4.00"          | \$124.00    |
| 7001973     | CAT-50 | M25 X 4.00"            | 146.00      |

| Part No.    | Taper  | Diameter X Gage Length | Price /Each |
|-------------|--------|------------------------|-------------|
| <b>32mm</b> |        |                        |             |
| 7001867     | CAT-40 | 32 MM X 4.00"          | \$124.00    |
| 7001974     | CAT-50 | M32 X 4.00"            | 146.00      |

| Part No.    | Taper  | Diameter X Gage Length | Price /Each |
|-------------|--------|------------------------|-------------|
| <b>40mm</b> |        |                        |             |
| 7001975     | CAT-50 | M40 X 4.00"            | \$146.00    |

| Part No.             | Taper  | Diameter X Gage Length | Price /Each |
|----------------------|--------|------------------------|-------------|
| <b>1/8" Diameter</b> |        |                        |             |
| 7001708              | BT-40  | 1/8" X 2.25"           | \$142.00    |
| 7001751              | CAT-40 | 1/8" X 1.75"           | 120.00      |
| 7001752              | CAT-40 | 1/8" X 2.50"           | 120.00      |
| 7001753              | CAT-40 | 1/8" X 3.00"           | 132.00      |

| Part No.              | Taper  | Diameter X Gage Length | Price /Each |
|-----------------------|--------|------------------------|-------------|
| <b>3/16" Diameter</b> |        |                        |             |
| 7001726               | BT-40  | 3/16" X 2.25"          | \$107.00    |
| 7001795               | CAT-40 | 3/16" X 1.75"          | 102.00      |
| 7001796               | CAT-40 | 3/16" X 2.50"          | 102.00      |
| 7001797               | CAT-40 | 3/16" X 3.00"          | 108.00      |
| 7001798               | CAT-40 | 3/16" X 6"             | 141.00      |

| Part No.             | Taper  | Diameter X Gage Length | Price /Each |
|----------------------|--------|------------------------|-------------|
| <b>1/4" Diameter</b> |        |                        |             |
| 7001730              | BT-40  | 1/4" X 2.25"           | \$113.00    |
| 7001807              | CAT-40 | 1/4" X 1.75"           | 102.00      |
| 7001808              | CAT-40 | 1/4" X 2.50"           | 102.00      |
| 7001809              | CAT-40 | 1/4" X 3.00"           | 103.00      |
| 7001810              | CAT-40 | 1/4" X 6"              | 147.00      |
| 7001869              | CAT-50 | 1/4" X 2.50"           | 132.00      |

| Part No.              | Bore          | Taper  | Price /Each |
|-----------------------|---------------|--------|-------------|
| <b>5/16" Diameter</b> |               |        |             |
| 7001732               | 5/16" X 2.25" | BT-40  | \$108.00    |
| 7001816               | 5/16" X 1.75" | CAT-40 | 93.00       |
| 7001817               | 5/16" X 2.50" | CAT-40 | 93.00       |
| 7001818               | 5/16" X 6"    | CAT-40 | 141.00      |
| 7001931               | 5/16" X 2.50" | CAT-50 | 145.00      |

| Part No.             | Taper  | Diameter X Gage Length | Price /Each |
|----------------------|--------|------------------------|-------------|
| <b>3/8" Diameter</b> |        |                        |             |
| 7001736              | BT-40  | 3/8" X 2.25"           | \$96.00     |
| 7001737              | BT-40  | 3/8" X 4.00"           | 122.00      |
| 7001824              | CAT-40 | 3/8" X 1.75"           | 93.00       |
| 7001825              | CAT-40 | 3/8" X 2.50"           | 93.00       |
| 7001826              | CAT-40 | 3/8" X 4.50"           | 102.00      |

| Part No.                   | Taper  | Diameter X Gage Length | Price /Each |
|----------------------------|--------|------------------------|-------------|
| <b>3/8" Diameter cont.</b> |        |                        |             |
| 7001827                    | CAT-40 | 3/8" X 6"              | \$126.00    |
| 7001936                    | CAT-50 | 3/8" X 2.50"           | 110.00      |
| 7001937                    | CAT-50 | 3/8" X 4.50"           | 123.00      |
| 7001938                    | CAT-50 | 3/8" X 6.50"           | 142.00      |
| 7001939                    | CAT-50 | 3/8" X 8.00"           | 249.00      |

| Part No.              | Taper  | Diameter X Gage Length | Price /Each |
|-----------------------|--------|------------------------|-------------|
| <b>7/16" Diameter</b> |        |                        |             |
| 7001739               | BT-40  | 7/16" X 2.25"          | \$108.00    |
| 7001830               | CAT-40 | 7/16" X 1.75"          | 98.00       |
| 7001831               | CAT-40 | 7/16" X 2.62"          | 98.00       |
| 7001945               | CAT-50 | 7/16" X 2.62"          | 126.00      |

| Part No.             | Taper  | Diameter X Gage Length | Price /Each |
|----------------------|--------|------------------------|-------------|
| <b>1/2" Diameter</b> |        |                        |             |
| 7001740              | BT-40  | 1/2" X 1.75"           | \$96.00     |
| 7001741              | BT-40  | 1/2" X 2.25"           | 96.00       |
| 7001742              | BT-40  | 1/2" X 4.00"           | 122.00      |
| 7001832              | CAT-40 | 1/2" X 1.75"           | 93.00       |
| 7001833              | CAT-40 | 1/2" X 2.62"           | 93.00       |
| 7001834              | CAT-40 | 1/2" X 4.62"           | 102.00      |
| 7001835              | CAT-40 | 1/2" X 6"              | 120.00      |
| 7001946              | CAT-50 | 1/2" X 2.62"           | 110.00      |
| 7001947              | CAT-50 | 1/2" X 4.62"           | 123.00      |
| 7001948              | CAT-50 | 1/2" X 6.62"           | 135.00      |
| 7001949              | CAT-50 | 1/2" X 8"              | 249.00      |
| 7001862*             | CAT-40 | 1/2" X 2.62" B         | 123.00      |

\*Flange Coolant

| Part No.              | Taper  | Diameter X Gage Length | Price /Each |
|-----------------------|--------|------------------------|-------------|
| <b>9/16" Diameter</b> |        |                        |             |
| 7001836               | CAT-40 | 9/16" X 1.75"          | \$98.00     |
| 7001837               | CAT-40 | X 9/16" X 2.62"        | 130.00      |
| 7001950               | CAT-50 | 9/16" X 2.62"          | 151.00      |

| Part No.             | Taper  | Diameter X Gage Length | Price /Each |
|----------------------|--------|------------------------|-------------|
| <b>5/8" Diameter</b> |        |                        |             |
| 7001743              | BT-40  | 5/8" X 1.75"           | \$101.00    |
| 7001744              | BT-40  | 5/8" X 2.25"           | 101.00      |
| 7001745              | BT-40  | 5/8" X 6"              | 125.00      |
| 7001838              | CAT-40 | 5/8" X 1.75"           | 93.00       |
| 7001839              | CAT-40 | 5/8" X 2.75"           | 93.00       |
| 7001840              | CAT-40 | 5/8" X 3.00"           | 93.00       |
| 7001841              | CAT-40 | 5/8" X 6"              | 119.00      |
| 7001952              | CAT-50 | 5/8" X 3.75"           | 112.00      |
| 7001953              | CAT-50 | 5/8" X 5.75"           | 123.00      |
| 7001954              | CAT-50 | 5/8" X 7.75"           | 147.00      |

| Part No.             | Taper  | Diameter X Gage Length | Price /Each |
|----------------------|--------|------------------------|-------------|
| <b>3/4" Diameter</b> |        |                        |             |
| 7001746              | BT-40  | 3/4" X 1.75"           | \$96.00     |
| 7001747              | BT-40  | 3/4" X 3.38"           | 101.00      |
| 7001748              | BT-40  | 3/4" X 6"              | 130.00      |
| 7001842              | CAT-40 | 3/4" X 1.75"           | 93.00       |
| 7001843              | CAT-40 | 3/4" X 3.50"           | 93.00       |
| 7001844              | CAT-40 | 3/4" X 3.00"           | 93.00       |
| 7001845              | CAT-40 | 3/4" X 6"              | 113.00      |
| 7001955              | CAT-50 | 3/4" X 1.62"           | 116.00      |
| 7001956              | CAT-50 | 3/4" X 3.75"           | 112.00      |
| 7001957              | CAT-50 | 3/4" X 5.75"           | 123.00      |
| 7001863*             | CAT-40 | 3/4" X 3.75" B         | 123.00      |
| 7001970*             | CAT-50 | 3/4" X 3.75" B         | 150.00      |

\*Flange Coolant

| Part No.             | Taper  | Diameter X Gage Length | Price /Each |
|----------------------|--------|------------------------|-------------|
| <b>7/8" Diameter</b> |        |                        |             |
| 7001852              | CAT-40 | 7/8" X 1.75"           | \$108.00    |
| 7001853              | CAT-40 | 7/8" X 3.75"           | 101.00      |
| 7001854              | CAT-40 | 7/8" X 3.50"           | 108.00      |
| 7001961              | CAT-50 | 7/8" X 3.75"           | 118.00      |
| 7001962              | CAT-50 | 7/8" X 5.75"           | 137.00      |

| Part No.           | Taper  | Diameter X Gage Length | Price /Each |
|--------------------|--------|------------------------|-------------|
| <b>1" Diameter</b> |        |                        |             |
| 7001713            | BT-40  | 1" X 1.75"             | \$106.00    |
| 7001714            | BT-40  | 1" X 4.00"             | 103.00      |
| 7001762            | CAT-40 | 1" X 1.75"             | 103.00      |
| 7001763            | CAT-40 | 1" X 3.00"             | 103.00      |
| 7001764            | CAT-40 | 1" X 4.00"             | 96.00       |
| 7001765            | CAT-40 | C1" X 6"               | 114.00      |
| 7001878            | CAT-50 | 1" X 1.62"             | 116.00      |
| 7001879            | CAT-50 | 1" X 4.00"             | 113.00      |
| 7001880            | CAT-50 | 1" X 6"                | 127.00      |
| 7001881            | CAT-50 | 1" X 8"                | 135.00      |
| 7001855*           | CAT-40 | 1" X 4.00" B           | 136.00      |
| 7001964*           | CAT-50 | 1" X 4.00" B           | 154.00      |

\*Flange Coolant

| Part No.               | Taper  | Diameter X Gage Length | Price /Each |
|------------------------|--------|------------------------|-------------|
| <b>1 1/4" Diameter</b> |        |                        |             |
| 7001717                | BT-40  | 1 1/4" X 2.00"         | \$120.00    |
| 7001718                | BT-40  | 1 1/4" X 4.00"         | 114.00      |
| 7001776                | CAT-40 | 1 1/4" X 2.00"         | 113.00      |
| 7001777                | CAT-40 | 1 1/4" X 4.00"         | 109.00      |
| 7001778                | CAT-40 | 1 1/4" X 4.25"         | 114.00      |
| 7001779                | CAT-40 | 1 1/4" X 6"            | 126.00      |
| 7001889                | CAT-50 | 1 1/4" X 2.62"         | 125.00      |
| 7001890                | CAT-50 | 1 1/4" X 4.00"         | 124.00      |
| 7001891                | CAT-50 | 1 1/4" X 6"            | 134.00      |
| 7001892                | CAT-50 | 1 1/4" X 8"            | 152.00      |
| 7001858*               | CAT-40 | 1 1/4" X 4.00" B       | 140.00      |
| 7001967*               | CAT-50 | 1 1/4" X 4.00" B       | 176.00      |

\*Flange Coolant

| Part No.               | Taper  | Diameter X Gage Length | Price /Each |
|------------------------|--------|------------------------|-------------|
| <b>1 1/2" Diameter</b> |        |                        |             |
| 7001720                | BT-40  | 1 1/2" X 4.00"         | \$126.00    |
| 7001786                | CAT-40 | 1 1/2" X 4.00"         | 116.00      |
| 7001898                | CAT-50 | 1 1/2" X 2.62"         | 152.00      |
| 7001899                | CAT-50 | 1 1/2" X 4.00"         | 134.00      |
| 7001900                | CAT-50 | 1 1/2" X 6"            | 158.00      |
| 7001901                | CAT-50 | 1 1/2" X 8"            | 174.00      |

| Part No.           | Taper  | Diameter X Gage Length | Price /Each |
|--------------------|--------|------------------------|-------------|
| <b>2" Diameter</b> |        |                        |             |
| 7001914            | CAT-50 | 2" X 5.62"             | \$182.00    |
| 7001915            | CAT-50 | 2" X 7.62              | 242.00      |

| Part No.               | Taper  | Diameter X Gage Length | Price /Each |
|------------------------|--------|------------------------|-------------|
| <b>2 1/2" Diameter</b> |        |                        |             |
| 7001923                | CAT-50 | 2 1/2" X 6.50"         | \$250.00    |

# BORING HEADS, H/V SUPER SPACERS & ROTARY TABLES

## Boring Heads

# PARLEC

### Flynn Boring Head Sets 640 B.H.S

With a 1-7/8" body, 3/8" rd. & 5/16" sq. bar holes, and an offset of 5/16" square makes the 640 boring head an excellent tool for small hole boring. The cross hole is broached to 5/16" square, as well as 3/8" rd. The 640set is very versatile with a boring range of 1/4" to 4".

|              |           |
|--------------|-----------|
| Part No.     | 7010715   |
| Bar Capacity | 3/8"      |
| Range        | 1/4-4.00  |
| Mount        | 1 1/8-18  |
| Price/Each   | \$345.00: |

### 43 B.H.S. & 25-ED

This 3" head has a two way tool holder for boring small and large holes with a range of 1/4" to 7". The 1/2" square cross hole is at a 15° angle to body slide for boring bottom holes and fly cutting. Bar holes are 1/2" rd. & 1/2" sq. with an offset of 1"

|              |           |
|--------------|-----------|
| Part No.     | 7010716   |
| Bar Capacity | 1/2"      |
| Range        | 1/4-7.00  |
| Mount        | 1 7/16-12 |
| Price/Each   | \$400.00: |

### 63 B.H.S.

The 63 boring head is housed in a 3" body, and has multiple uses. You can use 1/2", 5/8" rd. or 1/2" sq. tools. The 63 set has a boring range of 3" rd. on center, 5/8" offset for small to medium boring. Cross hole 5/8" round and 1/2" sq. for boring large holes.

|              |           |
|--------------|-----------|
| Part No.     | 7010717   |
| Bar Capacity | 1/2"      |
| Range        | 3/8-10.00 |
| Mount        | 1 7/16-12 |
| Price/Each   | \$475.00: |

### 65 B.H.S

With a boring range of 5/8" to 13" large, hole boring heavy stock removal and finish cuts are all possible with 65 set. The 4" body comes with 3/4" round and 3/4" square bar holes.

|              |           |
|--------------|-----------|
| Part No.     | 7010718   |
| Bar Capacity | 3/4"      |
| Range        | 5/8-13.00 |
| Mount        | 2.00-12   |
| Price/Each   | \$700.00: |

## 40 Series Boring Heads

| Part No. | Bar Capacity | Range      | Mount     | Overall Ht. | Price /Each |
|----------|--------------|------------|-----------|-------------|-------------|
| 7010719  | .500"        | 1/4-7.00   | 1 7/16-12 | 3.25"       | \$295.00:   |
| 7010720  | .500"        | 1/4-7.00   | 1 7/16-12 | 3.25"       | 295.00:     |
| 7010721  | .625"        | 3/8-8.00   | 1 7/16-12 | 3.25"       | 295.00:     |
| 7010722  | .75"         | 1/2-10.00  | 1 7/16-12 | 4.125"      | 395.00:     |
| 7010723  | 1.00"        | 3/4-12.00  | 2.00-12   | 4.125"      | 475.00:     |
| 7010724  | 1.25"        | 1.00-14.00 | 2.00-12   | 4.625"      | 575.00:     |
| 7010725  | .375"        | 1/4-4.00   | 1 1/8-18  | 2.125"      | 225.00:     |
| 7010726  | .500"        | 3/8-10.00  | 1 7/16-12 | 3.125"      | 325.00      |
| 7010727  | .625"        | 1/2-11.00  | 1 7/16-12 | 3.125"      | 350.00      |
| 7010728  | .75"         | 5/8-13.00  | 2.00-12   | 3.75"       | 475.00      |

## Extra Heavy Duty Heads

| Part No. | Bar Capacity | Range       | Mount   | Overall Ht. | Price /Each |
|----------|--------------|-------------|---------|-------------|-------------|
| 7010729  | 1.00"        | 3/4-15.00   | 2.00-12 | 5.375"      | \$600.00:   |
| 7010730  | 1.25"        | 1.00-17.00  | 2.00-12 | 5.375"      | 700.00:     |
| 7010731  | 1.50"        | 1 1/4-20.00 | 2.00-12 | 5.375"      | 1000.00:    |
| 7010732  | 2.00"        | 2.00-25.00  | 2.00-12 | 5.875"      | 1800.00:    |

## Boring and Facing Heads

- Smooth continuous gear driven feed.
- Deep dovetail and tapered gib assures rigidity.
- Over half of tool block always engaged in body.
- Cross hole is broach square.
- All heads threaded for Flynn standard shanks.

| Part No. | Bar Capacity | Range   | Mount     | Overall Ht. | Price /Each |
|----------|--------------|---------|-----------|-------------|-------------|
| 7010733  | .75"         | 0-10.00 | 1 7/16-12 | 5.00"       | \$1425.00:  |
| 7010734  | 1.00"        | 0-15.00 | 1 7/16-12 | 5.75"       | 1650.00:    |
| 7010735  | 1.25"        | 0-19.00 | 1 7/16-12 | 5.75"       | 2700.00:    |

## Spot Facer/Facing Head

| Part No. | Body Dia.    | Bar Capacity | Range    | Mount  | Overall Ht. | Price /Each |
|----------|--------------|--------------|----------|--------|-------------|-------------|
| 7010736  | .50" & .625" | 1.75"        | 1 1/8-18 | 3.875" | \$1025.00:  |             |
| 7010737  | .625"        | 1.5"         | 1 1/8-18 | 3.875" | 1025.00:    |             |
| 7010738  | .75"         | 1.5"         | 1 1/8-18 | 3.875" | 1025.00:    |             |

## H/V Super Spacers



### H/V Super Spacers Horizontal-Vertical

**Standard Accessories:**  
2 mounting bolts with T-Nuts, 2 Hex Keys, 1 chuck wrench, 2 eye bolts and 2 locating keys



| Part No. | Chuck | Hole Dia. | Price /Each |
|----------|-------|-----------|-------------|
| 7001238  | 6"    | 1.6"      | \$842.63:   |
| 7001239  | 8"    | 2.1"      | 1078.56:    |
| 7001240  | 12"   | 4.0"      | 3235.68:    |

## Optional Accessories

| Part No. | Chuck                                 | Plate (in) | Price /Each |
|----------|---------------------------------------|------------|-------------|
| 7001258  | 5"                                    |            | \$545.35:   |
| 7001241  | 6"                                    |            | 101.12:     |
| 7001242  | 8"                                    |            | 112.57:     |
| 7001243  | 12"                                   |            | 301.09:     |
| 7001244  | 5-C Collet Chuck For HVV Super Spacer | 6"         | 91.00:      |
| 7001245  | 5-C Collet Chuck For HVV Super Spacer | 8"         | 94.37:      |
| 7001246  |                                       | 4"         | 169.87:     |
| 7001247  |                                       | 6"         | 221.78:     |
| 7001248  |                                       | 8"         | 246.72:     |
| 7001249  |                                       | 12"        | 483.33:     |
| 7001250  |                                       | 6"         | 87.30:      |
| 7001251  |                                       | 8"         | 112.57:     |
| 7001252  |                                       | 10"        | 192.79:     |
| 7001253  |                                       | 12"        | 249.42:     |
| 7001254  |                                       | 6"         | 273.68:     |
| 7001255  |                                       | 8"         | 379.52:     |
| 7001256  |                                       | 10" & 12"  | 435.47:     |
| 7001257  |                                       | 16"        | 506.92:     |

## Rotary Tables



### Rotary Tables

- Tables can be used horizontally and vertically



| Part No. | Table Size | Price /Each |
|----------|------------|-------------|
| 7001259  | 6"         | \$872.96:   |
| 7001260  | 8"         | 1122.38:    |
| 7001261  | 10"        | 1245.74:    |
| 7001262  | 12"        | 1578.74:    |
| 7001263  | 16"        | 1854.45:    |
| 7001264  | 20"        | 3875.40:    |

Machine Tool  
Accessories, Milling

# LATHE CHUCKS

## Lathe Chucks



### Self Centering Scroll Chucks- Type A Direct Mount, A Type, 3 Jaw Manual Scroll, Semi Steel with 2 Piece Jaws



| Part No. | Taper | Diameter | Price /Each |
|----------|-------|----------|-------------|
| 7001272  | A1-5  | 6"       | \$390.02:   |
| 7001273  | A1-5  | 8"       | 443.35:     |
| 7001274  | A1-6  | 8"       | 443.35:     |
| 7001275  | A2-5  | 10"      | 597.90:     |
| 7001276  | A1-6  | 10"      | 597.90:     |
| 7001277  | A1-8  | 10"      | 597.90:     |
| 7001278  | A2-6  | 12"      | 862.24:     |
| 7001279  | A1-8  | 12"      | 862.24:     |
| 7001280  | A2-6  | 16"      | 1556.65:    |
| 7001281  | A2-8  | 16"      | 1556.65:    |
| 7001282  | A1-11 | 16"      | 1556.65:    |

### Self Centering Scroll Chucks- Type D 3-Jaw, D1 Type, Direct Mount, Semi-Steel w/ 2 Piece Jaws



| Part No. | Diameter | Taper | Price /Each |
|----------|----------|-------|-------------|
| 7001283  | 5"       | D1-3  | \$336.04:   |
| 7001284  | 5"       | D1-4  | 327.44:     |
| 7001285  | 6"       | D1-3  | 404.89:     |
| 7001286  | 6"       | D1-4  | 404.89:     |
| 7001287  | 8"       | D1-3  | 505.60:     |
| 7001288  | 8"       | D1-4  | 505.60:     |
| 7001289  | 8"       | D1-5  | 505.60:     |
| 7001290  | 8"       | D1-6  | 505.60:     |
| 7001291  | 10"      | D1-5  | 674.12:     |
| 7001292  | 10"      | D1-6  | 674.12:     |
| 7001293  | 10"      | D1-8  | 674.12:     |
| 7001294  | 12"      | D1-6  | 953.84:     |
| 7001295  | 12"      | D1-8  | 953.84:     |
| 7001296  | 12"      | D1-11 | 953.84:     |
| 7001297  | 16"      | D1-6  | 1642.65:    |
| 7001298  | 16"      | D1-8  | 1642.65:    |
| 7001299  | 16"      | D1-11 | 1642.65:    |

### Self Centering Scroll Chucks- Type L 3-Jaw, Type L, Direct Mount



| Part No. | Taper | Diameter | Price /Each |
|----------|-------|----------|-------------|
| 7001300  | L-00  | 6"       | \$378.33:   |
| 7001301  | L-0   | 6"       | 378.33:     |
| 7001302  | L-00  | 8"       | 483.91:     |
| 7001303  | L-0   | 8"       | 483.91:     |
| 7001304  | L-1   | 8"       | 483.91:     |
| 7001305  | L-0   | 10"      | 637.07:     |
| 7001306  | L-1   | 10"      | 637.07:     |
| 7001307  | L-2   | 10"      | 637.07:     |
| 7001308  | L-0   | 12"      | 937.77:     |
| 7001309  | L-1   | 12"      | 937.77:     |
| 7001310  | L-2   | 12"      | 937.77:     |
| 7001311  | L-1   | 16"      | 1599.30:    |
| 7001312  | L-2   | 16"      | 1599.30:    |

### Threaded Direct Mount Scroll Chucks



| Part No. | Diameter | Thread    | Price /Each |
|----------|----------|-----------|-------------|
| 7001313  | 4"       | 1"-10     | \$262.24:   |
| 7001314  | 4"       | 1-1/2"-8  | 262.24:     |
| 7001315  | 4"       | 1-1/8"-12 | 262.24:     |
| 7001316  | 5"       | 1"-10     | 288.81:     |
| 7001317  | 5"       | 1-1/2"-8  | 288.81:     |
| 7001318  | 6"       | 1-1/2"-8  | 370.63:     |
| 7001319  | 6"       | 2-1/4"-8  | 370.63:     |
| 7001320  | 8"       | 1-1/2"-8  | 469.23:     |
| 7001321  | 8"       | 2-1/4"-8  | 469.23:     |
| 7001322  | 8"       | 2-3/8"-6  | 469.23:     |
| 7001323  | 10"      | 2-1/4"-8  | 658.74:     |
| 7001324  | 12"      | 2-3/8"-6  | 932.86:     |
| 7001325  | 12"      | 2-3/4"-8  | 932.86:     |

### Plain Back Scroll Chucks 3 Jaw



| Part No. | Diameter | Price /Each |
|----------|----------|-------------|
| 7001326  | 4"       | \$181.82:   |
| 7001327  | 5"       | 187.41:     |
| 7001328  | 6"       | 220.98:     |
| 7001329  | 8"       | 279.02:     |
| 7001330  | 10"      | 377.62:     |
| 7001331  | 12"      | 553.84:     |
| 7001332  | 16"      | 895.00:     |

### Front Mounting Self Centering 3 Jaw, Front Mounting Plain Back, with Solid Jaws



| Part No. | Diameter | Price /Each |
|----------|----------|-------------|
| 7001333  | 3"       | \$199.88:   |
| 7001334  | 3.3"     | 198.60:     |
| 7001335  | 4"       | 225.17:     |
| 7001336  | 5"       | 207.90:     |
| 7001337  | 6"       | 251.75:     |
| 7001338  | 8"       | 304.90:     |
| 7001339  | 10"      | 444.06:     |
| 7001340  | 12"      | 643.86:     |
| 7001341  | 16"      | 1090.20:    |
| 7001342  | 5"       | 246.15:     |
| 7001343  | 6"       | 293.71:     |
| 7001344  | 8"       | 369.23:     |
| 7001345  | 10"      | 511.19:     |
| 7001346  | 12"      | 734.27:     |
| 7001347  | 16"      | 1304.90:    |
| 7001348  | 5"       | 462.95:     |
| 7001349  | 6"       | 406.58:     |
| 7001350  | 8"       | 481.80:     |
| 7001351  | 10"      | 662.42:     |
| 7001352  | 12"      | 993.71:     |
| 7001353  | 16"      | 1875.52:    |

### 3 & 4 Jaw Precision Chucks- Plain Back Forged Steel Body, Plain Back Chucks, Back Plates Required



| Part No. | Diameter | Price /Each |
|----------|----------|-------------|
| 7001354  | 5"       | \$350.26:   |
| 7001355  | 6"       | 399.18:     |
| 7001356  | 8"       | 460.40:     |
| 7001357  | 10"      | 733.19:     |
| 7001358  | 12"      | 996.19:     |
| 7001359  | 16"      | 2064.83:    |
| 7001381  | 4"       | 289.32:     |
| 7001382  | 5"       | 348.13:     |
| 7001383  | 6"       | 377.40:     |
| 7001384  | 8"       | 451.56:     |
| 7001385  | 10"      | 595.70:     |
| 7001386  | 12"      | 889.08:     |

## Lathe Chucks Cont.



### 3 & 4 Jaw Precision Chucks-A1/A2 Type Forged Steel Body, Direct Mount



| Part No.                     | Diameter | Taper | Price /Each |
|------------------------------|----------|-------|-------------|
| 7001360                      | 6"       | A1-5  | \$504.89:   |
| 7001361                      | 8"       | A1-5  | 643.36:     |
| 7001362                      | 8"       | A1-6  | 643.36:     |
| 7001363                      | 10"      | A1-6  | 853.85:     |
| 7001364                      | 10"      | A1-8  | 853.85:     |
| 7001365                      | 12"      | A2-6  | 1197.20:    |
| 7001366                      | 12"      | A1-8  | 1375.63:    |
| 7001367                      | 16"      | A2-8  | 2239.86:    |
| 7001368                      | 16"      | A1-11 | 2179.88:    |
| <b>D1 Type, Direct Mount</b> |          |       |             |
| 7001369                      | 6"       | D1-3  | \$555.69:   |
| 7001370                      | 6"       | D1-4  | 555.69:     |
| 7001371                      | 6"       | D1-5  | 555.69:     |
| 7001372                      | 8"       | D1-5  | 710.01:     |
| 7001373                      | 8"       | D1-6  | 710.01:     |
| 7001374                      | 10"      | D1-6  | 931.71:     |
| 7001375                      | 10"      | D1-8  | 931.71:     |
| 7001376                      | 12"      | D1-6  | 1238.90:    |
| 7001377                      | 12"      | D1-8  | 1238.90:    |
| 7001378                      | 12"      | D1-11 | 1238.90:    |
| 7001379                      | 16"      | D1-8  | 2410.41:    |
| 7001380                      | 16"      | D1-11 | 2410.41:    |

### 4 Jaw Independent Lathe Chucks Steel & Semi-steel Body, Plain Back with Solid Jaws



| Part No. | Diameter | Chuck   | Price /Each |
|----------|----------|---|-------------|
| 7001387  | 5"       | 4-Jaw Independent Semi-Steel, Plain Back, With Solid Jaws   | \$183.79:   |
| 7001388  | 6"       | 4-Jaw Independent Semi-Steel, Plain Back, With Solid Jaws   | 210.84:     |
| 7001389  | 8"       | 4-Jaw Independent Semi-Steel, Plain Back, With Solid Jaws   | 278.51:     |
| 7001390  | 10"      | 4-Jaw Independent Semi-Steel, Plain Back, With Solid Jaws   | 331.38:     |
| 7001391  | 12"      | 4-Jaw Independent Semi-Steel, Plain Back, With Solid Jaws   | 424.53:     |
| 7001392  | 16"      | 4-Jaw Independent Semi-Steel, Plain Back, With Solid Jaws   | 566.14:     |
| 7001393  | 8"       | 4-Jaw Independent Semi-Steel, Plain Back, With 2 Piece Jaws | 903.47:     |
| 7001394  | 10"      | 4-Jaw Independent Semi-Steel, Plain Back, With 2 Piece Jaws | 895.57:     |
| 7001395  | 12"      | 4-Jaw Independent Semi-Steel, Plain Back, With 2 Piece Jaws | 1172.28:    |
| 7001396  | 16"      | 4-Jaw Independent Semi-Steel, Plain Back, With 2 Piece Jaws | 1555.21:    |

### Rotating Chucks 3 Jaw, Self Centering with MT Shanks



| Part No.                         | Chuck  | Diameter | Shank | Price /Each |
|----------------------------------|--|----------|-------|-------------|
| 7001397                          | 3-Jaw Rotating Chuck, Semi Steel With Solid Jaws   | 3"       | 2 MT  | \$265.30:   |
| 7001398                          | 3-Jaw Rotating Chuck, Semi Steel With Solid Jaws   | 4"       | 3 MT  | 300.22:     |
| 7001399                          | 3-Jaw Rotating Chuck, Semi Steel With Solid Jaws   | 5"       | 4 MT  | 351.49:     |
| 7001400                          | 3-Jaw Rotating Chuck, Semi Steel With Solid Jaws   | 6-1/4"   | 5 MT  | 472.00:     |
| <b>w/fine adjustment SET/TRU</b> |  |          |       |             |
| 7001404                          | 3-Jaw Rotating Chuck, Steel With Solid Jaws        | 4"       | 3 MT  | \$637.90:   |
| 7001405                          | 3-Jaw Rotating Chuck, Steel With 2 Piece Jaws Jaws | 5"       | 4 MT  | 713.99:     |
| 7001406                          | 3-Jaw Rotating Chuck, Semi Steel With Solid Jaws   | 6-1/4"   | 5 MT  | 913.98:     |

### 4" 5C Chucks Plain Back, T.I.R. 0.0004", Steel Body



| Part No. | Chuck                                  | Diameter | Capacity (in) | Type | Price /Each |
|----------|--|----------|---------------|------|-------------|
| 7001409  | 5-C Collet, With Plain Back Steel Body | 4"       | 3/64"-1-1/8"  | 3974 | \$381.82:   |

### Finished Adapter Plates for Threaded D1 Lathe Spindles

| Part No. | Back   | Thread    | Diameter | Price /Each |
|----------|--|-----------|----------|-------------|
| 7001565  | Plate Threaded Type For Set-Tru Scroll Chucks-Finished | 1"-10     | 4"       | \$87.77:    |
| 7001566  | Plate Threaded Type For Set-Tru Scroll Chucks-Finished | 1-1/8"-12 | 4"       | 87.77:      |
| 7001567  | Plate Threaded Type For Set-Tru Scroll Chucks-Finished | 1-1/2"-8  | 4"       | 87.77:      |

### 6000 RPM 5C Chucks For Mounting With Apdaptor Plates-6000 R.P.M.



| Part No. | Chuck  | Diameter | Capacity (in) | Type             | Price /Each |
|----------|--|----------|---------------|------------------|-------------|
| 7001410  | 5-C Collet, With Plain Back Steel Body                     | 5"       | 3/64"-1-1/8"  | 3911             | \$410.49:   |
| 7001411  | 5-C Collet, With Plain Back Steel Body                     | 5"       | 3/64"-1-1/8"  | 3974-5-CT Thread | 463.64:     |
| 7001412  | 5-C Collet, With Plain Back Steel Body                     | 5"       | 3/64"-1-1/8"  | 3975             | 447.30:     |
| 7001414  | 5-C Collet, Set-Tru, Steel Body With D1-3 Direct Mount     | 5"       | 3/64"-1-1/8"  | 3944             | 487.41:     |
| 7001415  | 5-C Collet, Set-Tru, Steel Body With D143 Direct Mount     | 5"       | 3/64"-1-1/8"  | 3944             | 487.41:     |
| 7001416  | 5-C Collet, Set-Tru, Steel Body With D1-5 Direct Mount     | 5"       | 3/64"-1-1/8"  | 3944             | 487.41:     |
| 7001417  | 5-C Collet, Set-Tru, Steel Body With 1-1/2" Threaded Mount | 5"       | 3/64"-1-1/8"  | 3984             | 487.41:     |
| 7001418  | 5-C Collet, Set-Tru, Steel Body With 1-1/2" Threaded Mount | 5"       | 3/64"-1-1/8"  | 3984             | 487.41:     |



# LATHE CHUCKS

## Lathe Chucks Cont.



### 2,3,4 & 6 Jaw Set Tru Scroll Chucks Fine Adjustment, Forged Steel Body, 3 pinion design



| Part No. | Diameter | Chuck   | Price /Each |
|----------|----------|---|-------------|
| 7001419  | 4"       | 3-Jaw, Set-Tru Manual Scroll, Forged Steel,Plain Back , With Solid Jaws   | \$649.85:   |
| 7001420  | 5"       | 3-Jaw, Set-Tru Manual Scroll, Forged Steel,Plain Back , With 2 Piece Jaws | 498.60:     |
| 7001421  | 6"       | 3-Jaw, Set-Tru Manual Scroll, Forged Steel,Plain Back , With 2 Piece Jaws | 546.85:     |
| 7001422  | 8"       | 3-Jaw, Set-Tru Manual Scroll, Forged Steel,Plain Back , With 2 Piece Jaws | 620.28:     |
| 7001423  | 10"      | 3-Jaw, Set-Tru Manual Scroll, Forged Steel,Plain Back , With 2 Piece Jaws | 935.67:     |
| 7001424  | 12"      | 3-Jaw, Set-Tru Manual Scroll, Forged Steel,Plain Back , With 2 Piece Jaws | 1238.46:    |
| 7001425  | 16"      | 3-Jaw, Set-Tru Manual Scroll, Forged Steel,Plain Back , With 2 Piece Jaws | 2393.71:    |
| 7001426  | 6"       | 3-Jaw, Set-Tru Manual Scroll, Forged Steel,Plain Back , With Solid Jaws   | 496.50:     |
| 7001427  | 8"       | 3-Jaw, Set-Tru Manual Scroll, Forged Steel,Plain Back , With Solid Jaws   | 569.23:     |
| 7001428  | 10"      | 3-Jaw, Set-Tru Manual Scroll, Forged Steel,Plain Back , With Solid Jaws   | 857.35:     |
| 7001429  | 12"      | 3-Jaw, Set-Tru Manual Scroll, Forged Steel,Plain Back , With Solid Jaws   | 1161.54:    |
| 7001430  | 5"       | 6-Jaw, Set-Tru Manual Scroll, Forged Steel,Plain Back , With 2 Piece Jaws | 625.59:     |
| 7001431  | 6"       | 6-Jaw, Set-Tru Manual Scroll, Forged Steel,Plain Back , With 2 Piece Jaws | 727.98:     |
| 7001432  | 8"       | 6-Jaw, Set-Tru Manual Scroll, Forged Steel,Plain Back , With 2 Piece Jaws | 1009.09:    |
| 7001433  | 10"      | 6-Jaw, Set-Tru Manual Scroll, Forged Steel,Plain Back , With 2 Piece Jaws | 1360.84:    |
| 7001434  | 12"      | 6-Jaw, Set-Tru Manual Scroll, Forged Steel,Plain Back , With 2 Piece Jaws | 1710.49:    |
| 7001435  | 16"      | 6-Jaw, Set-Tru Manual Scroll, Forged Steel,Plain Back , With 2 Piece Jaws | 3121.67:    |
| 7001436  | 4"       | 6-Jaw, Set-Tru Manual Scroll, Forged Steel,Plain Back , With Solid Jaws   | 590.21:     |

| Part No. | Diameter | Chuck   | Price /Each |
|----------|----------|---|-------------|
| 7001437  | 5"       | 6-Jaw, Set-Tru Manual Scroll, Forged Steel,Plain Back , With Solid Jaws | \$837.04:   |
| 7001438  | 6"       | 6-Jaw, Set-Tru Manual Scroll, Forged Steel,Plain Back , With Solid Jaws | 613.28:     |
| 7001439  | 8"       | 6-Jaw, Set-Tru Manual Scroll, Forged Steel,Plain Back , With Solid Jaws | 866.25:     |
| 7001440  | 10"      | 6-Jaw, Set-Tru Manual Scroll, Forged Steel,Plain Back , With Solid Jaws | 1200.70:    |
| 7001441  | 12"      | 6-Jaw, Set-Tru Manual Scroll, Forged Steel,Plain Back , With Solid Jaws | 1597.20:    |

### Steel Adaptors Fully Machined for Set Tru Chucks



| Part No.      | Back                                       | Diameter | Spindle Taper | Price /Each |
|---------------|--|----------|---------------|-------------|
| <b>A Type</b> |  |          |               |             |
| 7001453       | Plate "A" Type For Set-Tru Chucks-Finished | 5"       | A1/A2-4       | \$121.67:   |
| 7001454       | Plate "A" Type For Set-Tru Chucks-Finished | 5"       | A2-5          | 121.67:     |
| 7001455       | Plate "A" Type For Set-Tru Chucks-Finished | 5"       | A1/A2-6       | 121.67:     |
| 7001456       | Plate "A" Type For Set-Tru Chucks-Finished | 6"       | A2-5          | 130.07:     |
| 7001457       | Plate "A" Type For Set-Tru Chucks-Finished | 6"       | A1/A2-6       | 155.95:     |
| 7001458       | Plate "A" Type For Set-Tru Chucks-Finished | 8"       | A2-5          | 146.85:     |
| 7001459       | Plate "A" Type For Set-Tru Chucks-Finished | 8"       | A2-6          | 151.75:     |
| 7001460       | Plate "A" Type For Set-Tru Chucks-Finished | 10"      | A2-5          | 177.62:     |
| 7001461       | Plate "A" Type For Set-Tru Chucks-Finished | 10"      | A2-6          | 177.62:     |
| 7001462       | Plate "A" Type For Set-Tru Chucks-Finished | 10"      | A2-8          | 193.01:     |
| 7001463       | Plate "A" Type For Set-Tru Chucks-Finished | 12"      | A2-6          | 246.15:     |
| 7001464       | Plate "A" Type For Set-Tru Chucks-Finished | 12"      | A2-8          | 253.14:     |
| 7001465       | Plate "A" Type For Set-Tru Chucks-Finished | 12"      | A2-11         | 253.14:     |
| 7001466       | Plate "A" Type For Set-Tru Chucks-Finished | 16"      | A2-6          | 401.39:     |
| 7001467       | Plate "A" Type For Set-Tru Chucks-Finished | 16"      | A2-8          | 401.39:     |
| 7001468       | Plate "A" Type For Set-Tru Chucks-Finished | 16"      | A2-11         | 401.39:     |

| Part No.        | Back  | Diameter | Spindle Taper | Price /Each |
|-----------------|---|----------|---------------|-------------|
| <b>D Type</b>   |   |          |               |             |
| 7001469         | Plate "D" Type For Set-Tru Chucks-Finished      | 4"       | D1-3          | \$125.17:   |
| 7001470         | Plate "D" Type For Set-Tru Chucks-Finished      | 4"       | D1-4          | 125.17:     |
| 7001471         | Plate "D" Type For Set-Tru Chucks-Finished      | 5"       | D1-3          | 146.85:     |
| 7001472         | Plate "D" Type For Set-Tru Chucks-Finished      | 5"       | D1-4          | 146.85:     |
| 7001473         | Plate "D" Type For Set-Tru Chucks-Finished      | 5"       | D1-5          | 146.85:     |
| 7001474         | Plate "D" Type For Set-Tru Chucks-Finished      | 5"       | D1-6          | 146.85:     |
| 7001475         | Plate "D" Type For Set-Tru Chucks-Finished      | 5"       | D1-8          | 146.85:     |
| 7001476         | Plate "D" Type For Set-Tru Chucks-Finished      | 6"       | D1-3          | 146.85:     |
| 7001477         | Plate "D" Type For Set-Tru Chucks-Finished      | 6"       | D1-4          | 146.85:     |
| 7001478         | Plate "D" Type For Set-Tru Chucks-Finished      | 6"       | D1-5          | 146.85:     |
| 7001479         | Plate "D" Type For Set-Tru Chucks-Finished      | 6"       | D1-6          | 146.85:     |
| 7001480         | Plate "D" Type For Set-Tru Chucks-Finished      | 8"       | D1-3          | 167.13:     |
| 7001481         | Plate "D" Type For Set-Tru Chucks-Finished      | 8"       | D1-4          | 167.13:     |
| 7001482         | Plate "D" Type For Set-Tru Chucks-Finished      | 8"       | D1-5          | 167.13:     |
| 7001483         | Plate "D" Type For Set-Tru Chucks-Finished      | 8"       | D1-6          | 167.13:     |
| 7001484         | Plate "D" Type For Set-Tru Chucks-Finished      | 8"       | D1-8          | 202.80:     |
| 7001485         | Plate "D" Type For Set-Tru Chucks-Finished      | 10"      | D1-4          | 202.80:     |
| 7001486         | Plate "D" Type For Set-Tru Chucks-Finished      | 10"      | D1-5          | 202.80:     |
| 7001487         | Plate "D" Type For Set-Tru Chucks-Finished      | 10"      | D1-6          | 202.80:     |
| 7001488         | Plate "D" Type For Set-Tru Chucks-Finished      | 10"      | D1-8          | 227.27:     |
| 7001489         | Plate "D" Type For Set-Tru Chucks-Finished      | 12"      | D1-6          | 286.71:     |
| 7001490         | Plate "D" Type For Set-Tru Chucks-Finished      | 12"      | D1-8          | 273.46:     |
| 7001491         | Plate "D" Type For Set-Tru Chucks-Finished      | 12"      | D1-11         | 298.01:     |
| 7001492         | Plate "D" Type For Set-Tru Chucks-Finished      | 16"      | D1-6          | 419.58:     |
| 7001493         | Plate "D" Type For Set-Tru Chucks-Finished      | 16"      | D1-8          | 521.68:     |
| 7001494         | Plate "D" Type For Set-Tru Chucks-Finished      | 16"      | D1-11         | 597.20:     |
| <b>Threaded</b> |   |          |               |             |
| 7001495         | Plate Threaded Type For Set-Tru Chucks-Finished | 4"       | 1"-10         | \$102.45:   |
| 7001496         | Plate Threaded Type For Set-Tru Chucks-Finished | 4"       | 1-1/8"-12     | 102.45:     |
| 7001497         | Plate Threaded Type For Set-Tru Chucks-Finished | 4"       | 1-1/2"-12     | 102.45:     |
| 7001498         | Plate Threaded Type For Set-Tru Chucks-Finished | 5"       | 1"-10         | 120.98:     |
| 7001499         | Plate Threaded Type For Set-Tru Chucks-Finished | 5"       | 1-1/8"-12     | 120.98:     |
| 7001500         | Plate Threaded Type For Set-Tru Chucks-Finished | 5"       | 1-1/2"-8      | 120.98:     |
| 7001501         | Plate Threaded Type For Set-Tru Chucks-Finished | 5"       | 2-3/16"-10    | 120.98:     |
| 7001502         | Plate Threaded Type For Set-Tru Chucks-Finished | 5"       | 1-1/2"-8      | 120.98:     |
| 7001503         | Plate Threaded Type For Set-Tru Chucks-Finished | 6"       | 2-3/16"-10    | 140.56:     |
| 7001504         | Plate Threaded Type For Set-Tru Chucks-Finished | 6"       | 2-3/16"-10    | 140.56:     |

## Lathe Chucks Cont.



| Part No.              | Back  | Diameter | Spindle Taper | Price /Each |
|-----------------------|---|----------|---------------|-------------|
| <b>Threaded Cont.</b> |   |          |               |             |
| 7001505               | Plate Threaded Type For Set-Tru Chucks-Finished   | 6"       | 2-1/4"-8      | \$140.56:   |
| 7001506               | Plate Threaded Type For Set-Tru Chucks-Finished   | 8"       | 1-1/2"-8      | 177.62:     |
| 7001507               | Plate Threaded Type For Set-Tru Chucks-Finished   | 8"       | 23/16"-6      | 177.62:     |
| 7001508               | Plate Threaded Type For Set-Tru Chucks-Finished   | 8"       | 2-3/8"-6      | 177.62:     |
| 7001509               | Plate Threaded Type For Set-Tru Chucks-Finished   | 10"      | 2-3/8"-6      | 249.65:     |
| 7001510               | Plate Threaded Type For Set-Tru Chucks-Finished   | 12"      | 2-3/8"-6      | 358.04:     |
| <b>L-Type</b>         |   |          |               |             |
| 7001550               | Plate "L" Type For Set-Tru Scroll Chucks-Finished | 5"       | L-00          | \$148.25:   |
| 7001551               | Plate "L" Type For Set-Tru Scroll Chucks-Finished | 6"       | L-00          | 158.05:     |
| 7001552               | Plate "L" Type For Set-Tru Scroll Chucks-Finished | 6"       | L-0           | 158.05:     |
| 7001553               | Plate "L" Type For Set-Tru Scroll Chucks-Finished | 8"       | L-0           | 158.05:     |
| 7001554               | Plate "L" Type For Set-Tru Scroll Chucks-Finished | 8"       | L-0           | 158.05:     |
| 7001555               | Plate "L" Type For Set-Tru Scroll Chucks-Finished | 8"       | L-1           | 177.62:     |
| 7001556               | Plate "L" Type For Set-Tru Scroll Chucks-Finished | 10"      | L-00          | 225.88:     |
| 7001557               | Plate "L" Type For Set-Tru Scroll Chucks-Finished | 10"      | L-0           | 225.88:     |
| 7001558               | Plate "L" Type For Set-Tru Scroll Chucks-Finished | 10"      | L-1           | 225.88:     |
| 7001559               | Plate "L" Type For Set-Tru Scroll Chucks-Finished | 12"      | L-0           | 314.69:     |
| 7001560               | Plate "L" Type For Set-Tru Scroll Chucks-Finished | 12"      | L-1           | 314.69:     |
| 7001561               | Plate "L" Type For Set-Tru Scroll Chucks-Finished | 12"      | L-2           | 346.86:     |
| 7001562               | Plate "L" Type For Set-Tru Scroll Chucks-Finished | 16"      | L-1           | 390.39:     |
| 7001563               | Plate "L" Type For Set-Tru Scroll Chucks-Finished | 16"      | L-2           | 422.73:     |
| 7001564               | Plate "L" Type For Set-Tru Scroll Chucks-Finished | 16"      | L-3           | 483.84:     |

## Cast Iron Adapters D1 Adapters



| Part No.     | Back   | Diameter | Spindle Taper | Price /Each |
|--------------|--|----------|---------------|-------------|
| <b>D1</b>    |  |          |               |             |
| 7001511      | Plate "D" Type For Plain Back Manual Scroll Chucks-Finished                | 4"       | D1-4          | \$110.49:   |
| 7001512      | Plate "D" Type For Plain Back Manual Scroll Chucks-Finished                | 5"       | D1-3          | 118.18:     |
| 7001513      | Plate "D" Type For Plain Back Manual Scroll Chucks-Finished                | 5"       | D1-4          | 118.18:     |
| 7001514      | Plate "D" Type For Plain Back Manual Scroll Chucks-Finished                | 5"       | D1-5          | 118.18:     |
| 7001515      | Plate "D" Type For Plain Back Manual Scroll Chucks-Finished                | 5"       | D1-6          | 115.38:     |
| 7001516      | Plate "D" Type For Plain Back Manual Scroll Chucks-Finished                | 5"       | D1-8          | 135.66:     |
| 7001517      | Plate "D" Type For Plain Back Manual Scroll Chucks-Finished                | 6"       | D1-3          | 135.66:     |
| 7001518      | Plate "D" Type For Plain Back Manual Scroll Chucks-Finished                | 6"       | D1-4          | 135.66:     |
| 7001519      | Plate "D" Type For Plain Back Manual Scroll Chucks-Finished                | 6"       | D1-5          | 135.66:     |
| 7001520      | Plate "D" Type For Plain Back Manual Scroll Chucks-Finished                | 6"       | D1-6          | 135.66:     |
| 7001521      | Plate "D" Type For Plain Back Manual Scroll Chucks-Finished                | 8"       | D1-3          | 158.05:     |
| 7001522      | Plate "D" Type For Plain Back Manual Scroll Chucks-Finished                | 8"       | D1-4          | 158.05:     |
| 7001523      | Plate "D" Type For Plain Back Manual Scroll Chucks-Finished                | 8"       | D1-5          | 158.05:     |
| 7001524      | Plate "D" Type For Plain Back Manual Scroll Chucks-Finished                | 8"       | D1-6          | 158.05:     |
| 7001525      | Plate "D" Type For Plain Back Manual Scroll Chucks-Finished                | 10"      | D1-5          | 190.21:     |
| 7001526      | Plate "D" Type For Plain Back Manual Scroll Chucks-Finished                | 10"      | D1-8          | 207.00:     |
| 7001527      | Plate "D" Type For Plain Back Manual Scroll Chucks-Finished                | 12"      | D1-6          | 253.14:     |
| 7001528      | Plate "D" Type For Plain Back Manual Scroll Chucks-Finished                | 12"      | D1-8          | 253.14:     |
| 7001529      | Plate "D" Type For Plain Back Manual Scroll Chucks-Finished                | 12"      | D1-11         | 298.60:     |
| 7001530      | Plate "D" Type For Plain Back Manual Scroll Chucks-Finished                | 16"      | D1-6          | 351.05:     |
| 7001531      | Plate "D" Type For Plain Back Manual Scroll Chucks-Finished                | 16"      | D1-8          | 434.96:     |
| 7001532      | Plate "D" Type For Plain Back Manual Scroll Chucks-Finished                | 16"      | D1-11         | 502.10:     |
| <b>A1/A2</b> |  |          |               |             |
| 7001442      | Plate "A" Type, Semi-Finished For Plain Back Scroll And Independent Chucks | 5"       | A1/A2-6       | \$97.90:    |
| 7001443      | Plate "A" Type, Semi-Finished For Plain Back Scroll And Independent Chucks | 5"       | A1/A2-8       | 138.60:     |
| 7001444      | Plate "A" Type, Semi-Finished For Plain Back Scroll And Independent Chucks | 6"       | A1/A2-5       | 117.48:     |
| 7001445      | Plate "A" Type, Semi-Finished For Plain Back Scroll And Independent Chucks | 8"       | A1/A2-5       | 134.97:     |
| 7001446      | Plate "A" Type, Semi-Finished For Plain Back Scroll And Independent Chucks | 8"       | A1/A2-6       | 141.96:     |

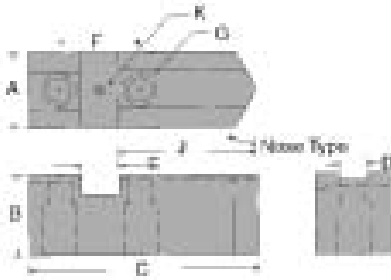
| Part No.           | Back   | Spindle Dia. | Taper    | Price /Each |
|--------------------|--|--------------|----------|-------------|
| <b>A1/A2 cont.</b> |  |              |          |             |
| 7001447            | Plate "A" Type, Semi-Finished For Plain Back Scroll And Independent Chucks | 10"          | A1/A2-6  | \$162.94:   |
| 7001448            | Plate "A" Type, Semi-Finished For Plain Back Scroll And Independent Chucks | 10"          | A1/A2-8  | 175.53:     |
| 7001449            | Plate "A" Type, Semi-Finished For Plain Back Scroll And Independent Chucks | 12"          | A1/A2-6  | 218.18:     |
| 7001450            | Plate "A" Type, Semi-Finished For Plain Back Scroll And Independent Chucks | 12"          | A1/A2-8  | 226.57:     |
| 7001451            | Plate "A" Type, Semi-Finished For Plain Back Scroll And Independent Chucks | 16"          | A1/A2-8  | 380.42:     |
| 7001452            | Plate "A" Type, Semi-Finished For Plain Back Scroll And Independent Chucks | 16"          | A1/A2-11 | 437.77:     |
| <b>L Type</b>      |  |              |          |             |
| 7001533            | Plate "L" Type For Plain Back Manual Scroll Chucks-Finished                | 5"           | L-00     | \$93.70:    |
| 7001534            | Plate "L" Type For Plain Back Manual Scroll Chucks-Finished                | 6"           | L-00     | 97.20:      |
| 7001535            | Plate "L" Type For Plain Back Manual Scroll Chucks-Finished                | 6"           | L-0      | 97.20:      |
| 7001536            | Plate "L" Type For Plain Back Manual Scroll Chucks-Finished                | 8"           | L-00     | 124.48:     |
| 7001537            | Plate "L" Type For Plain Back Manual Scroll Chucks-Finished                | 8"           | L-0      | 124.48:     |
| 7001538            | Plate "L" Type For Plain Back Manual Scroll Chucks-Finished                | 8"           | L-1      | 137.76:     |
| 7001539            | Plate "L" Type For Plain Back Manual Scroll Chucks-Finished                | 10"          | L-00     | 158.05:     |
| 7001540            | Plate "L" Type For Plain Back Manual Scroll Chucks-Finished                | 10"          | L-0      | 158.05:     |
| 7001541            | Plate "L" Type For Plain Back Manual Scroll Chucks-Finished                | 10"          | L-1      | 166.44:     |
| 7001542            | Plate "L" Type For Plain Back Manual Scroll Chucks-Finished                | 10"          | L-2      | 193.01:     |
| 7001543            | Plate "L" Type For Plain Back Manual Scroll Chucks-Finished                | 12"          | L-0      | 202.80:     |
| 7001544            | Plate "L" Type For Plain Back Manual Scroll Chucks-Finished                | 12"          | L-1      | 213.29:     |
| 7001545            | Plate "L" Type For Plain Back Manual Scroll Chucks-Finished                | 12"          | L-2      | 246.15:     |
| 7001546            | Plate "L" Type For Plain Back Manual Scroll Chucks-Finished                | 16"          | L-0      | 318.18:     |
| 7001547            | Plate "L" Type For Plain Back Manual Scroll Chucks-Finished                | 16"          | L-1      | 334.96:     |
| 7001548            | Plate "L" Type For Plain Back Manual Scroll Chucks-Finished                | 16"          | L-2      | 351.05:     |
| 7001549            | Plate "L" Type For Plain Back Manual Scroll Chucks-Finished                | 16"          | L-3      | 417.48:     |

## Jaws



### Aluminum American Standard Tongue and Groove Jaws

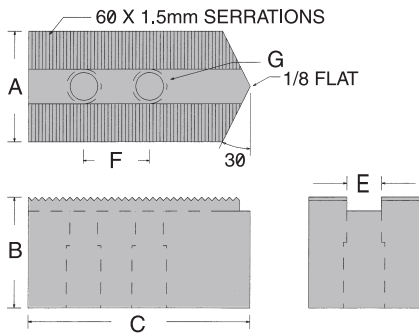
- Made with 6061 T-6 Condition
- Comes with steel cross key



| Part No. | A   | B   | C   | D     | E     | F      | G      | J     | Chuck Size | Price /Each |
|----------|-----|-----|-----|-------|-------|--------|--------|-------|------------|-------------|
| 0316279  | 1   | 1.5 | 3   | 0.738 | 0.377 | 1.6875 | 0.3125 | 1.5   | 6          | \$66.51     |
| 0316280  | 1   | 1.5 | 3   | 0.312 | 0.5   | 1.5    | 0.375  | 1.5   | 6          | 57.01:      |
| 0316281  | 1.5 | 2   | 4   | .312  | .500  | 1.75   | 0.375  | 2.25  | 8          | 63.34:      |
| 0316282  | 1.5 | 3   | 4   | .312  | .5    | 1.75   | 0.375  | 2.25  | 8          | 76.01:      |
| 0316283  | 1.5 | 2   | 4   | .312  | .500  | 1.75   | 0.375  | 2.25  | 8          | 50.67:      |
| 0316284  | 1.5 | 3   | 4   | .312  | .5    | 1.75   | 0.375  | 2.25  | 8          | 76.01:      |
| 0316285  | 2   | 2   | 4.5 | .500  | .75   | 2.125  | 0.5    | 2.25  | 10         | 72.84:      |
| 0316286  | 2   | 4   | 6   | .500  | .75   | 2.125  | 0.5    | 2.625 | 10         | 88.68:      |
| 0316287  | 2   | 2   | 4.5 | .500  | .750  | 2.125  | 0.5    | 2.25  | 10         | 57.01:      |
| 0316288  | 2   | 2.5 | 5   | .5    | .75   | 2.5    | 0.5    | 2.625 | 12         | 76.01:      |
| 0316289  | 2   | 3   | 6   | 0.5   | 0.75  | 2.5    | 0.5    | 3.375 | 12         | 95.01:      |

### 1.5MM x 60° Serrated Jaws

- Made with 6061 T-6 Condition

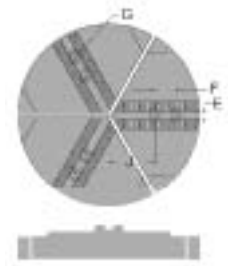


| Part No. | A    | B   | C     | E     | F     | G     | Chuck Size | Price    |
|----------|------|-----|-------|-------|-------|-------|------------|----------|
| 0316290  | 1.25 | 1.5 | 3     | 0.474 | 0.787 | 10mm  | 6          | \$53.84: |
| 0316291  | 1.25 | 2   | 3     | .474  | .787  | 10mm  | 6          | 63.34:   |
| 0316292  | 1.25 | 3   | 3     | 0.474 | 0.787 | 10mm  | 6          | 76.01:   |
| 0316293  | 1.5  | 2   | 4     | 0.551 | 0.985 | 12mm  | 8          | 57.01:   |
| 0316294  | 1.5  | 3   | 4     | 0.551 | 0.985 | 12mm  | 8          | 69.67:   |
| 0316295  | 1.5  | 4   | 4     | 0.551 | 0.985 | 12mm  | 8          | 91.84:   |
| 0316296  | 1.5  | 2   | 4.5   | 0.63  | 1.181 | 12mm  | 10         | 63.34:   |
| 0316297  | 1.5  | 3   | 4.5   | 0.63  | 1.181 | 12mm  | 10         | 76.01:   |
| 0316298  | 1.5  | 4   | 4.75  | .630  | 1.181 | 12mm  | 10         | 98.17:   |
| 0316299  | 2    | 3   | 5.5   | 0.63  | 1.181 | 12mm  | 10         | 88.68:   |
| 0316300  | 2    | 2   | 5.125 | 0.71  | 1.181 | 14mm  | 12         | 76.01:   |
| 0316301  | 2    | 3   | 5.125 | 0.71  | 1.181 | 14mm  | 12         | 88.68:   |
| 0316302  | 2    | 2   | 5.125 | 0.828 | 1.181 | 16mm  | 12         | 79.17:   |
| 0316303  | 2    | 3   | 5.125 | 0.828 | 1.181 | 16mm  | 12         | 88.68:   |
| 0316304  | 2.5  | 3   | 6.5   | 0.866 | 1.693 | 20mm  | 15         | 117.18:  |
| 0316306  | 1    | 1.5 | 3.25  | 0.5   | 1.5   | 0.375 | 6          | 69.67    |
| 0316305  | 2.5  | 4   | 6.5   | 0.866 | 1.693 | 20mm  | 15         | 142.51:  |

| Part No. | A    | B   | C     | E     | F     | G     | Chuck Size | Price   |
|----------|------|-----|-------|-------|-------|-------|------------|---------|
| 0316307  | 1.25 | 2   | 4     | 0.5   | 1.75  | 0.375 | 8          | \$76.01 |
| 0316308  | 1.25 | 3   | 4     | 0.5   | 1.75  | 0.375 | 8          | 85.51   |
| 0316309  | 2    | 2   | 6     | 0.75  | 2.5   | 0.5   | 12         | 101.34  |
| 0316310  | 1.5  | 2   | 4     | 0.63  | 0.985 | 12mm  | 8          | 63.34:  |
| 0316311  | 1.25 | 1.5 | 3     | 0.474 | 0.787 | 10mm  | 6          | 57.01:  |
| 0316312  | 1.25 | 2   | 3     | 0.474 | 0.787 | 10mm  | 6          | 69.67:  |
| 0316313  | 1.25 | 3   | 3     | 0.474 | 0.787 | 10mm  | 6          | 79.17:  |
| 0316314  | 1.5  | 2   | 4     | 0.551 | 0.985 | 12mm  | 8          | 66.51:  |
| 0316315  | 1.5  | 2   | 5     | 0.551 | 0.985 | 12mm  | 8          | 53.84:  |
| 0316316  | 1.5  | 3   | 4     | 0.551 | 0.985 | 12mm  | 8          | 72.84:  |
| 0316317  | 1.5  | 4   | 4     | 0.551 | 0.985 | 12mm  | 8          | 95.01:  |
| 0316318  | 1.5  | 2   | 4.5   | 0.63  | 1.181 | 12mm  | 10         | 66.51:  |
| 0316319  | 1.5  | 2   | 4.6   | 0.63  | 1.181 | 12mm  | 10         | 60.17:  |
| 0316320  | 1.5  | 3   | 4.5   | 0.63  | 1.25  | 12mm  | 10         | 79.17:  |
| 0316321  | 2    | 3   | 5.25  | 0.63  | 1.181 | 12mm  | 10         | 91.84:  |
| 0316322  | 1.5  | 4   | 4.5   | 0.63  | 1.181 | 12mm  | 10         | 101.34: |
| 0316323  | 2    | 2   | 4     | 0.71  | 1.181 | 14mm  | 12         | 76.01:  |
| 0316324  | 2    | 2   | 5.125 | 0.71  | 1.181 | 14mm  | 12         | 101.34: |
| 0316325  | 2    | 3   | 5.125 | .71   | 1.181 | 14mm  | 12         | 110.84: |
| 0316326  | 2    | 4   | 5.125 | 0.71  | 1.181 | 14mm  | 12         | 114.01: |
| 0316327  | 2    | 2   | 4     | .828  | 1.181 | 16mm  | 12         | 95.01:  |
| 0316328  | 2    | 3   | 4     | 0.828 | 1.181 | 16mm  | 12         | 101.34: |
| 0316329  | 2.5  | 3   | 6.5   | 0.866 | 1.693 | 20mm  | 15         | 120.34: |
| 0316330  | 2.5  | 4   | 6.5   | 0.866 | 1.693 | 20mm  | 15         | 142.51: |
| 0316331  | 1    | 1.5 | 2     | 0.394 | 0.551 | 8mm   | 4 & 5      | 53.84:  |
| 0316332  | 1.5  | 2   | 4.5   | 0.63  | 1.25  | 12mm  | 10         | 69.67:  |

### 1.5MM x 60° Serrated Pie Jaws

- Made with A319 Cast Aluminum, cast iron or steel



| Part No.         | A     | B     | C | E     | F     | G    | J      | Chuck Size | Price /Each |
|------------------|-------|-------|---|-------|-------|------|--------|------------|-------------|
| 0316355          | 10    | 4     |   | 0.63  | 1.25  | 12mm | 2.875  | 10         | \$234.35:   |
| 0316354          | 10    | 2     |   | 0.63  | 1.25  | 12mm | 2.875  | 10         | 152.01:     |
| 0316353          | 15    | 4     |   | 0.866 | 1.693 | 20mm | 4.3125 | 15 & 18    | 503.53:     |
| 0316352          | 15    | 3     |   | 0.866 | 1.693 | 20mm | 4.3125 | 15         | 354.69:     |
| 0316351          | 15    | 3     |   | 0.71  | 1.181 | 14mm | 2.3125 | 12         | 376.85:     |
| 0316350          | 12    | 2.5   |   | 0.828 | 1.181 | 16mm | 2.6875 | 12         | 221.68:     |
| 0316349          | 12    | 5     |   | 0.71  | 1.181 | 14mm | 2.3125 | 12         | 376.85:     |
| 0316348          | 12    | 2.5   |   | 0.71  | 1.181 | 14mm | 2.3125 | 12         | 221.68:     |
| 0316347          | 15    | 3     |   | 0.63  | 1.181 | 12mm | 2.5    | 10         | 376.85:     |
| 0316346          | 12    | 2.5   |   | 0.63  | 1.181 | 12mm | 2.5    | 10         | 234.35:     |
| 0316345          | 10    | 4     |   | 0.63  | 1.181 | 12mm | 2.5    | 10         | 228.02:     |
| 0316344          | 10    | 2     |   | 0.63  | 1.181 | 12mm | 2.5    | 10         | 145.68:     |
| 0316343          | 8     | 4     |   | 0.553 | 0.985 | 12mm | 2      | 8          | 148.84:     |
| 0316342          | 8     | 2     |   | 0.553 | 0.985 | 12mm | 2      | 8          | 85.51:      |
| 0316341          | 6     | 4     |   | 0.474 | 0.787 | 10mm | 1.0625 | 6          | 104.51:     |
| 0316340          | 6     | 2     |   | 0.474 | 0.787 | 10mm | 1.0625 | 6          | 72.84:      |
| <b>Cast Iron</b> |       |       |   |       |       |      |        |            |             |
| 0316363          | 203.1 | 101.5 |   | 17    | 25    | 12   | 50.8   | 8 & 10     | \$202.68    |
| 0316364          | 152.3 | 50.8  |   | 10    | 18    | 8mm  | 28.6   | 5          | 114.01:     |
| 0316365          | 152.3 | 50.8  |   | 12    | 20    | 10mm | 42     | 6          | 114.01:     |
| 0316366          | 152.3 | 101.5 |   | 12    | 20    | 10mm | 42     | 6          | 161.51:     |
| 0316367          | 203.1 | 50.8  |   | 14    | 25    | 12mm | 50.8   | 8          | 123.51:     |
| 0316368          | 203.1 | 101.5 |   | 14    | 25    | 12mm | 50.8   | 8          | 212.18:     |
| 0316369          | 253.8 | 50.8  |   | 16    | 30    | 12mm | 63.5   | 10         | 205.85:     |
| 0316370          | 253.8 | 101.5 |   | 16    | 30    | 12mm | 63.5   | 10         | 323.02:     |
| 0316371          | 304.6 | 63.5  |   | 18    | 30    | 14mm | 58.7   | 12         | 307.18:     |
| 0316372          | 304.6 | 127   |   | 18    | 30    | 14mm | 58.7   | 12         | 525.69:     |
| 0316373          | 304.6 | 63.5  |   | 21    | 30    | 16mm | 68.2   | 12         | 307.18:     |
| 0316374          | 304.6 | 127   |   | 21    | 30    | 16mm | 68.2   | 12         | 525.69:     |
| 0316375          | 380.7 | 76.1  |   | 22    | 43    | 20mm | 109.5  | 12         | 497.19:     |
| 0316376          | 380.7 | 101.5 |   | 22    | 43    | 20mm | 109.5  | 15 & 18    | 715.70:     |
| 0316377          | 380.7 | 76.1  |   | 25.5  | 43    | 20mm | 109.5  | 18         | 497.19:     |
| 0316378          | 10    | 2     |   | 0.63  | 1.25  | 12mm | 2.875  | 10         | 202.68:     |
| 0316379          | 50.8  |       |   | 11    | 25    | 8mm  | 34.9   | 6          | 117.18:     |

## Jaws Cont.



WORKHOLDING PRODUCTS

### Pure Aluminum Hammers

The Abbott Pure Aluminum Hammer replaces old-fashioned lead hammers. Made of certified pure aluminum, the Abbott soft hammer is non-contaminating on exotic high temperature metals. One-piece poured construction guarantees safety. No "flying off the handle." Non-Sparking. May be placed on any machine or part without marring or contaminating.



| Part No. | Vendor No. | Wt./100 (lbs) | Price /Each |
|----------|------------|---------------|-------------|
| 0316380  | 0HAMMER    | 1.5           | \$20.87     |
| 0316381  | 1HAMMER    | 2             | 21.86       |
| 0316382  | 2HAMMER    | 3.5           | 35.64       |
| 0316383  | 5HAMMER    | 9             | 108.69      |
| 0316384  | 10HAMMER   | 15.3          | 110.85      |

## Centers



### Medium-Duty Super Accurate Riten Live Centers

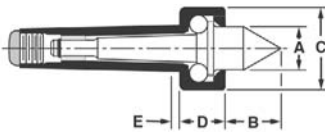
Medium-duty live centers are required where the weight of the workpiece is several hundred pounds. These centers are built with larger bearings to provide the support and strength required to handle heavier workpieces.

Accuracy guaranteed to  $\pm .00004$ .

Medium-duty for heavier cuts

Bigger bearings for heavier loads

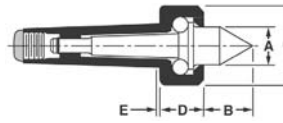
Five pounds of thrust to seat bearings



| Part No. | Taper | A     | B     | C      | D       | E       | Price /Each |
|----------|-------|-------|-------|--------|---------|---------|-------------|
| 0326997  | 2MT   | 0.875 | 1     | 1.6875 | 1.0625  | 0.09375 | \$326.00:   |
| 0326998  | 3MT   | 1     | 1     | 2.125  | 1.375   | 0.1875  | 392.00:     |
| 0326999  | 4MT   | 1.5   | 1.625 | 2.8125 | 1.65625 | 0.1875  | 484.00:     |
| 0327005  | 6J    | 0.875 | 1     | 1.6875 | 1.0625  | 0.09375 | 320.00:     |
| 0327006  | 14J   | 2.125 | 2.125 | 4.1875 | 2.5     | 0.5     | 766.00:     |
| 0327007  | 16J   | 2.125 | 2.125 | 4.1875 | 2.5     | 0.3125  | 814.00:     |
| 0327008  | 20J   | 2     | 2.25  | 4.625  | 3.84375 | 0.5     | 1598.00:    |

## Super Accurate Live Centers

- Accuracy guaranteed to  $\pm .000004$ .
- Compact design
- Extended points available
- Ideal for grinding
- Five pounds of thrust to seat bearings



| Part No. | Taper   | A     | B      | C      | D       | E       | Price /Each |
|----------|---------|-------|--------|--------|---------|---------|-------------|
| 0326950  | 2MT     | 0.75  | 0.8125 | 1.25   | 0.75    | 0.09375 | \$198.00:   |
| 0326951  | 3MT     | 0.875 | 1.0625 | 1.6875 | 0.9375  | 0.1875  | 320.00:     |
| 0326952  | 4MT     | 1     | 1      | 2.125  | 1.1875  | 0.25    | 372.00:     |
| 0326953  | 5MT     | 1.5   | 1.5    | 2.8125 | 1.40625 | 0.25    | 534.00:     |
| 0326954  | 6MT     | 2.125 | 2.125  | 4.1875 | 2.5     | 0.3125  | 878.00:     |
| 0326955  | 6J      | 0.75  | 0.8125 | 1.25   | 0.75    | 0.09375 | 270.00:     |
| 0326956  | 9J      | 0.875 | 1      | 1.6875 | 0.9375  | 0.1875  | 346.00:     |
| 0326957  | 10J     | 1     | 1      | 2.125  | 1.1875  | 0.1875  | 426.00:     |
| 0326958  | 12J     | 1     | 1      | 2.125  | 1.1875  | 0.25    | 516.00:     |
| 0326959  | 14J     | 1.5   | 1.5    | 2.8125 | 1.40625 | 0.25    | 546.00:     |
| 0326960  | 16J     | 1.5   | 1.5    | 2.8125 | 1.40625 | 0.1875  | 646.00:     |
| 0326961  | 20J     | 2.125 | 2.125  | 4.1875 | 2.5     | 0.3125  | 884.00:     |
| 0326962  | 1/2SS   | 0.5   | 0.5625 | 1.25   | 0.75    | 2.25    | 270.00:     |
| 0326963  | 3/4SS   | 0.5   | 0.5625 | 1.25   | 0.75    | 2.75    | 284.00:     |
| 0326964  | 1SS     | 0.875 | 1      | 1.6875 | 0.9375  | 5       | 330.00:     |
| 0326965  | 1 1/4SS | 1     | 1      | 2.125  | 1.1875  | 5       | 380.00:     |
| 0326966  | 7B&S    | 0.75  | 0.8125 | 1.25   | 0.75    | 0.09375 | 270.00:     |
| 0326967  | 10B&S   | 1     | 1      | 2.125  | 1.1875  | 0.5625  | 392.00:     |
| 0326968  | 12B&S   | 1.5   | 1.5    | 2.8125 | 1.40625 | 0.3125  | 520.00:     |
| 0326969  | 13B&S   | 1.5   | 1.5    | 2.8125 | 1.40625 | 0.25    | 566.00:     |

## Heavy-Duty Live Centers

For use where the part may weight several hundred pounds. Radial pressure and thrust requirements demand centers with bearing structures that will handle these loads.

- Accuracy guaranteed to  $\pm .0001$ .
- Four-bearing design for heavier loads



| Part No. | Taper | A     | B     | C     | D       | E     | Price /Each |
|----------|-------|-------|-------|-------|---------|-------|-------------|
| 0327000  | 5MT   | 1.875 | 2.25  | 3.75  | 3.84375 | 0.5   | \$990.00:   |
| 0327001  | 6MT   | 2     | 2.25  | 4.625 | 3.84375 | 0.5   | 1598.00:    |
| 0327002  | 7MT   | 2     | 2.25  | 4.625 | 3.84375 | 0.5   | 2027.00:    |
| 0327003  | 3MT   | 0.875 | 1.125 | 1.75  | 2.375   | 0.375 | 398.00:     |
| 0327004  | 4MT   | 1.125 | 2     | 2.875 | 3.1875  | 0.5   | 470.00:     |

## Extra Heavy Duty Live Centers

For use where the piece part may weigh several thousand pounds. Radial pressure and thrust requirements demand centers with bearing structures that will handle these loads.

- Accuracy guaranteed to  $\pm .0001$ .
- Designed for heavy steel rolls, paper rolls, printing rolls, castings, forgings and other large parts



| Part No. | Taper | A       | B    | C      | D       | E       | Price /Each |
|----------|-------|---------|------|--------|---------|---------|-------------|
| 0327053  | 3MT   | 1.125   | 1.5  | 2.8125 | 3.1875  | 0.5     | \$708.00:   |
| 0327054  | 5MT   | 2       | 2.25 | 4.625  | 3.84375 | 0.5     | 1440.00:    |
| 0327055  | 6MT   | 2.625   | 2.5  | 6.5625 | 5.09375 | 0.59375 | 2850.00:    |
| 0327056  | 7MT   | 2.625   | 2.5  | 6.5625 | 5.09375 | 0.75    | 3278.00:    |
| 0327057  | 4MT   | 1.65625 | 1.75 | 3.75   | 3.84375 | 0.5     | 990.00:     |



# CENTERS

## Centers Cont.

*Rixen*

### CNC High RPM Live Centers Long Point, Tracer Point, Standard Point & Carbide Tipped Point

- Accuracy guaranteed to  $\pm .00005$ .
- Coolant deflectors, no friction seal
- Point configuration allows for tool clearance
- Meets the rigid requirements for CNC turning
- Body heat-treated for additional strength

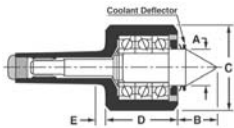


| Part No.                    | Taper | A      | B      | C     | D      | E     | G   | V2 | I        | Price /Each |
|-----------------------------|-------|--------|--------|-------|--------|-------|-----|----|----------|-------------|
| <b>Long Point</b>           |       |        |        |       |        |       |     |    |          |             |
| 0326970                     | 2MT   | 0.375  | 2      | 2.125 | 2      | 0.375 | 3/4 | 40 | 1 19/32  | \$428.00:   |
| 0326971                     | 3MT   | 0.375  | 2      | 2.125 | 2      | 0.375 | 3/4 | 40 | 1.59375  | 460.00:     |
| 0326972                     | 4MT   | 0.5    | 2.5    | 2.75  | 2.3125 | 0.375 | 3/4 | 40 | 1.796875 | 550.00:     |
| 0326973                     | 5MT   | 0.5    | 2.625  | 3.125 | 2.4375 | 0.375 | 3/4 | 40 | 2.21875  | 588.00:     |
| <b>Tracer Point</b>         |       |        |        |       |        |       |     |    |          |             |
| 0327016                     | 5MT   | 0.625  | 2.562  | 3.125 | 2.75   | 0.375 |     | 30 |          | \$294.00    |
| <b>Standard Point</b>       |       |        |        |       |        |       |     |    |          |             |
| 0326978                     | 2MT   | 1      | 1.25   | 2.125 | 2      | 0.375 |     |    |          | \$428.00:   |
| 0326979                     | 3MT   | 1      | 1.375  | 2.125 | 2      | 0.375 |     |    |          | 460.00:     |
| 0326980                     | 4MT   | 1.25   | 1.8125 | 2.75  | 2.3125 | 0.375 |     |    |          | 550.00:     |
| 0326981                     | 5MT   | 1.5625 | 2.375  | 3.125 | 2.4375 | 0.375 |     |    |          | 588.00:     |
| <b>Carbide Tipped Point</b> |       |        |        |       |        |       |     |    |          |             |
| 0326974                     | 2MT   | 1      | 1.875  | 2.125 | 2      | 0.375 |     | 25 |          | \$468.00:   |
| 0326975                     | 3MT   | 1      | 1.875  | 2.125 | 2      | 0.375 |     | 25 |          | 506.00:     |
| 0326976                     | 4MT   | 1.25   | 2.5    | 2.75  | 2.3125 | 0.375 |     | 25 |          | 574.00:     |
| 0326977                     | 5MT   | 1.5625 | 2.5625 | 3.125 | 2.750  | 0.375 |     | 30 |          | 642.00:     |
| 0326982                     | 2MT   | 1      | 1.25   | 2.125 | 2      | 0.375 |     |    |          | 468.00:     |
| 0326983                     | 3MT   | 1      | 1.375  | 2.125 | 2      | 0.375 |     |    |          | 506.00:     |
| 0326984                     | 4MT   | 1.25   | 1.8125 | 2.75  | 2.3125 | 0.375 |     |    |          | 574.00:     |
| 0326985                     | 5MT   | 1.5625 | 2.375  | 3.125 | 2.750  | 0.375 |     |    |          | 642.00:     |

### CNC Heavy-Duty Live Centers Standard Point & Tracer Point

These CNC live centers are used to counter the high thrust as in facedriving applications. These centers are also used where workpieces may several thousand pounds. Radial pressure, thrust and rigidity requirements demand centers with four-bearing design to handle these loads.

- Accuracy guaranteed to  $\pm .00005$ .
- May be used in conjunction with facedrivers
- Large workpieces in CNC applications



| Part No.              | Taper | A       | B       | C      | D       | E   | Price /Each |
|-----------------------|-------|---------|---------|--------|---------|-----|-------------|
| <b>Standard Point</b> |       |         |         |        |         |     |             |
| 0326987               | 3MT   | 1.125   | 1.5     | 2.8125 | 3.1875  | 0.5 | \$708.00:   |
| 0326988               | 5MT   | 2       | 2.25    | 4.625  | 3.84375 | 0.5 | 1440.00:    |
| 0326989               | 6MT   | 2       | 2.25    | 4.625  | 3.84375 | 0.5 | 1598.00:    |
| 0326990               | 4MT   | 1.65625 | 1.75    | 3.75   | 3.84375 | 0.5 | 990.00:     |
| 0326991               | 5MT   | 1.875   | 2.25    | 3.75   | 3.84375 | 0.5 | 990.00:     |
| <b>Tracer Point</b>   |       |         |         |        |         |     |             |
| 0326992               | 3MT   | 0.5     | 2.0625  | 2.8125 | 3.1875  | 0.5 | \$708.00:   |
| 0326993               | 5MT   | 0.9375  | 3.28125 | 4.625  | 3.84375 | 0.5 | 1440.00:    |
| 0326994               | 6MT   | 0.9375  | 3.28125 | 4.625  | 3.84375 | 0.5 | 1598.00:    |
| 0326995               | 4MT   | 0.625   | 2.53125 | 3.75   | 3.84375 | 0.5 | 990.00:     |
| 0326996               | 5MT   | 0.625   | 2.78125 | 3.75   | 3.84375 | 0.5 | 990.00:     |

### Econo-Tri-Bearing Live Centers Standard & Tracer Point

- Accuracy guaranteed to  $\pm .0002$ .
- Three rows of bearings
- Points are through-hardened to 61-63 Rc
- Sealed bearings lubricated for life, protected against contaminants and coolant.
- Non-repairable, trade in available
- 3000 RPM
- Morse Taper



| Part No.              | Taper | A      | B      | C     | D      | E    | Price /Each |
|-----------------------|-------|--------|--------|-------|--------|------|-------------|
| <b>Standard Point</b> |       |        |        |       |        |      |             |
| 0327009               | 2MT   | 0.5625 | 0.8125 | 1.625 | 1.625  | 0.25 | \$154.00    |
| 0327010               | 3MT   | 0.8125 | 1      | 2     | 1.9375 | 0.25 | 160.00      |
| 0327011               | 4MT   | 1      | 1.25   | 2.375 | 2.25   | 0.25 | 216.00      |
| 0327012               | 5MT   | 1      | 1.25   | 2.375 | 2.25   | 0.25 | 294.00      |
| <b>Tracer Point</b>   |       |        |        |       |        |      |             |
| 0327013               | 2MT   | 0.375  | 1.25   | 1.625 | 1.625  | 0.25 | \$154.00    |
| 0327014               | 3MT   | 0.375  | 1.5    | 2     | 1.9375 | 0.25 | 160.00      |
| 0327015               | 4MT   | 0.5    | 2      | 2.375 | 2.25   | 0.25 | 216.00      |
| 0327016               | 5MT   | 0.5    | 2      | 2.375 | 2.25   | 0.25 | 294.00      |

### Spline Rolling Live Centers

Spline Rolling Centers are special application centers. Their design includes heavy-duty taper and roller bearings. The heat-treated points extend the life of the center. Lubrication is sealed in and no additional lubricant is required.

- Accuracy guaranteed to  $\pm .00025$ .
- Tapered and ball bearings
- Points are through-hardened to 61-63 Rc.



| Part No. | Taper | A     | B     | C        | D     | E      | Price /Each |
|----------|-------|-------|-------|----------|-------|--------|-------------|
| 0327017  | 3MT   | 0.875 | 1.375 | 1.984375 | 2.375 | 0.3125 | \$548.00:   |
| 0327018  | 4MT   | 0.875 | 1.375 | 1.984375 | 2.375 | 0.3125 | 584.00:     |

### Spline Ejector

| Part No. | Taper | Price /Each |
|----------|-------|-------------|
| 0327019  | 3MT   | \$34.00:    |
| 0327020  | 4MT   | 34.00:      |

### Regal Live Centers Standard & Long Point



| Part No.              | Taper | A     | B       | C      | D       | E       | G      | V2 | I       | Price /Each |
|-----------------------|-------|-------|---------|--------|---------|---------|--------|----|---------|-------------|
| <b>Standard Point</b> |       |       |         |        |         |         |        |    |         |             |
| 0327025               | 2MT   | 1     | 1.25    | 2.375  | 1.75    | 0.25    |        |    |         | \$236.00    |
| 0327026               | 3MT   | 1     | 1.25    | 2.375  | 1.75    | 0.25    |        |    |         | 272.00      |
| 0327027               | 4MT   | 1.375 | 1.5     | 3      | 1.96875 | 0.375   |        |    |         | 354.00      |
| 0327028               | 5MT   | 1.375 | 1.8125  | 3.0625 | 2.09375 | 0.28125 |        |    |         | 490.00      |
| <b>Long Point</b>     |       |       |         |        |         |         |        |    |         |             |
| 0327021               | 2MT   | 0.375 | 1.875   | 2.375  | 1.75    | 0.25    | 0.625  | 34 | 1.65625 | \$236.00    |
| 0327022               | 3MT   | 0.375 | 1.875   | 2.375  | 1.75    | 0.25    | 0.625  | 34 | 1.65625 | 272.00      |
| 0327023               | 4MT   | 0.5   | 2.21875 | 3      | 1.96875 | 0.375   | 0.8125 | 40 | 2       | 354.00      |
| 0327024               | 5MT   | 0.5   | 2.5     | 3.0625 | 2.09375 | 0.28125 | 0.9375 | 40 | 2.15625 | 490.00      |

## Centers Cont.

### Quick Point Live Centers, Sets and Replacement Points

- Accuracy guaranteed to  $\pm .00025$ .
- Interchangeable points reduce the need for several centers
- Purchase individual replacement points or a complete set
- Mounting taper of points is 10:1



#### Live Center

| Part No. | A      | B    | C     | D      | E     | Price /Each |
|----------|--------|------|-------|--------|-------|-------------|
| 0327032  | 1.5625 | 0.25 | 3.125 | 2.4375 | 0.375 | \$688.00:   |
| 0327031  | 1.25   | 0.25 | 2.75  | 2.3125 | 0.375 | 644.00:     |
| 0327030  | 1      | 0.25 | 2.125 | 2      | 0.375 | 432.00:     |
| 0327029  | 1      | 0.25 | 2.125 | 2      | 0.375 | 396.00:     |

#### Quick Points

| Part No. | Style | A     | F     | G     | K       | C     | B        | Price /Each |
|----------|-------|-------|-------|-------|---------|-------|----------|-------------|
| 0327249  | M     | 1     |       |       | 1.1875  | 0.474 | 0.953125 | \$64.00:    |
| 0327250  | F     | 1.125 | 0.5   | 0.875 | 1.09375 | 0.474 | 0.953125 | 78.00:      |
| 0327251  | T     | 0.375 |       |       | 1.3125  | 0.474 | 0.953125 | 82.00:      |
| 0327252  | BN    | 1.75  | 0.875 |       | 1.1875  | 0.474 | 61/64    | 100.00:     |
| 0327253  | M     | 1.125 |       |       | 1.3125  | 0.591 | 1.1875   | 76.00:      |
| 0327254  | F     | 1.375 | 0.625 | 1.125 | 1.21875 | 0.591 | 1.1875   | 88.00:      |
| 0327255  | T     | 0.5   |       |       | 1.1875  | 0.591 | 1.1875   | 92.00:      |
| 0327256  | BN    | 2.25  | 1     |       | 1.5625  | 0.591 | 1.1875   | 168.00:     |
| 0327257  | M     | 1.5   |       |       | 1.6875  | 0.867 | 1.390625 | 108.00:     |
| 0327258  | F     | 1.5   | 0.75  | 1.25  | 1.25    | 0.867 | 1.390625 | 132.00:     |
| 0327259  | T     | 0.5   |       |       | 2       | 0.867 | 1.390625 | 148.00:     |
| 0327260  | BN    | 2.75  | 1.5   |       | 1.625   | 0.867 | 1.390625 | 208.00:     |

A Quick Point Set Includes: one live center, one male point, one female point, one tracer point, one bull nose point, and one point extractor.

#### Quick Point Sets

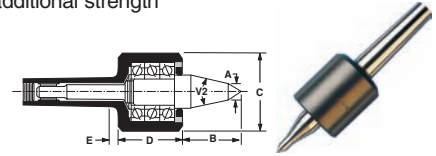
| Part No. | Taper | Price /Each |
|----------|-------|-------------|
| 0327033  | 2MT   | \$676.00:   |
| 0327034  | 3MT   | 710.00:     |
| 0327035  | 4MT   | 990.00:     |
| 0327036  | 5MT   | 1182.00:    |

#### Point Extractors

| Part No. | Taper    | Price /Each |
|----------|----------|-------------|
| 0327037  | 2,3,4 MT | \$34.00:    |
| 0327038  | 5MT      | 36.00:      |

### Advantage Live Centers Standard, Tracer & Long Point

- Accuracy guaranteed to  $\pm .00005$ .
- Heavy-duty tri-bearing design
- Points are through-hardened to 61-63 Rc.
- Full-length spindle for extra rigidity
- Body-heat treated for additional strength



| Part No.              | Taper | A      | B       | C     | D       | E     | G      | V2 | I       | Price /Each |
|-----------------------|-------|--------|---------|-------|---------|-------|--------|----|---------|-------------|
| <b>Tracer Point</b>   |       |        |         |       |         |       |        |    |         |             |
| 0327043               | 2MT   | 0.875  | 1.750   | 1.75  | 2.375   | 0.375 |        |    |         | \$366.00:   |
| 0327044               | 3MT   | 0.562  | 1.750   | 1.75  | 2.375   | 0.375 |        |    |         | 378.00:     |
| 0327045               | 4MT   | 0.562  | 2.0625  | 2.875 | 3.1875  | 0.375 |        |    |         | 470.00:     |
| 0327046               | 5MT   | 0.562  | 2.0625  | 2.875 | 3.1875  | 0.375 |        |    |         | 512.00:     |
| 0327047               | 6MT   | 0.625  | 2.781   | 3.75  | 3.84375 | 0.375 |        |    |         | 1224.00:    |
| <b>Standard Point</b> |       |        |         |       |         |       |        |    |         |             |
| 0327048               | 2MT   | 0.375  | 1.75    | 1.75  | 2.375   | 0.375 |        | 30 |         | \$366.00:   |
| 0327049               | 3MT   | 0.375  | 1.75    | 1.75  | 2.375   | 0.375 |        | 30 |         | 378.00:     |
| 0327050               | 4MT   | 0.5625 | 2.0625  | 2.875 | 3.1875  | 0.375 |        | 30 |         | 470.00:     |
| 0327051               | 5MT   | 0.5625 | 2.0625  | 2.875 | 3.1875  | 0.5   |        | 30 |         | 512.00:     |
| 0327052               | 6MT   | 0.625  | 2.78125 | 3.75  | 3.84375 | 0.5   |        | 30 |         | 1224.00:    |
| <b>Long Point</b>     |       |        |         |       |         |       |        |    |         |             |
| 0327039               | 2MT   | 0.375  | 2       | 1.75  | 2.375   | 0.375 | 0.75   | 30 | 1.6875  | \$366.00:   |
| 0327040               | 3MT   | 0.375  | 2       | 1.75  | 2.375   | 0.375 | 0.75   | 30 | 1.6875  | 378.00:     |
| 0327041               | 4MT   | 0.5    | 2.5     | 2.875 | 3.1875  | 0.5   | 0.9375 | 30 | 2.09375 | 470.00:     |
| 0327042               | 5MT   | 0.5    | 2.5     | 2.875 | 3.1875  | 0.5   | 0.9375 | 30 | 2.09375 | 512.00:     |

### Heavy-Duty Bull Nose Live Centers

The strength and alignment of the fully supported bull nose gives longer center life when machining larger workpieces. The rigidity of the center prevents vibration and chatter.

- Large workpiece center holes
- Large piece parts



| Part No. | Taper | A    | F | E       | K       | Price /Each |
|----------|-------|------|---|---------|---------|-------------|
| 0327058  | 5MT   | 10.5 | 5 | 0.4375  | 7.4375  | \$2096.00:  |
| 0327059  | 6MT   | 10.5 | 5 | 0.4375  | 7.4375  | 2096.00:    |
| 0327060  | 7MT   | 10.5 | 5 | 0.4375  | 7.4375  | 2096.00:    |
| 0327061  | 6MT   | 12   | 6 | 0.4375  | 7.4375  | 2938.00:    |
| 0327062  | 7MT   | 12   | 6 | 0.4375  | 7.4375  | 2938.00:    |
| 0327063  | 2MT   | 4    | 1 | 0.375   | 4.28125 | 588.00:     |
| 0327064  | 3MT   | 4    | 1 | 0.375   | 4.28125 | 588.00:     |
| 0327065  | 4MT   | 4    | 1 | 0.375   | 4.28125 | 588.00:     |
| 0327066  | 5MT   | 4    | 1 | 0.375   | 4.28125 | 588.00:     |
| 0327067  | 3MT   | 5    | 2 | 0.375   | 3.8125  | 732.00:     |
| 0327068  | 4MT   | 5    | 2 | 0.375   | 3.8125  | 732.00:     |
| 0327069  | 5MT   | 5    | 2 | 0.375   | 3.8125  | 732.00:     |
| 0327070  | 3MT   | 6.5  | 3 | 0.375   | 3.90625 | 1018.00:    |
| 0327071  | 4MT   | 6.5  | 3 | 0.375   | 3.90625 | 1018.00:    |
| 0327072  | 5MT   | 6.5  | 3 | 0.375   | 3.90625 | 1018.00:    |
| 0327073  | 6MT   | 6.5  | 3 | 0.78125 | 4.3125  | 1018.00:    |
| 0327074  | 5MT   | 9    | 4 | 0.46875 | 6.625   | 1764.00:    |
| 0327075  | 6MT   | 9    | 4 | 0.46875 | 6.625   | 1764.00:    |

# CENTERS

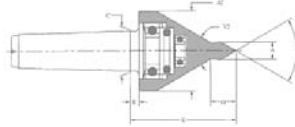
## Centers Cont.

*Riten*

### Multi-Use Live Centers

Ideal for general machine shop use. It can be used when machining thin-walled workpieces or general shaft work applications.

- Accuracy guaranteed to  $\pm .0001$ .
- Great for manual lathe applications



| Part No. | Taper | A     | A2    | C     | E     | G      | K      | V  | V2 | Price /Each |
|----------|-------|-------|-------|-------|-------|--------|--------|----|----|-------------|
| 0327076  | 2MT   | 0.5   | 2.25  | 0.7   | 0.25  | 0.75   | 3.1875 | 60 | 60 | \$220.00:   |
| 0327077  | 3MT   | 0.5   | 2.25  | 0.938 | 0.25  | 0.75   | 3.1875 | 60 | 60 | 228.00:     |
| 0327078  | 3MT   | 0.625 | 2.625 | 0.938 | 0.25  | 0.9375 | 3.1875 | 60 | 60 | 258.00:     |
| 0327079  | 4MT   | 0.625 | 2.625 | 1.231 | 0.375 | 0.9375 | 3.875  | 60 | 60 | 264.00:     |
| 0327080  | 4MT   | 0.75  | 3.5   | 1.231 | 0.375 | 1.125  | 3.875  | 60 | 60 | 360.00:     |
| 0327081  | 5MT   | 0.75  | 3.5   | 1.748 | 0.375 | 1.125  | 4.625  | 60 | 60 | 378.00:     |

### Pipe Nose Live Centers

One center fits a wide range of sizes. For the best support and chatter-free parts, choose a center where the part will seat as close to the large diameter as possible.

- Accuracy guaranteed to  $\pm .00025$ .
- For use in machining pipe, tubing and other thin wall workpieces.



| Part No. | Taper | A   | E      | K       | Price /Each |
|----------|-------|-----|--------|---------|-------------|
| 0327098  | 2MT   | 2.5 | 0.3125 | 3.75    | \$376.00    |
| 0327099  | 3MT   | 2.5 | 0.3125 | 3.75    | 376.00      |
| 0327100  | 4MT   | 2.5 | 0.3125 | 3.75    | 376.00      |
| 0327101  | 3MT   | 3.5 | 0.4375 | 4.90625 | 486.00      |
| 0327102  | 4MT   | 3.5 | 0.4375 | 4.90625 | 486.00      |
| 0327103  | 5MT   | 3.5 | 0.4375 | 4.90625 | 486.00      |
| 0327104  | 3MT   | 4.5 | 0.4375 | 4.875   | 538.00      |
| 0327105  | 4MT   | 4.5 | 0.4375 | 4.875   | 538.00      |
| 0327106  | 5MT   | 4.5 | 0.4375 | 4.875   | 538.00      |
| 0327107  | 5MT   | 5.5 | 0.375  | 6.3125  | 664.00      |
| 0327108  | 6MT   | 5.5 | 0.375  | 6.3125  | 664.00      |

### Long Series Full Dead Centers

- Accuracy guaranteed to  $\pm .00005$ .
- Through hardened to 61-63 Rc.
- Applying a Moly EP632 grease on the point will reduce friction and wear



| Part No. | Taper  | P      | K      | C/A   | Price /Each |
|----------|--------|--------|--------|-------|-------------|
| 0327082  | 7 B&S  | 5.25   | 2.375  | 0.72  | \$110.00:   |
| 0327083  | 12 B&S | 12.25  | 5.125  | 1.797 | 230.00:     |
| 0327084  | 2 MT   | 5.1875 | 2.625  | 0.7   | 106.00:     |
| 0327085  | 3 MT   | 6.25   | 3.0625 | 0.938 | 124.00:     |
| 0327086  | 4 MT   | 7.75   | 3.6875 | 1.231 | 162.00:     |
| 0327087  | 5 MT   | 9.5    | 4.3125 | 1.748 | 210.00:     |
| 0327088  | 6 MT   | 12.5   | 5.25   | 2.494 | 332.00:     |
| 0327089  | 10 J   | 8.5    | 3.5    | 1.25  | 172.00:     |
| 0327090  | 14 J   | 11.5   | 4.5    | 1.75  | 230.00:     |
| 0327091  | 2 MT   | 6.75   | 4.1875 | 0.7   | 120.00:     |
| 0327092  | 3 MT   | 6.75   | 3.5625 | 0.938 | 134.00:     |
| 0327093  | 4 MT   | 8.25   | 4.1875 | 1.231 | 172.00:     |
| 0327094  | 5 MT   | 10     | 4.8125 | 1.748 | 226.00:     |
| 0327095  | 6 MT   | 13     | 5.75   | 2.494 | 348.00:     |
| 0327096  | 10 J   | 9.25   | 4.25   | 1.25  | 188.00:     |
| 0327097  | 14 J   | 12     | 5      | 1.75  | 240.00:     |

### Pipe and Bull Nose Dead Centers

- Accuracy guaranteed to  $\pm .00005$ .
- Through-hardened to 61-63 Rc.
- Special "F" dimension available on bull nose



| Part No.                     | Taper | A     | F   | N     | E   | K        | Price     |
|------------------------------|-------|-------|-----|-------|-----|----------|-----------|
| 0327109                      | 7 B   | 2.125 |     | 1.84  | 0.5 | 2.84     | \$168.00: |
| 0327110                      | 3MT   | 2.75  |     | 2.381 | 0.5 | 3.38     | 244.00:   |
| 0327111                      | 4MT   | 2.75  |     | 2.381 | 0.5 | 3.38     | 290.00:   |
| 0327112                      | 5MT   | 3.5   |     | 3.031 | 0.5 | 4.03     | 344.00:   |
| 0327113                      | 14J   | 3.5   |     | 3.031 | 0.5 | 4.03     | 346.00:   |
| <b>Bull Nose Dead Center</b> |       |       |     |       |     |          |           |
| 0327114                      | 2MT   | 2.125 | 0.5 | 1.407 | 0.5 | 2.40625  | \$230.00: |
| 0327115                      | 3MT   | 2.75  | 0.5 | 1.948 | 0.5 | 2.953125 | 318.00:   |
| 0327116                      | 4MT   | 2.75  | 0.5 | 1.948 | 0.5 | 2.9375   | 366.00:   |
| 0327117                      | 5MT   | 3.5   | 1   | 2.165 | 0.5 | 3.171875 | 418.00:   |
| 0327118                      | 14J   | 3.5   | 1   | 2.165 | 0.5 | 3.171875 | 420.00:   |
| 0327119                      | 2MT   | 2.125 | 1   | 0.974 | 0.5 | 1.96875  | 240.00:   |
| 0327120                      | 3MT   | 2.75  | 1   | 1.515 | 0.5 | 2.515625 | 332.00:   |
| 0327121                      | 4MT   | 2.75  | 1   | 1.515 | 0.5 | 2.515625 | 378.00:   |
| 0327122                      | 5MT   | 3.5   | 2   | 1.299 | 0.5 | 2.296875 | 428.00:   |
| 0327123                      | 14J   | 3.5   | 2   | 1.299 | 0.5 | 2.296875 | 430.00:   |
| 0327124                      | 3MT   | 2.75  | 1.5 | 1.082 | 0.5 | 2.078125 | 344.00:   |
| 0327125                      | 4MT   | 2.75  | 1.5 | 1.082 | 0.5 | 2.078125 | 390.00:   |

### CNC Dead Centers Steel & Carbide Tipped

- Accuracy guaranteed to  $\pm .00005$ .
- Through-hardened to 61-63 Rc.
- Works on all CNC machines
- Meets the rigid requirements of CNC turning



| Part No.              | Taper | A     | N       | K       | Price /Each |
|-----------------------|-------|-------|---------|---------|-------------|
| <b>Steel</b>          |       |       |         |         |             |
| 0327126               | 2MT   | 3/8   | 1 1/4   | 1 11/16 | \$120.00:   |
| 0327127               | 3MT   | 0.5   | 2       | 2.4375  | 126.00:     |
| 0327128               | 4MT   | 0.625 | 2.25    | 2.875   | 160.00:     |
| 0327129               | 5MT   | 0.875 | 2.5     | 3.4375  | 214.00:     |
| 0327130               | 6MT   | 1.75  | 3.6875  | 5.3125  | 298.00:     |
| 0327131               | 3MT   | 0.375 | 1.25    | 1.6875  | 126.00:     |
| 0327132               | 4MT   | 0.5   | 2       | 2.625   | 160.00:     |
| 0327133               | 5MT   | 0.5   | 2       | 2.9375  | 214.00:     |
| 0327134               | 3MT   | 0.75  | 2       | 2.4375  | 126.00:     |
| 0327135               | 4MT   | 1     | 2.25    | 2.875   | 160.00:     |
| 0327136               | 5MT   | 1.25  | 2.5     | 3.4375  | 214.00:     |
| 0327137               | 3MT   | 1     | 1.625   | 2.375   | 126.00:     |
| 0327138               | 4MT   | 1.25  | 2.03125 | 2.9375  | 160.00:     |
| 0327139               | 5MT   | 1.75  | 2.46875 | 3.625   | 214.00:     |
| 0327140               | 6MT   | 2.25  | 3.6875  | 5.3125  | 298.00:     |
| <b>Carbide Tipped</b> |       |       |         |         |             |
| 0327141               | 3MT   | 1     | 1.625   | 2.375   | \$190.00:   |
| 0327142               | 4MT   | 1.25  | 2       | 2.90625 | 216.00:     |
| 0327143               | 5MT   | 1.75  | 2.5     | 3.65625 | 282.00:     |
| 0327144               | 3MT   | 0.5   | 2       | 2.625   | 170.00:     |
| 0327145               | 4MT   | 0.625 | 2.28125 | 3.09375 | 204.00:     |
| 0327146               | 5MT   | 0.625 | 2.5     | 3.4375  | 262.00:     |

# CENTERS, LATHE TOOLING & TOOL HOLDERS

## Centers Cont.



### Large Carbide Point Imperial Dead Centers Increased Centerhole Range

Imperial Carbide Dead Centers cover the requirements for a wide range of workpiece center holes. They reduce costs by eliminating the need for special dead centers. Knockout ends are hardened on carbide tipped dead centers.

- Accuracy guaranteed to  $\pm .0001$ .
- Covers the widest range of center hole sizes
- Eliminates the need for special centers
- Also available in other tapers



| Part No.                | Taper | T    | A        | H     | L      | K      | E     | Price /Each |
|-------------------------|-------|------|----------|-------|--------|--------|-------|-------------|
| <b>Full Dead Center</b> |       |      |          |       |        |        |       |             |
| 0327147                 | 2MT   | 1    | 1.25     |       |        | 2.375  | 0.375 | \$136.00:   |
| 0327148                 | 3MT   | 1    | 1.25     |       |        | 2.375  | 0.375 | 162.00:     |
| 0327149                 | 4MT   | 1.25 | 1.75     |       |        | 2.6875 | 0.5   | 218.00:     |
| 0327150                 | 5MT   | 1.25 | 1.75     |       |        | 3.3125 |       | 310.00:     |
| 0327151                 | 6J    | 1    | 1.25     |       |        | 2.375  | 0.375 | 164.00:     |
| 0327152                 | 9J    | 1.25 | 1.75     |       |        | 2.6875 | 0.5   | 226.00:     |
| 0327153                 | 10J   | 1.25 | 1.75     |       |        | 2.6875 | 0.5   | 226.00:     |
| 0327154                 | 14J   | 1.25 | 1.75     |       |        | 3.5    |       | 336.00:     |
| 0327155                 | 7B&S  | 1    | 1.25     |       |        | 2.375  | 0.375 | 130.00:     |
| 0327156                 | 9B&S  | 1.25 | 1.75     |       |        | 2.6875 | 0.5   | 308.00:     |
| 0327157                 | 12B&S | 1.25 | 1.796875 |       |        | 4      |       | 354.00:     |
| <b>Half Dead Center</b> |       |      |          |       |        |        |       |             |
| 0327158                 | 2MT   | 1    | 1.25     | 0.125 | 1.6875 | 2.375  | 0.375 | \$234.00:   |
| 0327159                 | 3MT   | 1    | 1.25     | 0.125 | 1.6875 | 2.375  | 0.375 | 254.00:     |
| 0327160                 | 4MT   | 1.25 | 1.75     | 0.25  | 2.25   | 2.9375 | 0.5   | 314.00:     |
| 0327161                 | 5MT   | 1.25 | 1.75     | 0.25  | 2.75   | 3.3125 |       | 404.00:     |
| 0327162                 | 6J    | 1    | 1.25     | 0.125 | 1.875  | 2.375  | 0.375 | 258.00:     |
| 0327163                 | 9J    | 1.25 | 1.75     | 0.25  | 1.875  | 2.9375 | 0.5   | 318.00:     |
| 0327164                 | 10J   | 1.25 | 1.75     | 0.25  | 2      | 2.9375 | 0.5   | 318.00:     |
| 0327165                 | 14J   | 1.25 | 1.75     | 0.25  | 3      | 3.5    |       | 428.00:     |
| 0327166                 | 7B&S  | 1    | 1.25     | 0.125 | 1.875  | 2.375  | 0.375 | 214.00:     |
| 0327167                 | 9B&S  | 1.25 | 1.75     | 0.25  | 2      | 2.9375 | 0.5   | 398.00:     |
| 0327168                 | 12B&S | 1.25 | 1.796875 | 0.25  | 3.25   | 4      |       | 448.00:     |

## Lathe Tooling Dunham Pull Bar

### Features and Benefits

- Pulls bar to last useable part length.
- Eliminates expensive bar feeds.
- Works close to chuck or collet nose.
- Pull-positions bar +/- 0.001"
- Does not interfere with adjacent tools or turret movement.



### Bar Pull Kits

| Part No. | Set    | Set Range | Price /Each |
|----------|--------|-----------|-------------|
| 7014714  | 6 Pcs. | .625"     | \$204.00    |
| 7014716  | 4 Pcs. | 1.00"     | 209.00:     |

### Bar Pull Shanks

| Part No. | Shank Dia. | Price /Each |
|----------|------------|-------------|
| 7014724  | 1.00"      | \$67.00     |

### Bar Pull Grippers

| Part No. | Shank Dia. | Price /Each |
|----------|------------|-------------|
| 7014719  | .500"      | \$55.00:    |
| 7014720  | .500"      | 55.00:      |
| 7014721  | .625"      | 55.00:      |
| 7014722  | .750"      | 55.00:      |
| 7014723  | .875"      | 55.00:      |
| 7014725  | 1.250"     | 55.00:      |
| 7014726  | 1.500"     | 55.00:      |

## Tool Holders



### Quick Change Tool Posts



| Part No. | Tool Holder                               | Type/Mounting | Price /Each |
|----------|---|---------------|-------------|
| 7013045  | ca super precision quick change tool post | CA            | \$615.00    |
| 7013001  | cx super precision quick change tool post | CXA           | 489.00      |
| 7013000  | cx piston type tool post                  | CXA           | 325.00      |
| 7012957  | super precision quick change tool post    | BXA           | 359.00      |
| 7012956  | piston type tool post                     | BXA           | 248.00      |
| 7012913  | super precision quick change tool post    | AXA           | 294.00      |
| 7012912  | piston type tool post                     | AXA           | 218.00      |

### Turning and Facing Holders

- Takes various sizes of bits
- Turning and Facing tools can be locked in together

| Part No.        | Tool Holder                         | Type/Mounting | Price /Each |
|-----------------|-------------------------------------|---------------|-------------|
| 7012914         | regular turning & facing holder     | AXA           | \$49.00     |
| 7012958         | regular turning & facing holder     | BXA           | 57.00       |
| 7013002         | regular turning & facing holder     | CXA           | 72.00       |
| 7013046         | 1 regular turning & facing holder   | CA            | 87.00       |
| <b>OverSize</b> |                                     |               |             |
| 7012929         | overSize turning & facing holder    | AXA           | \$74.00     |
| 7012972         | overSize turning & facing holder    | BXA           | 82.00       |
| 7013016         | overSize turning & facing holder    | CXA           | 107.00      |
| 7013060         | 1s overSize turning & facing holder | CA            | 133.00      |

### Boring, Turning and Facing Holders

"V" groove holds round shank boring bars and tools as well as square tool bits

| Part No.        | Tool Holder                                 | Type/Mounting | Price /Each |
|-----------------|---|---------------|-------------|
| 7012930         | regular boring, turning & facing holder     | AXA           | \$53.00     |
| 7012973         | regular turning & facing holder             | BXA           | 64.00       |
| 7013017         | regular turning & facing holder             | CXA           | 79.00       |
| 7013061         | 2 regular boring, turning & facing holder   | CA            | 98.00       |
| <b>OverSize</b> |   |               |             |
| 7012935         | overSize boring, turning & facing holder    | AXA           | \$77.00     |
| 7012978         | overSize boring, turning & facing holder    | BXA           | 87.00       |
| 7013022         | overSize turning & facing holder            | CXA           | 113.00      |
| 7013066         | 2s overSize boring, turning & facing holder | CA            | 143.00      |



# TOOL HOLDERS

## Tool Holders Cont.



### Multiple Tool Holders



| Part No. | Tool Holder            | Type/Mounting | Price /Each |
|----------|------------------------|---------------|-------------|
| 7012945  | multiple tool holder   | AXA           | \$82.00     |
| 7012988  | multiple tool holder   | BXA           | 95.00       |
| 7013033  | multiple tool holder   | CXA           | 107.00      |
| 7013078  | 6 multiple tool holder | CA            | 151.00      |

### Multi-Purpose Holders



| Part No. | Tool Holder            | Type/Mounting | Price /Each |
|----------|------------------------|---------------|-------------|
| 7012953  | 6 multi-purpose holder | AXA           | \$143.00    |
| 7012996  | multi-purpose holder   | BXA           | 156.00      |
| 7013041  | multi-purpose holder   | CXA           | 187.00      |
| 7013087  | 9 multi-purpose holder | CA            | 220.00      |

### Extension Tool Holders #13 & #13L

| Part No. | Tool Holder           | Type/Mounting | Price /Each |
|----------|-----------------------|---------------|-------------|
| 7012920  | extension tool holder | AXA           | \$72.00     |
| 7012921  | extension tool holder | AXA           | 77.00       |
| 7012964  | extension tool holder | BXA           | 82.00       |
| 7012965  | extension tool holder | BXA           | 87.00       |
| 7013008  | extension holder      | CXA           | 103.00      |
| 7013009  | extension holder      | CXA           | 108.00      |
| 7013052  | 13 dovetail holder    | CA            | 123.00      |
| 7013053  | 13L dovetail holder   | CA            | 128.00      |

### Boring Bar Tool Holders #4D, #41D



| Part No. | Tool Holder           | Type/Mounting | Price /Each |
|----------|-----------------------|---------------|-------------|
| 7013074  | 4d boring bar holder  | CA            | \$129.00    |
| 7013071  | 41d boring bar holder | CA            | 149.00      |
| 7013029  | boring bar holder     | CXA           | 105.00      |
| 7013026  | d boring bar holder   | CXA           | 116.00      |
| 7012984  | boring bar holder     | BXA           | 91.00       |
| 7012982  | boring bar holder     | BXA           | 104.00      |
| 7012941  | boring bar holder     | AXA           | 75.00       |
| 7012939  | boring bar holder     | AXA           | 87.00       |

### Heavy Duty Boring Bar Holders #4, #41



| Part No. | Tool Holder                     | Type/Mounting | Price /Each |
|----------|---------------------------------|---------------|-------------|
| 7012937  | heavy duty boring holder        | AXA           | \$105.00    |
| 7012938  | heavy duty boring bar holder    | AXA           | 110.00      |
| 7012980  | heavy duty boring bar holder    | BXA           | 112.00      |
| 7012981  | heavy duty boring bar holder    | BXA           | 127.00      |
| 7013024  | heavy duty boring bar holder    | CXA           | 135.00      |
| 7013025  | heavy duty boring bar holder    | CXA           | 148.00      |
| 7013069  | 4 heavy duty boring bar holder  | CA            | 159.00      |
| 7013070  | 41 heavy duty boring bar holder | CA            | 173.00      |

### Boring #100 Holders #100, #104, #141

| Part No. | Tool Holder                            | Type/Mounting | Price /Each |
|----------|--|---------------|-------------|
| 7012916  | heavy duty boring bar holder           | AXA           | \$77.00     |
| 7012917  | heavy duty boring bar holder           | AXA           | 82.00       |
| 7012923  | heavy duty boring bar holder           | AXA           | 96.00       |
| 7012960  | heavy duty boring bar holder           | BXA           | 94.00       |
| 7012961  | heavy duty boring bar holder           | BXA           | 99.00       |
| 7012966  | heavy duty boring bar holder           | BXA           | 113.00      |
| 7013004  | heavy duty boring bar holder           | CXA           | 105.00      |
| 7013005  | heavy duty boring bar holder           | CXA           | 112.00      |
| 7013010  | heavy duty boring bar holder           | CXA           | 130.00      |
| 7013047  | 10 knurling, facing and turning holder | CA            | 152.00      |
| 7013048  | 100 heavy duty boring bar holder       | CA            | 127.00      |
| 7013054  | 141 heavy duty boring bar holder       | CA            | 149.00      |

### Boring #42 Holders



| Part No. | Tool Holder          | Type/Mounting | Price /Each |
|----------|----------------------|---------------|-------------|
| 7012940  | boring bar holder    | AXA           | \$182.00    |
| 7012983  | boring bar holder    | BXA           | 193.00      |
| 7013027  | boring bar holder    | CXA           | 204.00      |
| 7013072  | 42 boring bar holder | CA            | 242.00      |

### Ducktail Chuck Holders



| Part No. | Tool Holder              | Type/Mounting | Price /Each |
|----------|--------------------------|---------------|-------------|
| 7012936  | dovetail chuck holder    | AXA           | \$204.00    |
| 7012979  | dovetail chuck holder    | BXA           | 215.00      |
| 7013023  | dovetail chuck holder    | CXA           | 226.00      |
| 7013068  | 35 dovetail chuck holder | CA            | 264.00      |

### Universal Tool Holders #20, #30, #22

- #20 & #30 holders provides for many angular turning, contouring and chamfering operations
- #22 with it's two dovetail design leads to a wide range of applications by permitting front and rear turning, contouring, boring and facing operations

### 5C Collet Holders



| Part No. | Tool Holder      | Type/Mounting | Price /Each |
|----------|------------------|---------------|-------------|
| 7012944  | 5c collet holder | AXA           | \$138.00    |
| 7012987  | 5c collet holder | BXA           | 144.00      |
| 7013032  | 5c collet holder | CXA           | 163.00      |
| 7013077  | 5c collet holder | CA            | 184.00      |

### Morse Taper Holders #5, #53, #54



| Part No. | Tool Holder           | Type/Mounting | Price /Each |
|----------|-----------------------|---------------|-------------|
| 7012942  | morse taper holder    | AXA           | \$79.00     |
| 7012943  | morse taper holder    | AXA           | 99.00       |
| 7012985  | morse taper holder    | BXA           | 84.00       |
| 7012986  | morse taper holder    | BXA           | 110.00      |
| 7013030  | morse taper holder    | CXA           | 105.00      |
| 7013031  | morse taper holder    | CXA           | 121.00      |
| 7013075  | 5 morse taper holder  | CA            | 123.00      |
| 7013076  | 54 morse taper holder | CA            | 143.00      |

### Drilling and Boring Holders



| Part No. | Tool Holder                 | Type/Mounting | Price /Each |
|----------|-----------------------------|---------------|-------------|
| 7012932  | drilling & boring holder    | AXA           | \$225.00    |
| 7012975  | drilling & boring holder    | BXA           | 248.00      |
| 7013019  | drilling & boring holder    | CXA           | 264.00      |
| 7013063  | 21 drilling & boring holder | CA            | 325.00      |

### Breach Loading Taper Sockets and Holders



| Part No. | Tool Holder                    | Type/Mounting | Price /Each |
|----------|--------------------------------|---------------|-------------|
| 7013028  | breach-loading holder          | CXA           | \$231.00    |
| 7013073  | 44 breach-loading taper holder | CA            | 248.00      |



| Part No.                                       | Tool Holder                             | Type/Mounting | Price /Each |
|--|---|---------------|-------------|
| <b>#20</b>                                     |   |               |             |
| 7012931  | universal tool holder                   | AXA           | \$149.00    |
| 7012974  | universal tool holder #                 | BXA           | 159.00      |
| 7013018  | universal tool holder #                 | CXA           | 171.00      |
| 7013062  | 20 universal tool holder #20            | CA            | 198.00      |
| <b>#30</b>                                     |   |               |             |
| 7013067  | 30 universal tool holder #30            | CA            | 187.00      |
| <b>#22-Universal Turning and Boring Holder</b> |   |               |             |
| 7012933  | universal turning & boring holder       | AXA           | 182.00      |
| 7012976  | universal turning & boring holder       | BXA           | 204.00      |
| 7013020  | universal tool holder #                 | CXA           | 220.00      |
| 7013064  | 22 universal turning & boring holder #2 | CA            | 248.00      |

## Mills

# Accu-Tapper

by ISCO

### Accu-Tapper Tapping Machines

Accu-Tapper offers fast, accurate and convent tapping on the bench. Complete secondary operations, such as tapping, chamfering and deburring, can be done off-line, saving valuable CMC production time. The accu-Tapper's horizontal design and dual-action friction clutch give it unmatched sensitivity, allowing it to tap even the smallest holes, virtually eliminating tap breakage. Its tap long and irregularly-shaped parts. It taps through and blind holes with equal ease.

- Single-Speed and Two-Speed Models
- 1/2" Chuck, 1/3 HP Motor, 110 VAC
- Dual-action Clutch for fast direction change
- Sliding Backing Plate for perfect tap alignment
- Adjustable Slide for setting tap depth
- Easy Attachment to bench or stand
- Requires NO permanent fixturing
- Requires NO torque adjustment
- Guide Plate Mounting Holes for attachment of optional angle plate or parts for additional support
- Optional Angle Plate & Die Holders



| Part No. | Description  | RPM         | Price /Ea  |
|----------|--|-------------|------------|
| 3123284  | AT-2010 1/2"Chuck 600RPM Elect Single Spd Motor Tapping Machine  | 600rpm      | \$1358.90: |
| 3123285  | AT-2110 1/2"Chuck 600/400RPM Elec Dual Spd Motor Tapping Machine | 600/400 rpm | 1487.30:   |
| 3123286  | AT-2111-000 Aluminum ACCU-TAPPER Angle Plate                     |             | 24.18:     |
| 3123287  | AT-2100-176 13/16" Steel ACCU-TAPPER Die Holder                  |             | 48.79:     |
| 3123288  | AT-2110-176 1" Steel ACCU-TAPPER Die Holder                      |             | 46.22:     |



### Tube Shark - Portable Hydraulic Tube Benders

Tube Shark® is perfect for the home shop, fabrication shop, race car or aircraft builder, anyone who needs a practical and affordable precision tube bender.

- Produces bends up to 180°
- Folds in seconds & rolls for easy storage.
- Bending capacity 1/2" to 2" O.D.
- Accurate to within 1/4°
- Bends round & square tube, bar stock & pipe
- Hydraulic power
- Choice of foot control air pump or hand control electric unit



| Part No. | Vendor No.   | Description  | Price /Ea  |
|----------|--------------|--|------------|
| 3123279  | TSA-2-1-0002 | TSA-2-1-0002 3000PSI TUBESHARK Pneumatic Pump Tube Bender    | \$3638.00: |
| 3123280  | TSA-2-1-0003 | TSA-2-1-0003 110V TUBESHARK Electric/Hydraulic Tube Bender   | 5299.71:   |
| 3123281  | TSA-2-1-0004 | TSA-2-1-0004 3000PSI TUBESHARK Pneum Benchmark Tube Bender   | 2696.40:   |
| 3123282  | TSN-1        | TSN-1 Steel/Aluminum TUBESHARK Electric Round Notcher        | 3424.00:   |
| 3123283  | TSA-2-1-0006 | TSA-2-1-0006 TUBESHARK Combo Portable Bender/Notcher w /Cart | 7276.00:   |

# DIGITAL READOUT KITS & HORIZONTAL SAWS

## Digital Readout Kits



### Digital Readout Kits (Mills)

3 Year Warranty, Life time on the glass

Package Includes:

- Digital Readout
- 2 linear encoders
- Mounting arm
- Mounting brackets
- Instructions

Features:

- Both hole calculation
- Absolute/Incremental
- Inch/Metric
- Part-Centering
- Axis Preset/Reset
- Radius/Diameter
- Linear compensation

Specifications:

- Resolution: .0002/.0005
- Universal power supply (110-220Vac)
- Display (green led display)
- Storage temp. -13°F to 158°F
- Sealing protection (front panel IP54)
- Armored cables
- Scale accuracy ± 10 microns



| Part No.               | Description                             | Travels   | Price    |
|------------------------|---|-----------|----------|
| <b>2 Axis Dro Kits</b> |   |           |          |
| 3123248                | 12mm x 30mm 110/220V AC Manual Kneemill | 12" x 30" | 1254.75: |
| 3123249                | 12mm x 36mm 110/220V AC Manual Kneemill | 12" x 36" | 1254.75: |
| 3123250                | 16mm x 32mm 110/220V AC Manual Kneemill | 16" x 32" | 1359.75: |
| 3123251                | 18mm x 40mm 110/220V AC Manual Kneemill | 18" x 40" | 1359.75: |
| 3123252                | 16mm x 36mm 110/220V AC Manual Kneemill | 16" x 36" | 1359.75: |

| Part No.               | Description                                   | Travels        | Price    |
|------------------------|---|----------------|----------|
| <b>3 Axis Dro Kits</b> |   |                |          |
| 3123253                | 12mm x 30mm x 6mm 110/220V AC Manual Kneemill | 12" x 30" x 6" | 1884.75: |
| 3123254                | 12mm x 36mm x 6mm 110/220V AC Manual Kneemill | 12" x 36" x 6" | 1884.75: |
| 3123255                | 16mm x 32mm x 6mm 110/220V AC Manual Kneemill | 16" x 32" x 6" | 1937.25: |
| 3123256                | 18mm x 40mm x 6mm 110/220V AC Manual Kneemill | 18" x 40" x 6" | 1937.25: |
| 3123257                | 16mm x 36mm x 6mm 110/220V AC Manual Kneemill | 16" x 36" x 6" | 1937.25: |

\* All combinations are available

## Digital Readout Systems

Features:

- 20 tool offsets
- Taper calculation
- Absolute/Incremental
- Inch/Metric
- Axis Preset/Reset
- Radius/Diameter



| Part No. | Description                           | Travels    | Price      |
|----------|---------------------------------------|------------|------------|
| 3123258  | 6mm x 36mm 110/220V AC Manual Lathe   | 6" x 36"   | \$1622.25: |
| 3123259  | 8mm x 40mm 110/220V AC Manual Lathe   | 8" x 40"   | 1674.75:   |
| 3123260  | 8mm x 60mm 110/220V AC Manual Lathe   | 8" x 60"   | 1989.75:   |
| 3123261  | 10mm x 40mm 110/220V AC Manual Lathe  | 10" x 40"  | 1706.25:   |
| 3123262  | 10mm x 60mm 110/220V AC Manual Lathe  | 10" x 60"  | 1989.75:   |
| 3123263  | 12mm x 60mm 110/220V AC Manual Lathe  | 12" x 60"  | 2021.25:   |
| 3123264  | 12mm x 80mm 110/220V AC Manual Lathe  | 12" x 80"  | 2619.75:   |
| 3123265  | 12mm x 120mm 110/220V AC Manual Lathe | 12" x 120" | 3669.75:   |
| 3123266  | 14mm x 120mm 110/220V AC Manual Lathe | 14" x 120" | 3701.25:   |
| 3123267  | 14mm x 160mm 110/220V AC Manual Lathe | 14" x 160" | 4824.75:   |
| 3123268  | 18mm x 200mm 110/220V AC Manual Lathe | 18" x 200" | 5507.25:   |

\* All lengths and combinations are available

## Digital Readout Systems for Grinders

3 year warranty, complete package with mounting hardware

DRO Features:

- Absolute/Incremental
- Inch/Metric
- Axis Preset/Reset
- Radius/Diameter

Scale Features:

- 1 micron resolution
- Detachable armored cables
- Roller bearing on the reader head



| Part No. | Description                            | Travels   | Price      |
|----------|--|-----------|------------|
| 3123269  | 6mm x 12mm 110/220V AC Manual Grinder  | 6" x 12"  | \$1837.50: |
| 3123270  | 6mm x 18mm 110/220V AC Manual Grinder  | 6" x 18"  | 1837.50:   |
| 3123271  | 8mm x 18mm 110/220V AC Manual Grinder  | 8" x 18"  | 1863.75:   |
| 3123272  | 10mm x 20mm 110/220V AC Manual Grinder | 10" x 24" | 1884.75:   |
| 3123273  | 12mm x 24mm 110/220V AC Manual Grinder | 12" x 24" | 1884.75:   |

\* All lengths and combinations are available

## Horizontal Saws



### Horizontal Band Saw

6" x 10"

- Heavy duty cast iron saw head and table
- Oil bath hardened and ground worm gear
- Adjustable ball bearing blade guides
- Adjustable hydraulic feed system
- Automatic shut-off at end of cut
- Comes with casters for portability
- Use our synthetic cutting fluid part #0301881
- 110 Volt

Specifications

**Cutting Capacity:** 6" Round, 9-1/2" x 6" Rectangle, 11" x 1" Flat Stock

**Blade Size:** 3/4" x .032" x 93"

**Blade Speeds:** 86-132-178-260 SFPM

**Motor:** 3/4 HP, capacitor start, 1725 RPM

**Machine Dimensions:** 50"L x 18"W x 41"H

**Coolant Pump:** 1 Gallon Capacity, single phase motor. Wet cutting models complete with hose, flexible nozzle, shut-off valve, tank and baffle.

**Height of Work Table:** 23-1/2"

**Net Weight:** 346 lbs.



| Part No. | Description                          | Price /Each |
|----------|--------------------------------------|-------------|
| 0950083  | 7" x 12" Horizontal Cut-Off Band Saw | \$1,289.56: |

## Edwards Ironworkers



### The fastest growing line of Ironworkers in the USA

Your one stop fab shop! These machines shear flats, rounds & angles, and also punch holes and notch steel. Work more IRON for less coin.

#### 25 Ton Ironworker

- Punch Capacity: 1" hole in 5/16" mild steel
- Open Station: Shown with optional multi shear (shears 2" x 2" x 1/4" angle iron; 6" x 1/4" flats; and has a built in rod shear), and can also use a brake; pipe notcher; or copper notcher

| Part No. | Description      | Price /Ea   |
|----------|------------------|-------------|
| 0950084  | 220 Volt/1 Phase | \$3,796.00: |



#### 55 Ton Ironworker

- Punch Capacity: 1-1/16" hole through 5/8" plate, Optional oversize to 1-9/16"
- Bar Shear: 3/8" x 14" or 1/2" x 12"
- Angle Shear: 4" x 4" x 1/4" and 3" x 3" x 3/8"
- Motor Standard: 3HP, 3PH, 208/240V (options available)
- Open Station for Optional: 2X4X5/16" copper notcher; 8" or 10" brake; pipe notcher or rod shear
- "Whisper Quiet" hydraulic system and electric foot pedals are standard

| Part No. | Description      | Price /Ea   |
|----------|------------------|-------------|
| 0950085  | 220 Volt/3 Phase | \$6,596.00: |
| 0951728  | 220 Volt/1 Phase | 6,896.00:   |
| 0951729  | 440 Volt         | 6,716.00:   |
| 0951730  | 575 Volt         | 7,164.00:   |



#### 100 Ton Ironworker

- Punch Capacity: 1-1/16" hole through 1" plate, Optional oversize to 1-9/16"
- Bar Shear: 1" x 10" or 3/4" x 14"
- Angle Shear: 6" x 6" x 1/2"
- Open Station Tooling Options: 2-1/2" x 6" x 1/2"

| Part No. | Description      | Price /Ea    |
|----------|------------------|--------------|
| 0950086  | 220 Volt/3 Phase | \$13,496.00: |
| 0951739  | 220 Volt/1 Phase | 13,496.00:   |
| 0951740  | 440 Volt         | 13,616.00:   |
| 0951741  | 575 Volt         | 14,064.00:   |





# FINISHING EQUIPMENT & LATHES

## Finishing Equipment



### Combination 6" Belt and Chamfering Machine

The WILTON Belt and Disc Finishing Machine will handle virtually all the finishing operations in a production line, metal or wood pattern shop, machine shop, cabinet or school shop in one compact unit. Speeds are ideal for working in metal, wood, plastics, compositions, leather, and more.

Combination Belt Sander and Edge Mill/Chamfering Machine manages additional finishing jobs such as: beveling, and deburring on flats and squares of ferrous and non-ferrous materials.

#### Standard Features

- Belt operates at any angle
- Powered by a heavy-duty, UL/CSA approved motor
- Plain and compound miters are easily obtained by using the standard die cast aluminum miter gauge

#### Standard Equipment

- Variable-position locks; belt head adjusts vertically, horizontally and in-between
- Large cast iron slotted table
- Heavy-duty, one piece steel stand



| Part No. | Description                    | Price       |
|----------|--------------------------------|-------------|
| 7012809  | 4500, 1-1/2 HP, 115/230V       | \$2,552.02: |
| 7012810  | 4501, 1-1/2 HP, 3 PH, 230/460V | 2,552.02:   |

### Square Wheel Belt Grinder

#### Standard Features

- 1 HP, 1 Phase, 115/230V TEFC motor
- Infinitely variable speeds 100 to 6000 sfpm
- Continuous speed adjustment while in operation
- Can be used for flat and angular grinding, shaping, roughing and contouring



| Part No. | Description            | Price       |
|----------|------------------------|-------------|
| 7012808  | 4103, 1HP, PH, 115/230 | \$2,605.35: |
| 7012811  | Pedestal Floor Stand   | 531.55:     |

## Lathes



### Shop Fox® 10" x 54" Vertical Mill with Power Feed - Variable Speed

Our largest mill has all the features necessary for an industrial shop: a powerful 3 HP, 3-phase motor with variable speeds from 80 to 4250 RPM, a 10" x 54" table, longitudinal power feed, and a digital readout. The 3 axis digital readout has a 5µm resolution, machine error compensation, absolute/incremental coordinate display, arc/line of holes/angled cut functions, and 199 user defined datum points. Rest assured, this machine has the capability to complete the hardest jobs with extreme precision and repeatability.

#### Features:

- One-shot pump lubrication
- Auto down feed
- Quill feeds/ spindle rev: .0019, .0035, .0058
- Auto stop w/micro adjustable stop
- R-8 spindle
- Longitudinal power feed
- Hardened & ground table surface
- Chrome plated, precision ground quill
- Adjustable micrometer quill depth stop



| Part No. | Description                                       | Price /Ea    |
|----------|---|--------------|
| 3122899  | M1006 10"x54" 3HP 220V 3Phase w/DRO Vertical Mill | \$12,164.71: |

### Shop Fox® 12" x 30" Combo Lathe Mill with Stand

This lathe/mill combo features a full-size lathe with 12 speeds, 29-1/2" distance between centers, and a 12-1/2" swing over the bed. The mill has 4-speed gearbox, 3/4 HP motor, 14-1/2" swing, and a 17-1/4" spindle-to-work table capacity. This combo lathe/mill provides the capabilities of a stand-alone lathe and a stand-alone mill, with the footprint of one machine.



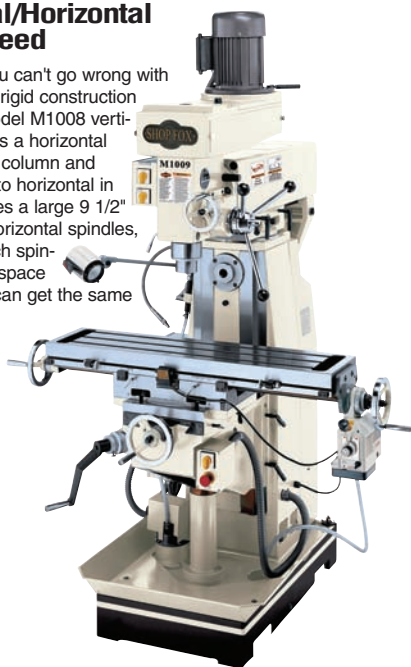
| Part No. | Description                                  | Price /Ea   |
|----------|--|-------------|
| 3122914  | M1109 12"x30"x12-1/2" Swing Combo Lathe/Mill | \$5,083.75: |

## Lathes Cont.



### Shop Fox® Vertical/Horizontal Mill with Power Feed

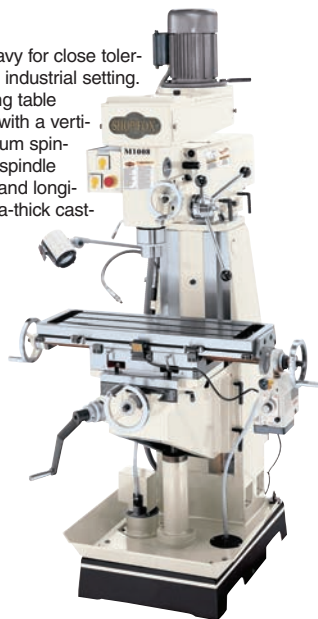
For pure milling versatility, you can't go wrong with this mill. Built with the same rigid construction and great features as our Model M1008 vertical mill, the Model M1009 has a horizontal spindle head mounted in the column and easily converts from vertical to horizontal in under 5 minutes. Also includes a large 9 1/2" x 39 3/8" table, 1" & 1 1/4" horizontal spindles, and a separate motor for each spindle. Why use valuable shop space for two machines when you can get the same results from one?



| Part No. | Description   | Price /Ea   |
|----------|---|-------------|
| 3122898  | M1009 2HP/1-1/2"HP 110/220V Prewired Vertical/Horizontal Mill | \$5,374.57: |

### Shop Fox® Vertical Mill with Power Feed

The 2 HP vertical mill is built rigid and heavy for close tolerance machining, in the small shop or light industrial setting. The 3 axis spindle head and 3 axis rotating table allows virtually every type of cut possible with a vertical mill. Other features include 22" maximum spindle/column distance, R-8 spindle taper, 9 spindle speeds, coolant pump/nozzle, work light, and longitudinal power feed. Constructed with extra-thick castings, powder-coated paint and precision ground table and ways.



| Part No. | Description  | Price /Ea   |
|----------|--|-------------|
| 3122897  | M1008 2HP 100/220V Prewired Single Phase Vertical Mill | \$4,436.25: |

### Shop Fox® 14" x 40" Gear Head Lathe

If your job shop is in need of a quality lathe, then the Model M1020 is your answer. Powered by a 3HP motor, featuring 12-speeds a generous 14" swing, 40" distance between centers and 62 different standard metric threading options. Remove the gap and give yourself an extra 6" in diameter. 3" jaw and 4" jaw chucks, coolant pump, halogen lamp plus a whole lot of accessories are standard.

#### Specifications:

- Motor: 3 HP, 220V, single-phase, 60 HZ, 1725 RPM
- Swing over bed: 14"
- Swing over gap: 20"
- Swing over saddle: 8 1/2"
- Distance between centers: 40"
- Bed width: 10 1/4"
- Spindle Bore: 1 1/2"
- Spindle Nose: D1-4 Cam lock
- Spindle Nose Taper: MT #5
- Cross Slide Travel: 7"
- Compound Travel: 3 1/2"
- Tailstock Barrel Taper: MT #3
- Tailstock Barrel Travel: 4 5/8"
- Range of speeds: (12 speeds) 40-1800 RPM
- Number of longitudinal and cross feeds: 40
- Range of longitudinal feeds (in./rev.): 0.0012" - 0.0294"
- Range of cross feeds (in./rev.): 0.0006" - 0.0147"
- Number of inch threads: 40
- Range of inch threads: 4-112 TPI
- Number of metric threads: 22
- Range of metric threads: 0.45-7.5
- Leadscrew: 8 TPI
- Feed rod diameter: 3/4"
- Height: 45"
- Length: 80"
- Width: 29 1/2"
- Approximate shipping weight: 2738 lbs.

#### Standard Equipment

- 6" 3-jaw chuck with piece jaw
- 8" 4-jaw chuck
- 12" faceplate
- Steady rest/follow rest
- 4-way turret tool post
- MT #3 dead center
- Coolant system with back splash
- Threading dial
- Halogen lamp
- One piece cast iron stand

#### Features

- Foot brake
- Hardened and ground gears in headstock
- Induction hardened bedways
- Job button and emergency stop
- Micrometer carriage stop
- Inch/metric dials



| Part No. | Description   | Price /Ea   |
|----------|---|-------------|
| 3122921  | M1020 14"x40"x14" Swing 12Speed 3HP SinglePhase GearHeadLathe | \$8,723.75: |

## BAND SAW BLADES

### HOW TO SELECT YOUR BAND SAW BLADES

The following information needs to be specified when a band saw blade is ordered:

| For example: | Product Name  | Length x Width x Thickness                     | Teeth Per Inch |
|--------------|---------------|--|----------------|
|              | CONTESTOR GT® | 16' x 1-1/4" x .042"<br>4860mm x 34mm x 1.07mm | 3/4 TPI        |

These steps are a guide to selecting the appropriate product for each application:

#### Step #1 Analyze the sawing application

**Machine:** For most situations, knowing the blade dimensions (length x width x thickness) is all that is necessary.

**Material:** Find out the following characteristics of the material to be cut.

- Grade • Hardness (if heat treated or hardened) • Shape • Size
- Is the material to be stacked (bundled) or cut one at a time?

**Other Customer Needs:** The specifics of the application should be considered.

- Production or utility/general purpose sawing operation?
- What is more important, fast cutting or tool life?
- Is material finish important?

#### Step #2 Determine which product to use

- Find the material to be cut in the top row.
- Read down the chart to find which blade is recommended.
- For further assistance, contact LENOX® Technical Support Department at 800-642-0010.

#### Step #3 Determine the proper number of teeth per inch (TPI)

Use the tooth selection chart

- If having difficulty choosing between two pitches, the finer of the two will generally give better performance.
- When compromise is necessary, choose the correct TPI first.

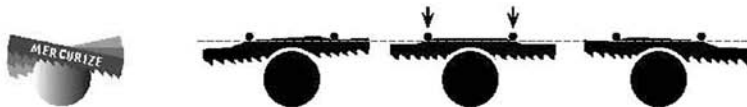
A general rule for bundles: Determine the correct TPI for one piece, and choose one pitch coarser for the bundle.

#### Step #4 Order LENOX® Sawing Fluids and Lubricants

...for better performance and longer life on any blade.

#### Step #5 Determine the need for MERCURIZATION

This patented, enhanced mechanical design promotes more efficient tooth penetration and chip formation, easily cutting through the work hardened zone. The MERCURIZE symbol denotes any product that can be *MERCURIZED!*™ Consult your LENOX® Technical Representative to determine if MERCURIZATION will benefit your operation.



#### Step #6 Install the blade and fluid

#### Step #7 Break in the blade properly

For break-in recommendations, refer to *SAWCALC*® or contact LENOX® Technical Support 800-642-0010.

#### Step #8 Run the blade at the correct speed and feed rate

Refer to the Bi-metal and Carbide Speed Charts. For additional speed and feed recommendations, refer to *SAWCALC*® or contact LENOX® Technical Support 800-642-0010.



## BI-METAL BAND SAW BLADES

### BI-METAL TOOTH SELECTION

1. Determine size and shape of material to be cut.
2. Identify chart to be used (square solid, round solid, or tubing/structurals).
3. Read teeth per inch next to material size.

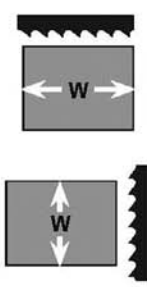
#### Square/ Rectangle Solid



Locate width of cut (W)

| INCHES | TPI     | MM   |
|--------|---------|------|
| .1     | 14/18   | 5    |
| .2     | 10/14   | 10   |
| .3     | 8/12    | 15   |
| .4     | 6/10    | 20   |
| .5     | 6/8 5/8 | 25   |
| .6     |         | 30   |
| .7     |         | 35   |
| .8     |         | 40   |
| .9     |         | 45   |
| 1      |         | 50   |
| 1.5    | 4/6     | 75   |
| 2      |         | 100  |
| 3      | 3/4     | 150  |
| 4      |         | 200  |
| 5      | 2/3     | 250  |
| 6      |         | 300  |
| 7      |         | 350  |
| 8      |         | 400  |
| 9      |         | 450  |
| 10     | 1.5/2.0 | 500  |
| 11     | 1.4/2.0 | 600  |
| 12     |         | 700  |
| 13     |         | 800  |
| 14     |         | 900  |
| 15     |         | 1000 |
| 16     |         | 1100 |
| 17     |         | 1200 |

Width of cut (W)



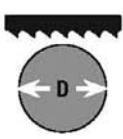
#### Round Solid



Locate diameter (D)

| INCHES | TPI     | MM   |
|--------|---------|------|
| .1     | 14/18   | 5    |
| .2     | 10/14   | 10   |
| .3     | 8/12    | 15   |
| .4     | 6/10    | 20   |
| .5     | 6/8 5/8 | 25   |
| .6     |         | 30   |
| .7     |         | 35   |
| .8     |         | 40   |
| .9     |         | 45   |
| 1      |         | 50   |
| 1.5    | 4/6     | 75   |
| 2      |         | 100  |
| 3      | 3/4     | 150  |
| 4      |         | 200  |
| 5      | 2/3     | 250  |
| 6      |         | 300  |
| 7      |         | 350  |
| 8      |         | 400  |
| 9      |         | 450  |
| 10     | 1.5/2.0 | 500  |
| 11     | 1.4/2.0 | 600  |
| 12     |         | 700  |
| 13     |         | 800  |
| 14     |         | 900  |
| 15     |         | 1000 |
| 16     |         | 1100 |
| 17     |         | 1200 |

Diameter (D)



#### Tubing/Pipe/ Structurals

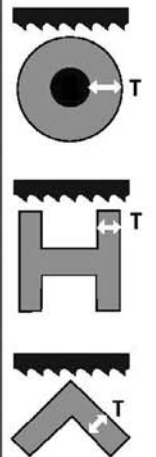


Locate wall thickness (T)

| INCHES | TPI     | MM |
|--------|---------|----|
| .05    | 14/18   | 1  |
| .10    | 10/14   | 2  |
| .15    | 8/12    | 3  |
| .20    | 6/10    | 4  |
| .25    | 6/8 5/8 | 5  |
| .30    |         | 6  |
| .35    |         | 7  |
| .40    | 4/6     | 8  |
| .45    |         | 9  |
| .50    |         | 10 |
| .60    |         | 15 |
| .70    |         | 20 |
| .80    | 3/4     | 25 |
| .90    |         | 30 |
| 1      |         | 35 |
| 1.5    | 2/3     | 40 |
| 2      |         | 50 |

TPI

Wall thickness (T)

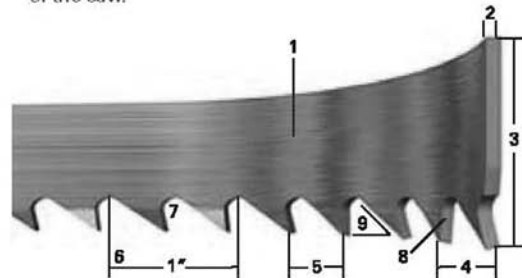




## BLADE TERMINOLOGY

1. **Blade Back**—The body of the blade not including tooth portion.
2. **Thickness**—The dimension from side to side on the blade.
3. **Width**—The nominal dimension of a saw blade as measured from the tip of the tooth to the back of the band.
4. **Set**—The bending of teeth to right or left to allow clearance of the back of the blade through the cut.  
**Kerf**—Amount of material removed by the cut of the blade.
5. **Tooth Pitch**—The distance from the tip of one tooth to the tip of the next tooth.
6. **TPI**—The number of teeth per inch as measured from gullet to gullet.
7. **Gullet**—The curved area at the base of the tooth. The tooth tip to the bottom of the gullet is the gullet depth.

8. **Tooth Face**—The surface of the tooth on which the chip is formed.
9. **Tooth Rake Angle**—The angle of the tooth face measured with respect to a line perpendicular to the cutting direction of the saw.



## TOOTH FORMS & TOOTH SET



- VARIABLE**
- Standard tooth forms
  - Variable tooth spacing
  - Varying gullet depth



- VARIABLE POSITIVE**
- Smooth cutting
  - Reduces noise
  - Cuts efficiently
  - Enhances blade life



- SKIP**
- Wide gullets
  - Evenly spaced teeth
  - Good cutting performance on non-metallic applications (wood, plastic, cork and composition material)



- STANDARD**
- Deep gullets
  - Evenly spaced teeth
  - General purpose design for wide range of applications



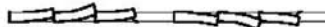
- HOOK**
- Wide gullets
  - Evenly spaced teeth
  - Positive rake angle
  - Good cutting performance on metals which form discontinuous chips (cast iron) and non-metallic applications (wood, plastic, cork and composition material)



- LENOX® SET**
- Five tooth or seven tooth sequence—right, left, right, left, straight
  - Uniform set angle



- VARI-RAKER**
- Multi-tooth sequence depending on tooth pitch
  - Varying set angles
  - 14/18 *VARI-TOOTH*® has random wavy set



- WAVY**
- Groups of teeth set to each side
  - Teeth have varying amounts of sets in a controlled pattern



- RAKER**
- Three tooth sequence—left, right, straight
  - Uniform set angle



- ALTERNATE**
- Every tooth set in an alternating sequence
  - Wood cutting applications

## BAND SAW BLADES

### BLADE BREAK-IN

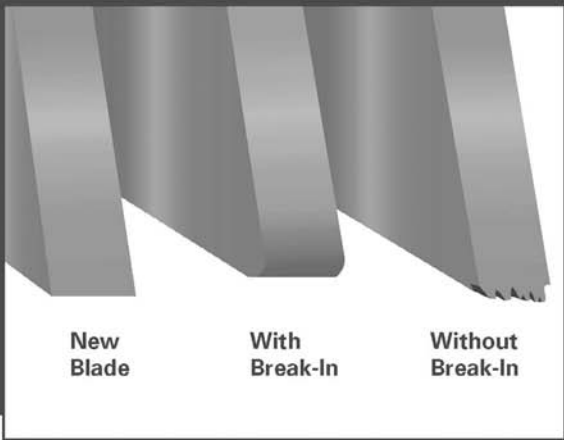
#### Getting Long Life from a New Band Saw Blade

##### What is Blade Break-In?

A new band saw blade has razor sharp tooth tips as a result of the forming of the teeth. In order to withstand the cutting pressures used in band sawing, the tooth tip should be honed to form a micro-fine radius. Cutting with high pressure without performing this honing will cause microscopic damage to the tips of the teeth, resulting in loss of blade life.

##### Why Break-In a Band Saw Blade?

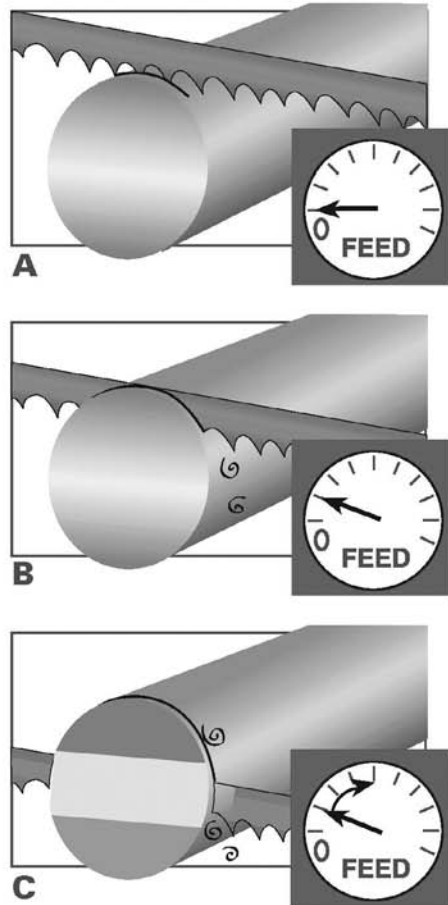
Completing a proper break-in on a new band saw blade will dramatically increase its blade life.



#### How To Break In a Blade

1. Use the appropriate band speed for the material to be cut (see bi-metal band speed chart on pages 20 and 21).
2. Reduce the feed rate/force control on the saw to achieve a cutting rate approximately 20% to 50% of the normal cutting rate. Mild steels require a larger reduction in cutting rate than more difficult to machine materials.
3. Begin the first cut at the reduced rate (A), making sure that the teeth are forming a chip. Once the blade fully enters the workpiece, the feed rate can be slightly increased (B).
4. Make gradual increases in feed rate/force over several cuts until the normal cutting rate is established (cutting a total of 60 to 118 inches<sup>2</sup> / 150 to 300 cm<sup>2</sup>) (C).

**Note:** During break-in, slight adjustments to band speed may be made in the event of excessive noise or vibration. Once the blade is broken in, the recommended band speed should be used.



## POSSIBLE CAUSES OF BLADE FAILURE

| Observation  | Band Speed | Band Wheels | Break-In Proced. | Chip Brush | Sawing Fluid | Feeding Rate | Side Guides | Backup Guides | Preload Condition | Band Tension | Band Tracking | Tooth Pitch |
|--|------------|-------------|------------------|------------|--------------|--------------|-------------|---------------|-------------------|--------------|---------------|-------------|
| #1 Heavy even wear on tips and corners of teeth              | •          |             | •                |            | •            | •            |             |               |                   |              |               |             |
| #2 Wear on both sides of teeth                               |            |             |                  |            |              |              | •           | •             |                   |              |               |             |
| #3 Wear on one side of teeth                                 |            | •           |                  |            |              |              | •           |               |                   |              |               |             |
| #4 Chipped or broken teeth                                   |            |             | •                |            |              | •            |             |               |                   |              |               | •           |
| #5 Discolored tips of teeth due to excessive frictional heat | •          |             |                  |            | •            | •            |             |               |                   |              |               |             |
| #6 Tooth strippage   | •          |             | •                | •          | •            | •            |             |               |                   |              |               | •           |
| #7 Chips welded to tooth tips                                | •          |             |                  | •          | •            | •            |             |               |                   |              |               |             |
| #8 Gullets loading up with material                          |            |             |                  | •          | •            | •            |             |               |                   |              |               | •           |
| #9 Heavy wear on both sides of band                          |            |             |                  |            | •            |              | •           |               |                   |              |               |             |
| #10 Uneven wear or scoring on sides of the band              |            |             |                  |            |              |              | •           |               |                   |              |               |             |
| #11 Body breakage or cracks from gullets                     |            |             |                  |            |              |              | •           |               | •                 | •            |               |             |
| #12 Body breakage—fracture traveling in angular direction    |            |             |                  |            |              |              | •           |               | •                 |              |               |             |
| #13 Body breakage or cracks from back edge                   |            |             |                  |            |              | •            |             | •             | •                 | •            |               |             |
| #14 Heavy wear and/or swaging on back edge                   |            |             |                  |            |              | •            |             | •             | •                 |              | •             |             |
| #15 Butt weld breakage                                       |            |             |                  |            |              | •            | •           | •             | •                 | •            | •             |             |
| #16 Used band is "long" on the tooth edge                    |            | •           |                  |            |              | •            | •           |               | •                 |              | •             |             |
| #17 Used band is "short" on the tooth edge                   |            | •           |                  |            |              | •            | •           |               |                   |              |               |             |
| #18 Band is twisted into figure "8" configuration            |            | •           |                  |            |              | •            | •           | •             | •                 | •            | •             |             |
| #19 Broken band shows a twist in band length                 |            | •           |                  |            |              | •            | •           | •             | •                 | •            | •             |             |
| #20 Heavy wear in only the smallest gullets                  | •          |             |                  |            |              | •            |             |               |                   |              |               | •           |

## Band Saw Blades

### Weld-to-Length Bandsaw Blades Length

Band saw blades vary by machine model. Blades are available custom welded to fit specific machines or in coil form for distributor or user welding. Blade length should be specified in feet (e.g. 12' 6").

#### Width

Most machines accept one width only. The following should be considered for machines that can accommodate multiple widths.

- Wider blades allow more tension and feed pressure for faster and straighter cuts in production applications.
- In contour sawing on vertical machines, the smaller the radius in a given pattern, the narrower the blade required.

#### Tooth Pitch

Pitch determines the number of teeth per inch for a given cross section to be cut. More teeth per inch are needed for thin materials and less teeth per inch for thicker materials. Ideally, 6-12 feet should be in contact with the work in metal cutting, while more teeth may be required for harder materials or a smoother finish. There should never be fewer than three teeth in contact for bi-metal and six teeth for carbon.

- Standard Pitch-A single, constant size and shape throughout the length of the coil or blade.
- Variable Pitch-Tooth and gullet size vary in progressive intervals through the length of the blade or coil. Varying tooth size reduces vibration for quieter, more efficient cutting.

#### Tooth Form

- Straight - A single, constant size and shape throughout the length of the coil or blade.
- Positive Rake - Teeth "lean" into the work via a 5 to 10 degree rake angle, for more aggressive cutting in moderate to difficult machine materials

#### Tooth Type

- Standard - Available in carbon and bi-metal, it features a zero degree rake angle and constant tooth pitch for general purpose sawing in a wide range of materials.
- Variable Pitch - Available in bi-metal only. Standard variable pitch features a zero degree rake angle with varying tooth and gullet sizes for smooth and more efficient cutting in both solid and structural materials.
- Variable pitch/Positive Rake - Available in bi-metal only. These blades offer a 10 degree positive rake angle for faster, more efficient cutting in thicker, harder to machine materials.
- Skip - Available in Carbon only. Wide, flat shallow gullets for efficient chip removal in large sections of non-ferrous or non-metallic materials.
- Hook - Available in carbon or bi-metal. 10 percent positive rake angle and rounded gullets allow for faster, more aggressive with less feed pressure than straight face blades in both hard to cut metals and wood.

#### Tooth Set

The teeth of most saw blades are offset to each side so that the cut or "kerf" is wider than the blade body. The set prevents the back of the blade from binding in the work.

- Raker - Available in both carbon and bi-metal and used for most standard, skip, and hook form specifications. Teeth are set in a reoccurring pattern - right, left, straight - with the straight tooth clearing or "raking" the chips from the work.
- Wavy - Available in finer carbon and bi-metal tooth specifications. Teeth are set in a wave pattern reducing impact on individual teeth and increasing contact area with the work. The wave pattern allows better finish and reduces the risk of tooth damage in thin walled materials.
- Every Tooth Set - Used primarily in carbon specialty furniture blades, all teeth are set alternately to the left and right. Each tooth cuts resulting in faster, smoother cutting in wood and select non-ferrous alloy and non-metallic applications.
- Modified Raker - The primary set pattern used in variable pitch blades. Unlike the standard raker design, where every third tooth "rakes", Modified raker features a straight or "raker" tooth only after 4 or 6 set teeth.

## Band Saw Blade FYI

#### Crooked Cut

- Dull blade
- Improper break-in
- Guide arms too far apart or out of alignment
- Damaged roller or carbide guides
- Feed rate too heavy or blade speed too slow
- Tooth pitch too fine
- Band tension too low
- Vise clamp out of square

#### Pre-mature Dulling of Teeth

- Improper break-in
- Check coolant concentration and flow
- Check chip brush
- Check feed rates and blade speed
- Select proper tooth pitch

#### Rough Cut

- Band speed too slow and feed rate too high
- Improper break-in
- Dull or damaged teeth
- Check chip brush
- Poor butt weld

#### Stripping Teeth

- Too many teeth or too few teeth in the cut
- Parts not held securely, use a third clamp or weld ends
- Feed rate too high or speed too slow
- Poor butt weld
- Chip brush not working, causing chips to overload bullets
- Check coolant concentration

#### Band Breakage

- Worn Guides
- Guide arms set too far apart
- Diameter of wheels too small, use thinner bands
- Band tension too high
- Feed rate too high
- Poor butt weld

## Band Saw Blades-Required Ordering Information

There are many variables to consider when ordering band saw blades. Please have the following information ready so we can provide you with pricing and delivery in the most timely fashion possible.

## BANDSAW BLADE WELDING

- Over \$1 million in welding equipment and coil stock inventory

- We can custom-weld any length to suit your application

- Widths from 1/8" to 2-1/4" (Large widths available upon request)

- Large selection of pre-welded blades in stock for common cutting applications

- Our technicians are factory trained and can assist you with questions

- We can stock your blades at your local servicing store





# BAND SAW BLADES

## Band Saw Blades Cont.

# FASTENAL

Standard stocking items already welded to length



Band Saw Blades

| Part No. | Length      | Width  | Thickness | Teeth /In. | Price /Ea |
|----------|-------------|--------|-----------|------------|-----------|
| 3114653  | 11' 6"      | 1"     | .035"     | 8-12       | \$54.04   |
| 3114654  | 11' 6"      | 1-1/4" | .042"     | 5-8        | 66.47     |
| 3114660  | 12'         | 1-1/4" | .042"     | 5-8        | 67.20     |
| 3114672  | 12' 10"     | 3/4"   | .035"     | 10-14      | 52.21     |
| 3114717  | 15' 8"      | 1-1/4" | .042"     | 5-8        | 84.97     |
| 0309804  | 12' 6"      | 1"     | .035"     | 10-14      | 66.77     |
| 0309805  | 12' 6"      | 3/4"   | .035"     | 8-12       | 58.80     |
| 0309806  | 12' 10"     | 1"     | .035"     | 10-14      | 68.17     |
| 0309807  | 19' 6"      | 1"     | .035"     | 8-12       | 96.10     |
| 0309809  | 11' 6"      | 1"     | .035"     | 3-4        | 62.58     |
| 0309835  | 19' 6"      | 1"     | .035"     | 2-3        | 96.45     |
| 0309836  | 10'         | 3/4"   | .035"     | 5-8        | 49.92     |
| 0309837  | 10'         | 3/4"   | .035"     | 10-14      | 49.92     |
| 0309852  | 9' 6"       | 1/2"   | .035"     | 10-14      | 43.25     |
| 0309854  | 21' 6"      | 3/4"   | .035"     | 5-8        | 90.77     |
| 0309858  | 9' 6"       | 3/4"   | .035"     | 10-14      | 48.14     |
| 0309887  | 17'         | 1-1/4" | .042"     | 4-6        | 102.75    |
| 0309895  | 17'         | 1-1/4" | .042"     | 3-4        | 102.75    |
| 0309901  | 10'         | 1"     | .035"     | 8-12       | 56.30     |
| 0309902  | 15' 6"      | 1-1/4" | .042"     | 5-8        | 95.20     |
| 0309923  | 11' 6"      | 3/4"   | .035"     | 6-10       | 55.25     |
| 0309924  | 11' 6"      | 3/4"   | .035"     | 8-12       | 55.25     |
| 0309932  | 14' 6"      | 1"     | .035"     | 6-10       | 75.15     |
| 0309933  | 5' 4-1/2"   | 1/2"   | .025"     | 10-14      | 29.66     |
| 0309934  | 5' 4-1/2"   | 1/2"   | .025"     | 14         | 29.66     |
| 0309935  | 7' 9"       | 1/2"   | .025"     | 14         | 38.15     |
| 0309936  | 7' 9"       | 3/4"   | .035"     | 6-10       | 42.82     |
| 0309937  | 7' 9"       | 3/4"   | .035"     | 10-14      | 43.83     |
| 0309938  | 10'         | 1"     | .035"     | 4-6        | 56.65     |
| 0309939  | 10'         | 1"     | .035"     | 5-8        | 56.65     |
| 0309940  | 10'         | 1"     | .035"     | 10-14      | 56.65     |
| 0309941  | 10' 10-1/2" | 1"     | .035"     | 10-14      | 60.49     |
| 0309942  | 11'         | 1"     | .035"     | 4-6        | 60.84     |
| 0309943  | 11'         | 1"     | .035"     | 5-8        | 60.84     |
| 0309944  | 11'         | 1"     | .035"     | 6-10       | 60.84     |
| 0309945  | 11'         | 1"     | .035"     | 8-12       | 60.84     |
| 0309946  | 11'         | 1"     | .035"     | 10-14      | 60.84     |
| 0309947  | 11' 6"      | 3/4"   | .035"     | 5-8        | 55.25     |
| 0309948  | 11' 6"      | 3/4"   | .035"     | 10-14      | 55.25     |
| 0309949  | 11' 6"      | 1"     | .035"     | 4-6        | 62.58     |
| 0309950  | 11' 6"      | 1"     | .035"     | 5-8        | 62.58     |
| 0309951  | 11' 6"      | 1"     | .035"     | 6-10       | 62.58     |
| 0309952  | 11' 6"      | 1"     | .035"     | 10-14      | 62.58     |
| 0309953  | 11' 6"      | 1-1/4" | .042"     | 4-6        | 75.05     |
| 0309954  | 12'         | 1"     | .035"     | 4-6        | 64.68     |
| 0309955  | 12'         | 1"     | .035"     | 5-8        | 64.68     |
| 0309956  | 12'         | 1"     | .035"     | 6-10       | 64.68     |
| 0309957  | 12'         | 1-1/4" | .042"     | 3-4        | 77.57     |
| 0309958  | 12' 6"      | 1"     | .035"     | 6-10       | 66.77     |
| 0309959  | 12' 10"     | 1"     | .035"     | 4-6        | 68.87     |
| 0309960  | 13' 3"      | 1"     | .035"     | 4-6        | 70.96     |
| 0309961  | 13' 3"      | 1"     | .035"     | 5-8        | 70.96     |
| 0309962  | 13' 3"      | 1"     | .035"     | 6-10       | 70.96     |
| 0309963  | 13' 5"      | 1-1/4" | .042"     | 3-4        | 85.13     |
| 0309964  | 13' 6"      | 1"     | .035"     | 3-4        | 70.96     |
| 0309965  | 13' 6"      | 1"     | .035"     | 4-6        | 70.96     |
| 0309966  | 13' 6"      | 1"     | .035"     | 5-8        | 70.96     |
| 0309967  | 13' 6"      | 1"     | .035"     | 6-10       | 70.96     |

| Part No. | Length      | Width  | Thickness | Teeth /In. | Price /Ea |
|----------|-------------|--------|-----------|------------|-----------|
| 0309968  | 13' 6"      | 1"     | .035"     | 8-12       | \$70.96   |
| 0309969  | 13' 6"      | 1-1/4" | .042"     | 3-4        | 85.13     |
| 0309970  | 13' 6"      | 1-1/4" | .042"     | 4-6        | 85.13     |
| 0309971  | 14' 6"      | 1"     | .035"     | 4-6        | 75.15     |
| 0309972  | 14' 6"      | 1"     | .035"     | 5-8        | 78.38     |
| 0309973  | 14' 6"      | 1-1/4" | .042"     | 4-6        | 90.16     |
| 0309974  | 14' 6"      | 1-1/4" | .042"     | 5-8        | 90.16     |
| 0309975  | 15'         | 1-1/4" | .042"     | 3-4        | 92.68     |
| 0309976  | 15'         | 1-1/4" | .042"     | 4-6        | 92.68     |
| 0309981  | 6' 3"       | 3/4"   | .035"     | 6-10       | 37.49     |
| 0309984  | 11' 6"      | 1-1/4" | .042"     | 3-4        | 75.05     |
| 0309985  | 14' 6"      | 1-1/4" | .042"     | 3-4        | 90.16     |
| 0309986  | 11' 6"      | 1-1/4" | .042"     | 2-3        | 75.05     |
| 0309987  | 14' 6"      | 1-1/4" | .042"     | 2-3        | 92.00     |
| 0309988  | 15' 4"      | 1-1/4" | .042"     | 3-4        | 96.29     |
| 0309989  | 15' 4"      | 1-1/4" | .042"     | 2-3        | 96.29     |
| 0309990  | 15' 4"      | 1-1/4" | .042"     | 4-6        | 96.29     |
| 0309996  | 12'         | 1-1/4" | .042"     | 4-6        | 79.16     |
| 0309997  | 15'         | 1-1/4" | .042"     | 5-8        | 94.57     |
| 0329610  | 10'         | 1"     | .035"     | 6-10       | 57.45     |
| 0329620  | 10' 10"     | 3/4"   | .035"     | 10-14      | 55.37     |
| 0329621  | 15' 3"      | 1"     | .035"     | 10-14      | 82.30     |
| 3114589  | 7' 9"       | 3/4"   | .035"     | 5-8        | 42.78     |
| 3114590  | 7' 7 1/2"   | 3/4"   | .035"     | 6/10       | 33.77     |
| 3114591  | 7' 9"       | 3/4"   | .035"     | 8-12       | 42.78     |
| 3114592  | 8' 2-1/2"   | 3/4"   | .035"     | 8-12       | 44.44     |
| 3114593  | 8' 2-1/2"   | 3/4"   | .035"     | 10-14      | 44.44     |
| 3114594  | 8' 5"       | 3/4"   | .035"     | 6-10       | 45.20     |
| 3114595  | 8' 5"       | 3/4"   | .035"     | 8-12       | 45.20     |
| 3114596  | 8' 5"       | 3/4"   | .035"     | 10-14      | 45.20     |
| 3114597  | 8' 10"      | 1"     | .035"     | 6-10       | 52.46     |
| 3114598  | 8' 10-1/2"  | 3/4"   | .035"     | 10-14      | 46.86     |
| 3114599  | 8' 11"      | 3/4"   | .035"     | 8-12       | 47.01     |
| 3114600  | 8' 11"      | 3/4"   | .035"     | 10-14      | 47.01     |
| 3114601  | 8' 11"      | 3/4"   | .035"     | 10-14      | 47.16     |
| 3114602  | 9'          | 3/4"   | .035"     | 6-10       | 47.31     |
| 3114603  | 9'          | 3/4"   | .035"     | 8-12       | 47.31     |
| 3114604  | 9'          | 3/4"   | .035"     | 10-14      | 47.31     |
| 3114605  | 9' 6"       | 3/4"   | .035"     | 6-10       | 49.13     |
| 3114606  | 9' 6"       | 3/4"   | .035"     | 8-12       | 49.13     |
| 3114608  | 9' 7"       | 3/4"   | .035"     | 8-12       | 49.43     |
| 3114609  | 9' 7"       | 3/4"   | .035"     | 10-14      | 49.43     |
| 3114610  | 9' 7-1/2"   | 3/4"   | .035"     | 6-10       | 49.58     |
| 3114611  | 9' 7-1/2"   | 3/4"   | .035"     | 8-12       | 49.58     |
| 3114612  | 9' 7-1/2"   | 3/4"   | .035"     | 10-14      | 49.58     |
| 3114613  | 9' 7-1/2"   | 1"     | .035"     | 8-12       | 55.84     |
| 3114614  | 9' 7-1/2"   | 1"     | .035"     | 10-14      | 55.84     |
| 3114615  | 9' 8"       | 3/4"   | .035"     | 10-14      | 49.73     |
| 3114616  | 9' 9"       | 3/4"   | .035"     | 6-10       | 50.03     |
| 3114617  | 9' 9"       | 3/4"   | .035"     | 8-12       | 50.03     |
| 3114618  | 9' 9"       | 3/4"   | .035"     | 10-14      | 50.03     |
| 3114619  | 9' 11-1/2"  | 1"     | .035"     | 5-8        | 57.27     |
| 3114620  | 9' 11-1/2"  | 1"     | .035"     | 6-10       | 58.46     |
| 3114621  | 9' 11-1/2"  | 1"     | .035"     | 8-12       | 58.46     |
| 3114623  | 10'         | 3/4"   | .035"     | 6-10       | 52.00     |
| 3114624  | 10'         | 3/4"   | .035"     | 8-12       | 52.00     |
| 3114628  | 10' 5"      | 3/4"   | .035"     | 6-10       | 53.54     |
| 3114629  | 10' 5"      | 3/4"   | .035"     | 8-12       | 53.54     |
| 3114630  | 10' 5"      | 3/4"   | .035"     | 10-14      | 53.55     |
| 3114631  | 10' 10"     | 1"     | .035"     | 6-10       | 62.29     |
| 3114632  | 10' 10"     | 1"     | .035"     | 8-12       | 62.29     |
| 3114633  | 10' 10-1/2" | 3/4"   | .035"     | 5-8        | 55.24     |
| 3114634  | 10' 10-1/2" | 3/4"   | .035"     | 6-10       | 55.24     |
| 3114635  | 10' 10-1/2" | 3/4"   | .035"     | 8-12       | 55.24     |
| 3114636  | 10' 10-1/2" | 3/4"   | .035"     | 10-14      | 55.24     |
| 3114637  | 10' 10-1/2" | 1"     | .035"     | 5-8        | 62.47     |
| 3114638  | 10' 10-1/2" | 1"     | .035"     | 6-10       | 62.84     |
| 3114639  | 10' 10-1/2" | 1"     | .035"     | 8-12       | 62.84     |
| 3114641  | 10' 11"     | 3/4"   | .035"     | 6-10       | 56.01     |
| 3114642  | 10' 11"     | 3/4"   | .035"     | 10-14      | 56.01     |
| 3114643  | 11'         | 3/4"   | .035"     | 6-10       | 56.33     |
| 3114644  | 11'         | 3/4"   | .035"     | 8-12       | 56.33     |
| 3114645  | 11'         | 3/4"   | .035"     | 10-14      | 56.33     |
| 3114646  | 11' 5"      | 3/4"   | .035"     | 5-8        | 57.89     |
| 3114647  | 11' 5"      | 3/4"   | .035"     | 6-10       | 57.89     |
| 3114648  | 11' 5"      | 3/4"   | .035"     | 8-12       | 57.89     |
| 3114649  | 11' 5"      | 3/4"   | .035"     | 10-14      | 57.89     |
| 3114650  | 11' 5"      | 1"     | .035"     | 6-10       | 65.91     |
| 3114651  | 11' 5"      | 1"     | .035"     | 8-12       | 65.91     |
| 3114652  | 11' 5"      | 1"     | .035"     | 10-14      | 65.91     |
| 3114655  | 11' 6"      | 1-1/4" | .042"     | 6-10       | 79.49     |
| 3114656  | 11' 6"      | 1-1/4" | .042"     | 8-12       | 79.49     |

| Part No. | Length     | Width  | Thickness | Teeth /In. | Price /Ea |
|----------|------------|--------|-----------|------------|-----------|
| 3114657  | 11' 11"    | 1"     | .035"     | 10-14      | \$68.13   |
| 3114658  | 12'        | 1"     | .035"     | 8-12       | 68.50     |
| 3114659  | 12'        | 1"     | .035"     | 10-14      | 68.50     |
| 3114661  | 12' 1"     | 3/4"   | .035"     | 6-10       | 60.70     |
| 3114662  | 12' 1"     | 3/4"   | .035"     | 10-14      | 60.70     |
| 3114663  | 12' 3-3/4" | 1"     | .035"     | 6-10       | 69.88     |
| 3114664  | 12' 3-3/4" | 1"     | .035"     | 10-14      | 69.88     |
| 3114665  | 12' 4"     | 1"     | .035"     | 5-8        | 69.98     |
| 3114666  | 12' 6"     | 3/4"   | .035"     | 10-14      | 62.27     |
| 3114667  | 12' 6"     | 1"     | .035"     | 5-8        | 70.71     |
| 3114668  | 12' 6"     | 1"     | .035"     | 8-12       | 70.71     |
| 3114670  | 12' 6"     | 1-1/4" | .042"     | 6-10       | 84.82     |
| 3114671  | 12' 6"     | 1-1/4" | .042"     | 8-12       | 84.82     |
| 3114673  | 12' 10"    | 1"     | .035"     | 5-8        | 72.19     |
| 3114674  | 12' 10"    | 1"     | .035"     | 6-10       | 72.19     |
| 3114675  | 12' 10"    | 1"     | .035"     | 8-12       | 72.19     |
| 3114676  | 12.83'     | 1"     | .035"     | 10/14      | 57.35     |
| 3114677  | 13'        | 1"     | .035"     | 6-10       | 72.93     |
| 3114678  | 13' 2"     | 1"     | .035"     | 6-10       | 73.67     |
| 3114679  | 13' 3"     | 1"     | .035"     | 8-12       | 74.04     |
| 3114680  | 13' 3"     | 1"     | .035"     | 10-14      | 74.04     |
| 3114681  | 13' 4"     | 1"     | .035"     | 8-12       | 74.41     |
| 3114682  | 13' 4"     | 1"     | .035"     | 10-14      | 74.41     |
| 3114683  | 13' 6"     | 1-1/4" | .042"     | 5-8        | 89.29     |
| 3114684  | 13' 6"     | 1-1/4" | .042"     | 6-10       | 90.34     |
| 3114685  | 13' 6"     | 1-1/4" | .042"     | 8-12       | 90.34     |
| 3114686  | 13' 11"    | 1"     | .035"     | 6-10       | 77.16     |
| 3114687  | 13' 11"    | 1"     | .035"     | 8-12       | 77.16     |
| 3114688  | 13' 11"    | 1"     | .035"     | 10-14      | 77.16     |
| 3114689  | 14'        | 1-1/4" | .042"     | 8-12       | 93.02     |
| 3114690  | 14' 3"     | 1-1/4" | .042"     | 5-8        | 93.44     |
| 3114691  | 14' 3"     | 1-1/4" | .042"     | 6-10       | 94.35     |
| 3114692  | 14' 4"     | 1"     | .035"     | 6-10       | 79.02     |
| 3114694  | 14' 6"     | 3/4"   | .035"     | 6-10       | 69.94     |
| 3114695  | 14' 6"     | 3/4"   | .035"     | 8-12       | 69.94     |
| 3114696  | 14' 6"     | 3/4"   | .035"     | 10-14      | 69.94     |
| 3114697  | 14' 6"     | 1"     | .035"     | 8-12       | 79.76     |
| 3114698  | 14' 6"     | 1"     | .035"     | 10-14      | 79.76     |
| 3114699  | 14' 6"     | 1-1/4" | .042"     | 6-10       | 95.69     |
| 3114700  | 14' 6"     | 1-1/4" | .042"     | 8-12       | 95.69     |
| 3114701  | 14' 8"     | 3/4"   | .035"     | 5-8        | 70.57     |
| 3114702  | 14' 8"     | 3/4"   | .035"     | 6-10       | 70.57     |
| 3114703  | 14' 8"     | 3/4"   | .035"     | 8-12       | 70.57     |
| 3114704  | 14' 8"     | 3/4"   | .035"     | 10-14      | 70.57     |
| 3114705  | 14' 8"     | 1"     | .035"     | 6-10       | 80.50     |
| 3114706  | 14' 8"     | 1"     | .035"     | 8-12       | 80.50     |
| 3114707  | 14' 8"     | 1"     | .035"     | 10-14      | 80.50     |
| 3114709  | 15'        | 1-1/4" | .042"     | 6-10       | 98.36     |
| 3114710  | 15'        | 1-1/4" | .042"     | 8-12       | 98.36     |
| 3114711  | 15' 6"     | 1"     | .035"     | 5-8        | 84.20     |
| 3114712  | 15' 6"     | 1"     | .035"     | 6-10       | 84.20     |
| 3114713  | 15' 6"     | 1"     | .035"     | 10-14      | 84.20     |
| 311      |            |        |           |            |           |

# BAND SAW BLADES

Band Saw Blades

## Band Saw Blades Cont.



- Multi-Purpose Blade
- 3/4" width through 2" width; wide range of tooth configurations from coarse to fine
- Applications: carbon steels, light alloy steels, stainless steels



| Part No. | Length      | Width | Thickness | Teeth /in. | Price /Ea |
|----------|-------------|-------|-----------|------------|-----------|
| 3114724  | 7' 9"       | 3/4"  | .035"     | 5-8        | \$53.67   |
| 3114725  | 7' 9"       | 3/4"  | .035"     | 6-10       | 53.67     |
| 3114726  | 7' 9"       | 3/4"  | .035"     | 8-12       | 53.67     |
| 3114727  | 7' 9"       | 3/4"  | .035"     | 10-14      | 53.67     |
| 3114728  | 8' 2-1/2"   | 3/4"  | .035"     | 8-12       | 55.94     |
| 3114729  | 8' 2-1/2"   | 3/4"  | .035"     | 10-14      | 55.94     |
| 3114730  | 8' 5"       | 3/4"  | .035"     | 6-10       | 56.98     |
| 3114731  | 8' 5"       | 3/4"  | .035"     | 8-12       | 56.99     |
| 3114732  | 8' 5"       | 3/4"  | .035"     | 10-14      | 56.99     |
| 3114733  | 8' 10"      | 1"    | .035"     | 6-10       | 66.95     |
| 3114734  | 8' 10-1/2"  | 3/4"  | .035"     | 10-14      | 59.05     |
| 3114735  | 8' 11"      | 3/4"  | .035"     | 8-12       | 59.46     |
| 3114736  | 8' 11"      | 3/4"  | .035"     | 10-14      | 59.46     |
| 3114737  | 8' 11-1/2"  | 3/4"  | .035"     | 10-14      | 59.67     |
| 3114738  | 9'          | 3/4"  | .035"     | 6-10       | 59.88     |
| 3114739  | 9'          | 3/4"  | .035"     | 8-12       | 59.92     |
| 3114740  | 9'          | 3/4"  | .035"     | 10-14      | 59.92     |
| 3114741  | 9' 6"       | 3/4"  | .035"     | 6-10       | 62.40     |
| 3114742  | 9' 6"       | 3/4"  | .035"     | 8-12       | 62.40     |
| 3114743  | 9' 6"       | 3/4"  | .035"     | 10-14      | 62.40     |
| 3114744  | 9' 7"       | 3/4"  | .035"     | 8-12       | 62.81     |
| 3114745  | 9' 7"       | 3/4"  | .035"     | 10-14      | 62.81     |
| 3114746  | 9' 7-1/2"   | 3/4"  | .035"     | 6-10       | 63.02     |
| 3114747  | 9' 7-1/2"   | 3/4"  | .035"     | 8-12       | 63.02     |
| 3114748  | 9' 7-1/2"   | 3/4"  | .035"     | 10-14      | 63.02     |
| 3114749  | 9' 7-1/2"   | 1"    | .035"     | 8-12       | 71.63     |
| 3114750  | 9' 7-1/2"   | 1"    | .035"     | 10-14      | 71.63     |
| 3114751  | 9' 8"       | 3/4"  | .035"     | 10-14      | 63.23     |
| 3114752  | 9' 9"       | 3/4"  | .035"     | 6-10       | 63.64     |
| 3114753  | 9' 9"       | 3/4"  | .035"     | 8-12       | 63.64     |
| 3114754  | 9' 9"       | 3/4"  | .035"     | 10-14      | 63.64     |
| 3114755  | 9' 11-1/2"  | 1"    | .035"     | 5-8        | 73.58     |
| 3114756  | 9' 11-1/2"  | 1"    | .035"     | 6-10       | 73.58     |
| 3114757  | 9' 11-1/2"  | 1"    | .035"     | 8-12       | 73.58     |
| 3114758  | 10'         | 3/4"  | .035"     | 5-8        | 64.88     |
| 3114759  | 10'         | 3/4"  | .035"     | 6-10       | 64.88     |
| 3114760  | 10'         | 3/4"  | .035"     | 8-12       | 64.88     |
| 3114761  | 10'         | 3/4"  | .035"     | 10-14      | 64.88     |
| 3114762  | 10'         | 1"    | .035"     | 5-8        | 73.82     |
| 3114763  | 10'         | 1"    | .035"     | 6-10       | 73.82     |
| 3114764  | 10'         | 1"    | .035"     | 8-12       | 73.82     |
| 3114765  | 10'         | 1"    | .035"     | 10-14      | 73.82     |
| 3114766  | 10' 5"      | 3/4"  | .035"     | 6-10       | 66.94     |
| 3114767  | 10' 5"      | 3/4"  | .035"     | 8-12       | 66.94     |
| 3114768  | 10' 5"      | 3/4"  | .035"     | 10-14      | 66.94     |
| 3114769  | 10' 10"     | 1"    | .035"     | 6-10       | 78.70     |
| 3114770  | 10' 10"     | 1"    | .035"     | 8-12       | 78.70     |
| 3114771  | 10' 10-1/2" | 3/4"  | .035"     | 5-8        | 69.22     |
| 3114772  | 10' 10-1/2" | 3/4"  | .035"     | 6-10       | 69.22     |
| 3114773  | 10' 10-1/2" | 3/4"  | .035"     | 8-12       | 69.22     |
| 3114774  | 10' 10-1/2" | 3/4"  | .035"     | 10-14      | 69.22     |
| 3114775  | 10' 10-1/2" | 1"    | .035"     | 5-8        | 78.95     |
| 3114776  | 10' 10-1/2" | 1"    | .035"     | 6-10       | 78.95     |
| 3114777  | 10' 10-1/2" | 1"    | .035"     | 8-12       | 78.95     |
| 3114778  | 10' 10-1/2" | 1"    | .035"     | 10-14      | 78.95     |
| 3114779  | 10' 11"     | 3/4"  | .035"     | 6-10       | 69.42     |
| 3114780  | 10' 11"     | 3/4"  | .035"     | 10-14      | 69.42     |
| 3114781  | 11'         | 3/4"  | .035"     | 6-10       | 69.84     |
| 3114782  | 11'         | 3/4"  | .035"     | 8-12       | 69.84     |
| 3114783  | 11'         | 3/4"  | .035"     | 10-14      | 69.84     |
| 3114784  | 11'         | 1"    | .035"     | 5-8        | 79.68     |
| 3114785  | 11'         | 1"    | .035"     | 6-10       | 79.68     |
| 3114786  | 11'         | 1"    | .035"     | 8-12       | 79.68     |
| 3114787  | 11'         | 1"    | .035"     | 10-14      | 79.68     |
| 3114788  | 11' 5"      | 3/4"  | .035"     | 5-8        | 71.90     |
| 3114789  | 11' 5"      | 3/4"  | .035"     | 6-10       | 71.90     |

| Part No. | Length     | Width  | Thickness | Teeth /in. | Price /Ea |
|----------|------------|--------|-----------|------------|-----------|
| 3114790  | 11' 5"     | 3/4"   | .035"     | 8-12       | \$71.90   |
| 3114791  | 11' 5"     | 3/4"   | .035"     | 10-14      | 71.90     |
| 3114792  | 11' 5"     | 1"     | .035"     | 6-10       | 82.12     |
| 3114793  | 11' 5"     | 1"     | .035"     | 8-12       | 82.12     |
| 3114794  | 11' 5"     | 1"     | .035"     | 10-14      | 82.12     |
| 3114795  | 11' 6"     | 3/4"   | .035"     | 5-8        | 72.32     |
| 3114796  | 11' 6"     | 3/4"   | .035"     | 6-10       | 72.32     |
| 3114797  | 11' 6"     | 3/4"   | .035"     | 8-12       | 72.32     |
| 3114798  | 11' 6"     | 3/4"   | .035"     | 10-14      | 72.32     |
| 3114799  | 11' 6"     | 1"     | .035"     | 5-8        | 82.60     |
| 3114800  | 11' 6"     | 1"     | .035"     | 6-10       | 82.60     |
| 3114801  | 11' 6"     | 1"     | .035"     | 8-12       | 82.60     |
| 3114802  | 11' 6"     | 1"     | .035"     | 10-14      | 82.60     |
| 3114803  | 11' 6"     | 1-1/4" | .042"     | 5-8        | 98.45     |
| 3114804  | 11' 6"     | 1-1/4" | .042"     | 6-10       | 98.45     |
| 3114805  | 11' 6"     | 1-1/4" | .042"     | 8-12       | 98.45     |
| 3114806  | 11' 11"    | 1"     | .035"     | 10-14      | 85.04     |
| 3114807  | 12'        | 1"     | .035"     | 5-8        | 85.54     |
| 3114808  | 12'        | 1"     | .035"     | 6-10       | 85.54     |
| 3114809  | 12'        | 1"     | .035"     | 8-12       | 85.54     |
| 3114810  | 12'        | 1"     | .035"     | 10-14      | 85.54     |
| 3114811  | 12'        | 1-1/4" | .042"     | 5-8        | 101.94    |
| 3114812  | 12' 1"     | 3/4"   | .035"     | 6-10       | 75.22     |
| 3114813  | 12' 1"     | 3/4"   | .035"     | 10-14      | 75.22     |
| 3114814  | 12' 3-3/4" | 1"     | .035"     | 6-10       | 87.38     |
| 3114815  | 12' 3-3/4" | 1"     | .035"     | 10-14      | 87.38     |
| 3114816  | 12' 4"     | 1"     | .035"     | 5-8        | 87.50     |
| 3114817  | 12' 6"     | 3/4"   | .035"     | 10-14      | 77.29     |
| 3114818  | 12' 6"     | 1"     | .035"     | 5-8        | 88.48     |
| 3114819  | 12' 6"     | 1"     | .035"     | 6-10       | 88.48     |
| 3114820  | 12' 6"     | 1"     | .035"     | 8-12       | 88.48     |
| 3114821  | 12' 6"     | 1"     | .035"     | 10-14      | 88.48     |
| 3114822  | 12' 6"     | 1-1/4" | .042"     | 6-10       | 105.45    |
| 3114823  | 12' 6"     | 1-1/4" | .042"     | 8-12       | 105.45    |
| 3114824  | 12' 10"    | 3/4"   | .035"     | 10-14      | 78.95     |
| 3114825  | 12' 10"    | 1"     | .035"     | 5-8        | 90.43     |
| 3114826  | 12' 10"    | 1"     | .035"     | 6-10       | 90.43     |
| 3114827  | 12' 10"    | 1"     | .035"     | 8-12       | 90.43     |
| 3114828  | 12' 10"    | 1"     | .035"     | 10-14      | 90.43     |
| 3114829  | 13'        | 1"     | .035"     | 6-10       | 91.40     |
| 3114830  | 13' 2"     | 1"     | .035"     | 6-10       | 92.38     |
| 3114831  | 13' 3"     | 1"     | .035"     | 5-8        | 92.87     |
| 3114832  | 13' 3"     | 1"     | .035"     | 6-10       | 92.87     |
| 3114833  | 13' 3"     | 1"     | .035"     | 8-12       | 92.87     |
| 3114834  | 13' 3"     | 1"     | .035"     | 10-14      | 92.87     |
| 3114835  | 13' 4"     | 1"     | .035"     | 8-12       | 93.36     |
| 3114836  | 13' 4"     | 1"     | .035"     | 10-14      | 93.36     |
| 3114837  | 13' 6"     | 1"     | .035"     | 5-8        | 94.33     |
| 3114838  | 13' 6"     | 1"     | .035"     | 6-10       | 94.33     |
| 3114839  | 13' 6"     | 1-1/4" | .042"     | 5-8        | 112.43    |
| 3114840  | 13' 6"     | 1-1/4" | .042"     | 6-10       | 112.43    |
| 3114841  | 13' 6"     | 1-1/4" | .042"     | 8-12       | 112.43    |
| 3114842  | 13' 11"    | 1"     | .035"     | 6-10       | 96.77     |
| 3114843  | 13' 11"    | 1"     | .035"     | 8-12       | 96.77     |
| 3114844  | 13' 11"    | 1"     | .035"     | 10-14      | 96.77     |
| 3114845  | 14'        | 1-1/4" | .042"     | 8-12       | 115.92    |
| 3114846  | 14' 3"     | 1-1/4" | .042"     | 5-8        | 117.67    |
| 3114847  | 14' 3"     | 1-1/4" | .042"     | 6-10       | 117.67    |
| 3114848  | 14' 4"     | 1"     | .035"     | 6-10       | 99.21     |
| 3114849  | 14' 5"     | 1"     | .035"     | 6-10       | 99.70     |
| 3114850  | 14' 6"     | 3/4"   | .035"     | 6-10       | 87.21     |
| 3114851  | 14' 6"     | 3/4"   | .035"     | 8-12       | 87.21     |
| 3114852  | 14' 6"     | 3/4"   | .035"     | 10-14      | 87.21     |
| 3114853  | 14' 6"     | 1"     | .035"     | 5-8        | 100.19    |
| 3114854  | 14' 6"     | 1"     | .035"     | 6-10       | 100.19    |
| 3114855  | 14' 6"     | 1"     | .035"     | 8-12       | 100.19    |
| 3114856  | 14' 6"     | 1"     | .035"     | 10-14      | 100.19    |
| 3114857  | 14' 6"     | 1-1/4" | .042"     | 5-8        | 119.41    |
| 3114858  | 14' 6"     | 1-1/4" | .042"     | 6-10       | 119.41    |
| 3114859  | 14' 6"     | 1-1/4" | .042"     | 8-12       | 119.41    |
| 3114860  | 14' 8"     | 3/4"   | .035"     | 5-8        | 88.04     |
| 3114861  | 14' 8"     | 3/4"   | .035"     | 6-10       | 88.04     |
| 3114862  | 14' 8"     | 3/4"   | .035"     | 8-12       | 88.04     |
| 3114863  | 14' 8"     | 3/4"   | .035"     | 10-14      | 88.04     |
| 3114864  | 14' 8"     | 1"     | .035"     | 6-10       | 101.16    |
| 3114865  | 14' 8"     | 1"     | .035"     | 8-12       | 101.16    |
| 3114866  | 14' 8"     | 1"     | .035"     | 10-14      | 101.16    |
| 3114867  | 15'        | 1-1/4" | .042"     | 5-8        | 122.90    |
| 3114868  | 15'        | 1-1/4" | .042"     | 6-10       | 122.90    |
| 3114869  | 15'        | 1-1/4" | .042"     | 8-12       | 122.90    |

| Part No. | Length  | Width  | Thickness | Teeth /in. | Price /Ea |
|----------|---------|--------|-----------|------------|-----------|
| 3114870  | 15' 6"  | 1"     | .035"     | 5-8        | \$106.04  |
| 3114871  | 15' 6"  | 1"     | .035"     | 6-10       | 106.04    |
| 3114872  | 15' 6"  | 1"     | .035"     | 10-14      | 106.04    |
| 3114873  | 15' 6"  | 1-1/4" | .042"     | 5-8        | 126.39    |
| 3114874  | 15' 6"  | 1-1/4" | .042"     | 6-10       | 126.39    |
| 3114875  | 15' 8"  | 3/4"   | .035"     | 10-14      | 93.00     |
| 3114876  | 15' 8"  | 1-1/4" | .042"     | 5-8        | 127.56    |
| 3114877  | 15' 8"  | 1-1/4" | .042"     | 8-12       | 127.56    |
| 3114878  | 16' 1"  | 1-1/4" | .042"     | 5-8        | 129.88    |
| 3114879  | 16' 1"  | 1-1/4" | .042"     | 8-12       | 129.92    |
| 3114880  | 16' 10" | 1-1/4" | .042"     | 8-12       | 135.74    |
| 3114881  | 17' 6"  | 1-1/2" | .050"     | 3-4        | 169.93    |
| 3114882  | 18' 6"  | 1-1/4" | .042"     | 5-8        | 147.38    |
| 3114883  | 18' 10" | 1-1/4" | .042"     | 8-12       | 149.73    |
| 3114884  | 18' 10" | 1-1/2" | .050"     | 5-8        | 181.52    |

## LENOX-LXP®

- For extreme production rates
- 3/4" width through 3" width; tooth configurations from very coarse to semi-coarse
- Applications: production cutting, aluminum, bearing steels, alloy steels, tool steels, stainless steels, solids, heavy walled tubing



| Part No. | Length      | Width | Thickness | Teeth /in. | Price /Ea |
|----------|-------------|-------|-----------|------------|-----------|
| 3114995  | 7' 9"       | 3/4"  | .035"     | 4-6        | \$60.41   |
| 3114996  | 9' 8"       | 1"    | .035"     | 3-4        | 80.34     |
| 3114997  | 9' 10"      | 1"    | .035"     | 4-6        | 81.46     |
| 3114998  | 9' 11-1/2"  | 1"    | .035"     | 5-8        | 82.30     |
| 3114999  | 10'         | 1"    | .035"     | 4-6        | 83.15     |
| 3115000  | 10' 2"      | 1"    | .035"     | 3-4        | 83.71     |
| 3115001  | 10' 6"      | 1"    | .035"     | 3-4        | 85.95     |
| 3115002  | 10' 9"      | 3/4"  | .035"     | 4-6        | 77.87     |
| 3115003  | 10' 9"      | 1"    | .035"     | 5-8        | 87.63     |
| 3115004  | 10' 10-1/2" | 3/4"  | .035"     | 4-6        | 78.60     |
| 3115005  | 10' 10-1/2" | 1"    | .035"     | 2-3        | 88.47     |
| 3115006  | 10' 10-1/2" | 1"    | .035"     | 3-4        | 88.47     |
| 3115007  | 10' 10-1/2" | 1"    | .035"     | 4-6        | 88.47     |
| 3115008  | 10' 10-1/2" | 1"    | .035"     | 5-8        | 88.49     |
| 3115009  | 11'         | 3/4"  | .035"     | 4-6        | 79.34     |
| 3115010  | 11'         | 1"    | .035"     | 2-3        | 89.33     |
| 3115011  | 11'         | 1"    | .035"     | 3-4        | 89.33     |
| 3115012  | 11'         | 1"    | .035"     | 4-6        | 89.33     |
| 3115013  | 11'         | 1"    | .035"     | 5-8        | 89.33     |
| 3115014  | 11' 3"      | 1"    | .035"     | 4-6        | 91.01     |
| 3115015  | 11' 5"      | 3/4"  | .035"     | 4-6        | 81.76     |
| 3115016  | 11' 5"      | 1"    | .035"     | 4-6        | 92.13     |
| 3115017  | 11' 5"      | 1"    | .035"     | 5-8        | 92.13     |
| 3115018  | 11' 6"      | 3/4"  | .035"     | 4-6        | 82.25     |
| 3115019  | 11' 6"      | 1"    | .03       |            |           |

# BAND SAW BLADES

## Band Saw Blades Cont.



### LENOX-LXP® Cont.

| Part No. | Length  | Width  | Thickness | Teeth /in. | Price /Ea |
|----------|---------|--------|-----------|------------|-----------|
| 3115048  | 12' 10" | 1"     | .035"     | 2-3        | \$101.67  |
| 3115049  | 12' 10" | 1"     | .035"     | 3-4        | 101.67    |
| 3115050  | 12' 10" | 1"     | .035"     | 4-6        | 101.67    |
| 3115051  | 12' 10" | 1-1/4" | .042"     | 3-4        | 114.27    |
| 3115052  | 13' 2"  | 1"     | .035"     | 4-6        | 103.91    |
| 3115053  | 13' 3"  | 1"     | .035"     | 2-3        | 104.47    |
| 3115054  | 13' 3"  | 1"     | .035"     | 4-6        | 104.47    |
| 3115055  | 13' 3"  | 1"     | .035"     | 5-8        | 104.47    |
| 3115056  | 13' 4"  | 1"     | .035"     | 2-3        | 105.03    |
| 3115057  | 13' 4"  | 1"     | .035"     | 3-4        | 105.03    |
| 3115058  | 13' 4"  | 1"     | .035"     | 5-8        | 105.03    |
| 3115059  | 13' 4"  | 1-1/4" | .042"     | 3-4        | 118.01    |
| 3115060  | 13' 5"  | 1-1/4" | .042"     | 3-4        | 118.64    |
| 3115061  | 13' 6"  | 1"     | .035"     | 2-3        | 106.16    |
| 3115062  | 13' 6"  | 1"     | .035"     | 3-4        | 106.16    |
| 3115063  | 13' 6"  | 1"     | .035"     | 4-6        | 106.16    |
| 3115064  | 13' 6"  | 1"     | .035"     | 5-8        | 106.16    |
| 3115065  | 13' 6"  | 1-1/4" | .042"     | 1.5-2.0    | 119.26    |
| 3115066  | 13' 6"  | 1-1/4" | .042"     | 2-3        | 119.26    |
| 3115067  | 13' 6"  | 1-1/4" | .042"     | 3-4        | 119.26    |
| 3115068  | 13' 6"  | 1-1/4" | .042"     | 4-6        | 119.26    |
| 3115069  | 13' 6"  | 1-1/4" | .042"     | 5-8        | 119.26    |
| 3115070  | 13' 6"  | 1-1/2" | .050"     | 2-3        | 153.28    |
| 3115071  | 13' 6"  | 1-1/2" | .050"     | 3-4        | 153.28    |
| 3115072  | 13' 6"  | 1-1/2" | .050"     | 4-6        | 153.28    |
| 3115073  | 13' 11" | 1"     | .035"     | 2-3        | 108.96    |
| 3115074  | 13' 11" | 1"     | .035"     | 4-6        | 108.96    |
| 3115075  | 14'     | 1-1/4" | .042"     | 4-6        | 123.00    |
| 3115076  | 14' 6"  | 3/4"   | .035"     | 4-6        | 99.71     |
| 3115077  | 14' 6"  | 1"     | .035"     | 2-3        | 112.88    |
| 3115078  | 14' 6"  | 1"     | .035"     | 3-4        | 112.88    |
| 3115079  | 14' 6"  | 1"     | .035"     | 4-6        | 112.88    |
| 3115080  | 14' 6"  | 1"     | .035"     | 5-8        | 112.88    |
| 3115081  | 14' 6"  | 1-1/4" | .042"     | 2-3        | 126.75    |
| 3115082  | 14' 6"  | 1-1/4" | .042"     | 3-4        | 126.75    |
| 3115083  | 14' 6"  | 1-1/4" | .042"     | 4-6        | 126.75    |
| 3115084  | 14' 6"  | 1-1/4" | .042"     | 5-8        | 126.75    |
| 3115085  | 14' 6"  | 1-1/2" | .050"     | 3-4        | 163.29    |
| 3115086  | 14' 8"  | 3/4"   | .035"     | 4-6        | 100.68    |
| 3115087  | 14' 8"  | 1"     | .035"     | 3-4        | 114.01    |
| 3115088  | 14' 8"  | 1"     | .035"     | 4-6        | 114.01    |
| 3115089  | 14' 11" | 1"     | .035"     | 4-6        | 115.69    |
| 3115090  | 15'     | 1"     | .035"     | 3-4        | 116.25    |
| 3115091  | 15'     | 1-1/4" | .042"     | 1.5-2.0    | 130.49    |
| 3115092  | 15'     | 1-1/4" | .042"     | 2-3        | 130.49    |
| 3115093  | 15'     | 1-1/4" | .042"     | 3-4        | 130.49    |
| 3115094  | 15'     | 1-1/4" | .042"     | 4-6        | 130.49    |
| 3115095  | 15'     | 1-1/2" | .050"     | 2-3        | 168.29    |
| 3115096  | 15'     | 1-1/2" | .050"     | 3-4        | 168.29    |
| 3115097  | 15'     | 1-1/2" | .050"     | 4-6        | 168.29    |
| 3115098  | 15' 2"  | 1-1/2" | .050"     | 2-3        | 169.96    |
| 3115099  | 15' 3"  | 1-1/4" | .042"     | 3-4        | 132.36    |
| 3115100  | 15' 3"  | 1-1/4" | .042"     | 4-6        | 132.36    |
| 3115101  | 15' 4"  | 1-1/4" | .042"     | 3-4        | 132.98    |
| 3115102  | 15' 4"  | 1-1/4" | .042"     | 4-6        | 132.98    |
| 3115103  | 15' 4"  | 1-1/2" | .050"     | 3-4        | 171.62    |
| 3115104  | 15' 4"  | 1-1/2" | .050"     | 4-6        | 171.65    |
| 3115105  | 15' 6"  | 1"     | .035"     | 2-3        | 119.64    |
| 3115106  | 15' 6"  | 1"     | .035"     | 3-4        | 119.64    |
| 3115115  | 15' 6"  | 1"     | .035"     | 4-6        | 119.64    |
| 3115116  | 15' 6"  | 1"     | .035"     | 5-8        | 119.64    |
| 3115117  | 15' 6"  | 1-1/4" | .042"     | 1.5-2.0    | 134.33    |
| 3115118  | 15' 6"  | 1-1/4" | .042"     | 2-3        | 134.33    |
| 3115119  | 15' 6"  | 1-1/4" | .042"     | 3-4        | 134.33    |
| 3115120  | 15' 6"  | 1-1/4" | .042"     | 4-6        | 134.33    |
| 3115121  | 15' 6"  | 1-1/4" | .042"     | 5-8        | 134.33    |
| 3115122  | 15' 6"  | 1-1/2" | .050"     | 2-3        | 173.42    |
| 3115123  | 15' 6"  | 1-1/2" | .050"     | 3-4        | 173.42    |
| 3115124  | 15' 6"  | 1-1/2" | .050"     | 4-6        | 173.42    |
| 3115125  | 15' 8"  | 3/4"   | .035"     | 4-6        | 106.59    |
| 3115126  | 15' 8"  | 1-1/4" | .042"     | 1.5-2.0    | 135.58    |
| 3115127  | 15' 8"  | 1-1/4" | .042"     | 2-3        | 135.58    |
| 3115128  | 15' 8"  | 1-1/4" | .042"     | 3-4        | 135.58    |
| 3115129  | 15' 8"  | 1-1/4" | .042"     | 4-6        | 135.58    |
| 3115130  | 15' 8"  | 1-1/2" | .050"     | 2-3        | 175.09    |
| 3115131  | 16'     | 1-1/4" | .042"     | 4-6        | 138.08    |
| 3115132  | 16'     | 1-1/2" | .050"     | 2-3        | 178.43    |

| Part No. | Length  | Width  | Thickness | Teeth /in. | Price /Ea |
|----------|---------|--------|-----------|------------|-----------|
| 3115133  | 16' 2"  | 1-1/4" | .042"     | 4-6        | \$139.32  |
| 3115134  | 16' 6"  | 1-1/4" | .042"     | 3-4        | 141.82    |
| 3115135  | 16' 6"  | 1-1/4" | .042"     | 4-6        | 141.82    |
| 3115136  | 16' 6"  | 1-1/2" | .050"     | 2-3        | 183.43    |
| 3115137  | 16' 10" | 1-1/4" | .042"     | 3-4        | 131.60    |
| 3115138  | 16' 10" | 1-1/4" | .042"     | 4-6        | 131.60    |
| 3115139  | 16' 10" | 1-1/4" | .042"     | 5-8        | 144.32    |
| 3115140  | 17'     | 1-1/4" | .042"     | 4-6        | 145.56    |
| 3115141  | 17' 5"  | 1-1/2" | .050"     | 3-4        | 192.61    |
| 3115142  | 17' 6"  | 1-1/4" | .042"     | 2-3        | 149.31    |
| 3115143  | 17' 6"  | 1-1/4" | .042"     | 3-4        | 149.31    |
| 3115144  | 17' 6"  | 1-1/2" | .050"     | 2-3        | 193.45    |
| 3115145  | 17' 6"  | 1-1/2" | .050"     | 3-4        | 193.45    |
| 3115146  | 17' 6"  | 1-1/2" | .050"     | 4-6        | 193.45    |
| 3115147  | 17' 8"  | 1-1/2" | .050"     | 2-3        | 195.11    |
| 3115148  | 17' 9"  | 1-1/2" | .050"     | 2-3        | 195.95    |
| 3115149  | 17' 9"  | 1-1/2" | .050"     | 3-4        | 195.95    |
| 3115150  | 17' 9"  | 1-1/2" | .050"     | 4-6        | 195.95    |
| 3115151  | 18' 10" | 1-1/4" | .042"     | 3-4        | 159.30    |
| 3115152  | 18' 10" | 1-1/2" | .050"     | 2-3        | 206.80    |
| 3115153  | 18' 10" | 1-1/2" | .050"     | 3-4        | 206.80    |
| 3115154  | 18' 10" | 1-1/2" | .050"     | 4-6        | 206.80    |
| 3115155  | 19'     | 1-1/2" | .050"     | 2-3        | 208.46    |
| 3115156  | 19'     | 2"     | .063"     | 1.5-2.0    | 292.87    |
| 3115157  | 19'     | 2"     | .063"     | 2-3        | 292.87    |
| 3115158  | 19' 6"  | 1"     | .035"     | 2-3        | 146.64    |
| 3115159  | 19' 8"  | 1-1/4" | .042"     | 4-6        | 165.54    |
| 3115160  | 19' 8"  | 1-1/2" | .050"     | 2-3        | 215.14    |
| 3115161  | 20'     | 1-1/2" | .050"     | 2-3        | 218.48    |
| 3115162  | 20' 6"  | 1-1/2" | .050"     | 2-3        | 223.48    |
| 3115163  | 20' 6"  | 1-1/2" | .050"     | 3-4        | 223.48    |
| 3115164  | 20' 6"  | 1-1/2" | .050"     | 4-6        | 223.48    |
| 3115165  | 21'     | 1-1/4" | .042"     | 1.5-2.0    | 175.52    |
| 3115166  | 20' 8"  | 1-1/2" | .050"     | 2-3        | 228.49    |
| 3115167  | 21'     | 1-1/2" | .050"     | 3-4        | 228.49    |
| 3115168  | 21'     | 1-1/2" | .050"     | 4-6        | 228.49    |
| 3115169  | 21'     | 2"     | .063"     | 3-4        | 320.63    |
| 3115170  | 21' 6"  | 1-1/2" | .050"     | 1.5-2.0    | 233.49    |
| 3115171  | 21' 6"  | 1-1/2" | .050"     | 2-3        | 233.49    |
| 3115172  | 25'     | 2"     | .063"     | 1.5-2.0    | 376.14    |
| 3115173  | 25'     | 2"     | .063"     | 4-6        | 376.14    |
| 3115174  | 25' 6"  | 2"     | .063"     | 2-3        | 383.08    |
| 3115175  | 31' 6"  | 2"     | .063"     | 1.0-1.3    | 465.19    |
| 3115176  | 31' 6"  | 2"     | .063"     | 1.5-2.0    | 465.19    |

### LENOX - RX+®

- Engineered to cut structural tubing and bundles
- 5/8" width through 2-5/8" width; tooth configurations from coarse to semi-coarse
- Applications: large cross section profiles, cutting angle, channel, I-beams and pipe



| Part No. | Length      | Width | Thickness | Teeth /in. | Price /Ea |
|----------|-------------|-------|-----------|------------|-----------|
| 3114885  | 7' 9"       | 3/4"  | .035"     | 4-6        | \$60.40   |
| 3114886  | 7' 9"       | 3/4"  | .035"     | 5-8        | 60.40     |
| 3114887  | 9'          | 3/4"  | .035"     | 4-6        | 67.68     |
| 3114888  | 9'          | 3/4"  | .035"     | 5-8        | 67.68     |
| 3114889  | 9' 9"       | 3/4"  | .035"     | 4-6        | 72.04     |
| 3114890  | 9' 9"       | 3/4"  | .035"     | 5-8        | 72.04     |
| 3114891  | 10'         | 3/4"  | .035"     | 5-8        | 73.50     |
| 3114892  | 10'         | 1"    | .035"     | 4-6        | 82.58     |
| 3114893  | 10'         | 1"    | .035"     | 5-8        | 82.58     |
| 3114894  | 10' 4"      | 1"    | .035"     | 3-4        | 84.82     |
| 3114895  | 10' 4"      | 1"    | .035"     | 4-6        | 84.82     |
| 3114896  | 10' 4"      | 1"    | .035"     | 5-8        | 84.82     |
| 3114897  | 10' 5"      | 3/4"  | .035"     | 5-8        | 75.92     |
| 3114898  | 10' 10-1/2" | 3/4"  | .035"     | 4-6        | 78.59     |
| 3114899  | 10' 10-1/2" | 3/4"  | .035"     | 5-8        | 78.59     |
| 3114900  | 10' 10-1/2" | 1"    | .035"     | 4-6        | 88.46     |
| 3114901  | 10' 10-1/2" | 1"    | .035"     | 5-8        | 88.46     |
| 3114902  | 11'         | 3/4"  | .035"     | 4-6        | 79.31     |
| 3114903  | 11'         | 3/4"  | .035"     | 5-8        | 79.31     |
| 3114904  | 11'         | 1"    | .035"     | 4-6        | 89.30     |
| 3114905  | 11'         | 1"    | .035"     | 5-8        | 89.30     |
| 3114906  | 11' 5"      | 1"    | .035"     | 4-6        | 92.12     |
| 3114907  | 11' 5"      | 1"    | .035"     | 5-8        | 92.12     |
| 3114908  | 11' 6"      | 3/4"  | .035"     | 4-6        | 82.23     |
| 3114909  | 11' 6"      | 3/4"  | .035"     | 5-8        | 82.23     |
| 3114910  | 11' 6"      | 1"    | .035"     | 3-4        | 92.68     |

| Part No. | Length  | Width  | Thickness | Teeth /in. | Price /Ea |
|----------|---------|--------|-----------|------------|-----------|
| 3114911  | 11' 6"  | 1"     | .035"     | 4-6        | \$92.68   |
| 3114912  | 11' 6"  | 1"     | .035"     | 5-8        | 92.68     |
| 3114913  | 11' 6"  | 1-1/4" | .042"     | 2-3        | 104.27    |
| 3114914  | 11' 6"  | 1-1/4" | .042"     | 3-4        | 104.27    |
| 3114915  | 11' 6"  | 1-1/4" | .042"     | 4-6        | 104.27    |
| 3114916  | 11' 6"  | 1-1/4" | .042"     | 5-8        | 104.27    |
| 3114917  | 12'     | 1"     | .035"     | 2-3        | 96.04     |
| 3114918  | 12'     | 1"     | .035"     | 3-4        | 96.04     |
| 3114919  | 12'     | 1"     | .035"     | 4-6        | 96.04     |
| 3114920  | 12'     | 1"     | .035"     | 5-8        | 96.04     |
| 3114921  | 12'     | 1-1/4" | .042"     | 3-4        | 108.01    |
| 3114922  | 12'     | 1-1/4" | .042"     | 4-6        | 108.01    |
| 3114923  | 12'     | 1-1/4" | .042"     | 5-8        | 108.01    |
| 3114924  | 12' 6"  | 1"     | .035"     | 3-4        | 99.40     |
| 3114925  | 12' 6"  | 1"     | .035"     | 4-6        | 99.40     |
| 3114926  | 12' 6"  | 1"     | .035"     | 5-8        | 99.40     |
| 3114927  | 12' 6"  | 1-1/4" | .042"     | 3-4        | 111.75    |
| 3114928  | 12' 6"  | 1-1/4" | .042"     | 4-6        | 111.75    |
| 3114929  | 12' 6"  | 1-1/4" | .042"     | 5-8        | 111.75    |
| 3114930  | 12' 10" | 1"     | .035"     | 3-4        | 101.65    |
| 3114931  | 12' 10" | 1"     | .035"     | 4-6        | 101.65    |
| 3114932  | 12' 10" | 1"     | .035"     | 5-8        | 101.65    |
| 3114933  | 13' 2"  | 1"     | .035"     | 4-6        | 103.89    |
| 3114934  | 13' 3"  | 1"     | .035"     | 3-4        | 104.45    |
| 3114935  | 13' 3"  | 1"     | .035"     | 4-6        | 104.45    |
| 3114936  | 13' 3"  | 1"     | .035"     | 5-8        | 104.45    |
| 3114937  | 13' 5"  | 1-1/4" | .042"     | 3-4        | 118.61    |
| 3114938  | 13' 5"  | 1-1/4" | .042"     | 5-8        | 118.61    |
| 3114939  | 13' 6"  | 1"     | .035"     | 3-4        | 106.13    |
| 3114940  | 13' 6"  | 1"     | .035"     | 4-6        | 106.13    |
| 3114941  | 13' 6"  | 1"     | .035"     | 5-8        | 106.13    |
| 3114942  | 13' 6"  | 1-1/4" | .042"     | 3-4        | 119.23    |
| 3114943  | 13' 6"  | 1-1/4" | .042"     | 4-6        | 119.23    |
| 3114944  | 13' 6"  | 1-1/4" | .042"     | 5-8        | 119.23    |
| 3114945  | 13' 11" | 1"     | .035"     | 4-6        | 108.93    |
| 3114946  | 13' 11" | 1"     | .035"     | 5-8        | 108.93    |
| 3114947  | 14' 3"  | 1"     | .035"     | 3-4        | 111.18    |
| 3114948  | 14' 3"  | 1"     | .035"     | 4-6        | 111.18    |
| 3114949  | 14' 3"  | 1-1/4" | .042"     | 4-6        | 124.85    |
| 3114950  | 14' 3"  | 1-1/4" | .042"     | 5-8        | 124.85    |

# BAND SAW BLADES & COLD SAW BLADES

## Band Saw Blades Cont.



### LENOX - RX+® Extra Heavy Set

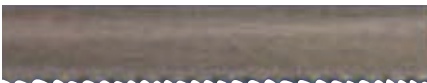
Prevents blade pinching



| Part No. | Length  | Width  | Thickness | Teeth /in. | Price /Ea |
|----------|---------|--------|-----------|------------|-----------|
| 3115263  | 11' 6"  | 1-1/4" | .042"     | 3-4        | \$105.13  |
| 3115264  | 11' 6"  | 1-1/4" | .042"     | 4-6        | 105.13    |
| 3115265  | 12'     | 1-1/4" | .042"     | 3-4        | 108.90    |
| 3115266  | 12'     | 1-1/4" | .042"     | 4-6        | 108.90    |
| 3115267  | 13' 6"  | 1-1/4" | .042"     | 3-4        | 120.25    |
| 3115268  | 13' 6"  | 1-1/4" | .042"     | 4-6        | 120.33    |
| 3115269  | 14' 6"  | 1-1/4" | .042"     | 2-3        | 127.88    |
| 3115270  | 14' 6"  | 1-1/4" | .042"     | 3-4        | 127.88    |
| 3115271  | 14' 6"  | 1-1/4" | .042"     | 4-6        | 127.88    |
| 3115272  | 15'     | 1-1/4" | .042"     | 2-3        | 131.66    |
| 3115273  | 15' 4"  | 1-1/4" | .042"     | 4-6        | 134.17    |
| 3115274  | 15' 6"  | 1-1/4" | .042"     | 3-4        | 135.43    |
| 3115275  | 15' 6"  | 1-1/4" | .042"     | 4-6        | 135.43    |
| 3115276  | 15' 6"  | 1-1/2" | .050"     | 3-4        | 174.84    |
| 3115277  | 15' 6"  | 1-1/2" | .050"     | 4-6        | 174.84    |
| 3115278  | 15' 8"  | 1-1/4" | .042"     | 3-4        | 136.69    |
| 3115279  | 15' 8"  | 1-1/4" | .042"     | 4-6        | 136.72    |
| 3115280  | 16'     | 1-1/4" | .042"     | 3-4        | 139.23    |
| 3115281  | 16'     | 1-1/4" | .042"     | 4-6        | 144.53    |
| 3115282  | 18' 6"  | 1-1/2" | .050"     | 4-6        | 212.96    |
| 3115287  | 18' 10" | 1-1/2" | .050"     | 2-3        | 216.45    |
| 3115288  | 18' 10" | 1-1/2" | .050"     | 3-4        | 216.45    |
| 3115289  | 18' 10" | 1-1/2" | .050"     | 4-6        | 216.45    |
| 3115290  | 20' 6"  | 1-1/2" | .050"     | 2-3        | 233.92    |
| 3115291  | 20' 6"  | 1-1/2" | .050"     | 3-4        | 233.92    |
| 3115292  | 22'     | 2"     | .063"     | 4-6        | 325.96    |
| 3115293  | 22'     | 2"     | .063"     | 3-4        | 325.96    |

### LENOX - DIEMASTER 2®

- Precision triple chip grind - smooth cuts, excellent finish
- New high performance backing steel - excellent fatigue life
- Applications: abrasive non-ferrous materials, wood cutting, alloy steels, tool steels, bearing steels, carbon steels, stainless steels, mold steels



| Part No. | Length    | Width | Thickness | Teeth /in. | Price /Ea |
|----------|-----------|-------|-----------|------------|-----------|
| 3115177  | 3' 8-7/8" | 1/2"  | .020"     | 10-14      | \$28.64   |
| 3115178  | 3' 8-7/8" | 1/2"  | .020"     | 14         | 28.64     |
| 3115179  | 3' 8-7/8" | 1/2"  | .020"     | 18         | 29.46     |
| 3115180  | 4' 5-3/4" | 1/2"  | .020"     | 18         | 32.98     |
| 3115181  | 5'        | 1/2"  | .025"     | 10-14      | 35.49     |
| 3115182  | 5' 4-1/4" | 1/2"  | .025"     | 10-14      | 37.18     |
| 3115183  | 5' 4-1/2" | 1/2"  | .020"     | 10-14      | 36.15     |
| 3115184  | 5' 4-1/2" | 1/2"  | .020"     | 14         | 36.15     |
| 3115185  | 5' 4-1/2" | 1/2"  | .020"     | 14-18      | 36.15     |
| 3115186  | 5' 4-1/2" | 1/2"  | .020"     | 18         | 37.32     |
| 3115187  | 5' 4-1/2" | 1/2"  | .025"     | 6-10       | 37.36     |
| 3115188  | 5' 4-1/2" | 1/2"  | .025"     | 14-18      | 37.36     |
| 3115189  | 6' 8"     | 3/8"  | .025"     | 10-14      | 43.52     |
| 3115190  | 6' 8-7/8" | 1/2"  | .025"     | 14-18      | 43.92     |
| 3115191  | 7' 5"     | 1/2"  | .020"     | 24         | 45.43     |
| 3115192  | 7' 5"     | 1/2"  | .025"     | 10-14      | 47.10     |
| 3115193  | 7' 9"     | 1/4"  | .025"     | 10-14      | 48.70     |
| 3115194  | 7' 9"     | 3/8"  | .025"     | 10-14      | 48.70     |
| 3115195  | 7' 9"     | 3/8"  | .025"     | 14-18      | 48.70     |
| 3115196  | 7' 9"     | 1/2"  | .025"     | 8-12       | 48.70     |
| 3115197  | 7' 9"     | 1/2"  | .025"     | 14-18      | 48.70     |
| 3115198  | 7' 9-1/2" | 1/2"  | .025"     | 6-10       | 48.89     |
| 3115199  | 7' 9-1/2" | 1/2"  | .025"     | 8-12       | 48.89     |
| 3115200  | 7' 9-1/2" | 1/2"  | .025"     | 10-14      | 48.89     |
| 3115201  | 7' 9-1/2" | 1/2"  | .025"     | 14-18      | 48.89     |

| Part No. | Length    | Width | Thickness | Teeth /in. | Price /Ea |
|----------|-----------|-------|-----------|------------|-----------|
| 3115202  | 7' 9-1/2" | 1/2"  | .035"     | 6          | \$48.89   |
| 3115203  | 7' 9-1/2" | 1/2"  | .035"     | 10         | 48.89     |
| 3115204  | 8' 2"     | 1/2"  | .025"     | 8-12       | 50.68     |
| 3115205  | 8' 2"     | 1/2"  | .025"     | 10-14      | 50.68     |
| 3115206  | 8' 11"    | 1/2"  | .025"     | 10-14      | 54.26     |
| 3115207  | 9' 1"     | 1/2"  | .025"     | 8-12       | 55.06     |
| 3115208  | 10'       | 1/2"  | .025"     | 14-18      | 59.44     |
| 3115209  | 10'       | 1/2"  | .025"     | 10-14      | 59.44     |
| 3115210  | 10'       | 1/2"  | .025"     | 8-12       | 59.44     |
| 3115211  | 10' 2"    | 1/2"  | .035"     | 10         | 60.23     |
| 3115212  | 10' 5"    | 3/8"  | .025"     | 10-14      | 61.42     |
| 3115213  | 10' 5"    | 1/4"  | .025"     | 10-14      | 61.42     |
| 3115214  | 10' 5"    | 1/2"  | .025"     | 10-14      | 61.42     |
| 3115215  | 10' 10"   | 1/2"  | .025"     | 10-14      | 63.41     |
| 3115216  | 10' 10"   | 1/2"  | .025"     | 14-18      | 63.41     |
| 3115217  | 11' 6"    | 3/8"  | .025"     | 14-18      | 66.60     |
| 3115218  | 12' 5"    | 1/2"  | .025"     | 10-14      | 70.97     |
| 3115219  | 12' 6"    | 1/4"  | .025"     | 10-14      | 71.37     |
| 3115220  | 12' 6"    | 1/4"  | .025"     | 14-18      | 70.99     |
| 3115221  | 12' 6"    | 3/8"  | .025"     | 10-14      | 71.37     |
| 3115222  | 12' 6"    | 3/8"  | .025"     | 14-18      | 71.37     |
| 3115223  | 12' 6"    | 3/8"  | .035"     | 4          | 71.37     |
| 3115224  | 12' 6"    | 3/8"  | .035"     | 6          | 71.37     |
| 3115225  | 12' 6"    | 1/2"  | .025"     | 6-10       | 71.37     |
| 3115226  | 12' 6"    | 1/2"  | .025"     | 8-12       | 71.37     |
| 3115227  | 12' 6"    | 1/2"  | .025"     | 10-14      | 71.37     |
| 3115228  | 12' 6"    | 1/2"  | .025"     | 14-18      | 71.37     |
| 3115229  | 12' 6"    | 1/2"  | .035"     | 10         | 71.37     |
| 3115230  | 12' 7"    | 1/4"  | .025"     | 10-14      | 71.77     |
| 3115231  | 12' 10"   | 1/2"  | .025"     | 10-14      | 72.96     |
| 3115232  | 13' 3"    | 1/2"  | .025"     | 10-14      | 74.95     |
| 3115233  | 14' 4"    | 1/4"  | .025"     | 10-14      | 80.12     |
| 3115234  | 14' 6"    | 1/2"  | .025"     | 6-10       | 80.92     |
| 3115235  | 14' 6"    | 1/2"  | .025"     | 8-12       | 80.92     |
| 3115236  | 14' 7"    | 1/4"  | .035"     | 10-14      | 81.31     |
| 3115237  | 14' 7"    | 3/8"  | .025"     | 14-18      | 81.31     |
| 3115238  | 14' 7"    | 1/2"  | .025"     | 8-12       | 81.31     |
| 3115239  | 14' 7"    | 1/2"  | .025"     | 10-14      | 81.31     |
| 3115240  | 14' 7"    | 1/2"  | .025"     | 14-18      | 81.31     |
| 3115241  | 14' 10"   | 1/4"  | .025"     | 10-14      | 82.51     |
| 3115242  | 14' 11"   | 3/8"  | .025"     | 10-14      | 82.90     |
| 3115243  | 15' 6"    | 1/2"  | .020"     | 10-14      | 82.19     |
| 3115244  | 15' 6"    | 1/2"  | .020"     | 14         | 82.19     |
| 3115245  | 15' 6"    | 1/2"  | .020"     | 18         | 85.58     |
| 3115246  | 15' 6"    | 1/2"  | .020"     | 24         | 82.60     |
| 3115247  | 16' 3"    | 1/4"  | .035"     | 10-14      | 89.71     |

### LENOX - Tri-Master®

- Precision triple chip grind - smooth cuts, excellent finish
- New high performance backing steel - excellent fatigue life
- Applications: abrasive non-ferrous materials, wood cutting, alloy steels, tool steels, bearing steels, carbon steels, stainless steels, mold steels



| Part No. | Length  | Width  | Thickness | Teeth /in. | Price /Ea |
|----------|---------|--------|-----------|------------|-----------|
| 3115248  | 13' 4"  | 1"     | .035"     | 2-3        | \$325.26  |
| 3115249  | 14' 6"  | 1-1/4" | .042"     | 2-3        | 364.47    |
| 3115250  | 14' 6"  | 1-1/4" | .042"     | 3          | 374.39    |
| 3115251  | 14' 6"  | 1-1/4" | .042"     | 3-4        | 452.18    |
| 3115252  | 15'     | 1-1/4" | .042"     | 2-3        | 376.42    |
| 3115253  | 15'     | 1-1/4" | .042"     | 3-4        | 467.13    |
| 3115254  | 18' 6"  | 3/4"   | .035"     | 3          | 458.21    |
| 3115255  | 19' 6"  | 3/4"   | .035"     | 3          | 482.14    |
| 3115256  | 19' 6"  | 1"     | .035"     | 2-3        | 468.57    |
| 3115257  | 19' 6"  | 1"     | .035"     | 3          | 482.14    |
| 3115258  | 19' 6"  | 1-1/4" | .042"     | 2-3        | 483.83    |
| 3115259  | 19' 6"  | 1-1/4" | .042"     | 3          | 497.15    |
| 3115260  | 20'     | 3/4"   | .035"     | 3          | 494.11    |
| 3115261  | 21' 6"  | 1-1/2" | .050"     | 2-3        | 555.96    |
| 3115262  | 28' 10" | 2-5/8" | .063"     | 1.2-1.8    | 1219.60   |

## Cold Saw Blades

### Cold Saw Blades



- HSS blades designed for Low RPM cutting of Ferrous materials

| Part No. | Description          | Price /Each |
|----------|----------------------|-------------|
| 0307883  | 250 x 2.0 x 32 TP200 | \$146.47    |
| 0307884  | 250 x 2.0 x 32 TP180 | 151.52      |
| 0307885  | 250 x 2.0 x 32 TP160 | 151.52      |
| 0307886  | 250 x 2.0 x 32 TP128 | 151.52      |
| 0307887  | 250 x 2.0 x 40 TP160 | 151.52      |
| 0307888  | 250 x 2.0 x 40 TP128 | 151.52      |
| 0307889  | 250 x 2.0 x 40 TP100 | 151.52      |
| 0307890  | 250 x 2.5 x 32 TP200 | 146.47      |
| 0307891  | 250 x 2.5 x 32 TP160 | 146.47      |
| 0307892  | 250 x 2.5 x 32 TP128 | 146.47      |
| 0307893  | 250 x 2.5 x 40 TP160 | 146.47      |
| 0307894  | 250 x 2.5 x 40 TP128 | 146.47      |
| 0307895  | 250 x 2.5 x 40 TP100 | 146.47      |
| 0307896  | 275 x 2.5 x 32 TP220 | 188.39      |
| 0307897  | 275 x 2.5 x 32 TP180 | 188.39      |
| 0307898  | 275 x 2.5 x 32 TP140 | 188.39      |
| 0307899  | 275 x 2.5 x 32 TP110 | 188.39      |
| 0307900  | 275 x 2.5 x 40 TP220 | 188.39      |
| 0307901  | 275 x 2.5 x 40 TP180 | 188.39      |
| 0307902  | 275 x 2.5 x 40 TP140 | 188.39      |
| 0307903  | 275 x 2.5 x 40 TP110 | 188.39      |
| 0307904  | 300 x 2.5 x 32 TP220 | 199.21      |
| 0307905  | 300 x 2.5 x 32 TP180 | 199.21      |
| 0307906  | 300 x 2.5 x 32 TP160 | 199.21      |
| 0307907  | 300 x 2.5 x 32 TP120 | 199.21      |
| 0307908  | 300 x 2.5 x 38 TP220 | 199.21      |
| 0307909  | 300 x 2.5 x 38 TP180 | 199.21      |
| 0307910  | 300 x 2.5 x 32 TP220 | 200.34      |
| 0307911  | 300 x 2.5 x 40 TP180 | 215.17      |
| 0307912  | 300 x 2.5 x 40 TP120 | 215.17      |
| 0307913  | 315 x 2.5 x 32 TP320 | 215.17      |
| 0307914  | 315 x 2.5 x 32 TP240 | 219.60      |
| 0307915  | 315 x 2.5 x 32 TP200 | 219.60      |
| 0307916  | 315 x 2.5 x 32 TP180 | 219.60      |
| 0307917  | 315 x 2.5 x 32 TP160 | 219.60      |
| 0307918  | 315 x 2.5 x 32 TP120 | 219.60      |
| 0307919  | 315 x 2.5 x 32 TP100 | 219.60      |
| 0307920  | 315 x 2.5 x 40 TP240 | 219.60      |
| 0307921  | 315 x 2.5 x 40 TP200 | 219.60      |
| 0307922  | 315 x 2.5 x 40 TP180 | 219.60      |
| 0307923  | 315 x 2.5 x 40 TP160 | 219.60      |
| 0307924  | 315 x 2.5 x 40 TP120 | 219.60      |
| 0307925  | 350 x 2.5 x 32 TP280 | 276.15      |
| 0307926  | 350 x 2.5 x 32 TP220 | 276.15      |
| 0307927  | 350 x 2.5 x 32 TP180 | 276.15      |
| 0307928  | 350 x 2.5 x 32 TP160 | 276.15      |
| 0307929  | 350 x 2.5 x 32 TP140 | 276.15      |
| 0307930  | 350 x 2.5 x 40 TP280 | 276.15      |
| 0307931  | 350 x 2.5 x 40 TP220 | 276.15      |
| 0307932  | 350 x 2.5 x 40 TP180 | 276.15      |
| 0307933  | 350 x 2.5 x 40 TP160 | 276.15      |
| 0307934  | 350 x 2.5 x 40 TP110 | 303.75      |
| 0307935  | 350 x 3.0 x 32 TP280 | 303.75      |
| 0307936  | 350 x 3.0 x 32 TP220 | 303.75      |
| 0307937  | 350 x 3.0 x 32 TP180 | 303.75      |
| 0307938  | 350 x 3.0 x 32 TP140 | 303.75      |
| 0307939  | 350 x 3.0 x 32 TP120 | 283.87      |
| 0307940  | 350 x 3.0 x 32 TP110 | 303.75      |
| 0307941  | 350 x 3.0 x 40 TP280 | 283.87      |
| 0307942  | 350 x 3.0 x 40 TP220 | 283.87      |
| 0307943  | 350 x 3.0 x 40 TP180 | 283.87      |
| 0307944  | 350 x 3.0 x 40 TP160 | 283.87      |
| 0307945  | 350 x 3.0 x 40 TP120 | 283.87      |
| 0307946  | 350 x 3.0 x 40 TP110 | 283.87      |

The : symbol after a price denotes that it is a Direct Ship Product (DSP) and shipping, availability & lead times may vary.



# PUMP & TANK SYSTEMS, CUTTING & METALWORKING FLUIDS

## Graymills Pump and Tank Systems

# Graymills

### Five Gallon Coolant Pump and Tank System

**Five Gallon Pump and Round Tank System-** This round tank and pump can be used for light oils and liquids up to 150 SSU. It comes with 1/4" ID flexible nozzle, valve and mesh screen to filter return flow. Pump mounts on lid and lifts off/drops in for easy fluid replenishment.



| Part No. | Vendor No. | H.P.    | Voltage | Outlet Fitting | Price /EA |
|----------|------------|---------|---------|----------------|-----------|
| 0458653  | 5-HR35-A   | 1/25 HP | 115V    | 1/2" NPT       | \$252.07: |

### 10 Gallon Coolant Pump and Tank System

**10 Gallon Coolant Pump and Tank System-Heavy Duty** cast iron pump with our high quality coolant tank. Pump moves small solids without damage and system can be oriented to conform with existing plumbing. #18 mesh screen and bowl filter. We laser cut, powder coat and assemble our own tanks to ensure the highest quality. Baffles in tank allows solids to settle out to keep fluid cleaner. Optional durable plastic nozzle with adjustable flow control. Single or Three-Phase power options.



| Part No. | Vendor No. | H.P.   | Voltage  | Outlet Fitting | Phase  | Price /EA |
|----------|------------|--------|----------|----------------|--------|-----------|
| 0458654  | 10-IMV-E   | 1/8 HP | 115/230V | 3/8" NPT       | 1Phase | \$174.72: |
| 0458655  | 10-IMV-F   | 1/8 HP | 230/460V | 3/8" NPT       | 3Phase | 165.62:   |

### Low Profile Coolant Pump and Tank System

**Low Profile Coolant Pump and Tank System-** Units combine some features of our conventional systems with lower working heights, portability and feature our IM Series pumps. All units feature 16-gauge construction, chip baskets, internal baffles, and swivel casters.



X21 is 21 gallon capacity and tank is 9 1/2" High; X30 is 30 gallon capacity and tank is 9 1/2" High; X50 is 50 gallon capacity and tank is 12" high. Motor height exceeds tank by approximately 11" inches.

| Part No. | Vendor No.  | H.P.   | Voltage  | Max. Flow GPM | Price /EA |
|----------|-------------|--------|----------|---------------|-----------|
| 0458656  | X21-IMV08-F | 1/8 HP | 230/460V | 10 GPM        | \$457.73: |
| 0458657  | X30-IMV25-F | 1/4 HP | 230/460V | 25 GPM        | 620.62:   |
| 0458658  | X50-IMV50-F | 1/4 HP | 230/460V | 35 GPM        | 745.29:   |

### IMV Immersion Style Pumps for OEM Machine Tools

**IMV Immersion Style Pumps for OEM Machine Tools-**dependable, economical drop-in replacements for OEM Machine tool pumps. Totally enclosed motors sit on tank with no bearings, seals or packing immersed in fluid. Perfect for fine contaminants. Compatible with Guster, AMT, Teel, Fuji, Mitsubishi, Toshiba, Hitachi and Yaskawa.



| Part No. | Vendor No. | H.P.   | Voltage  | Outlet Fitting | Price /EA |
|----------|------------|--------|----------|----------------|-----------|
| 0458633  | IMV08-E    | 1/8 HP | 115/230V | 3/8" NPT       | \$92.40:  |
| 0458634  | IMV08-F    | 1/8 HP | 230/460V | 3/8" NPT       | 84.70:    |
| 0458635  | IMV25-E    | 1/4 HP | 115/230V | 1/2" NPT       | 177.10:   |
| 0458636  | IMV25-F    | 1/4 HP | 230/460V | 1/2" NPT       | 169.40:   |
| 0458637  | IMV50-E    | 1/2 HP | 115/230V | 3/4" NPT       | 296.45:   |
| 0458638  | IMV50-F    | 1/2 HP | 230/460V | 3/4" NPT       | 287.98:   |
| 0458639  | IMV75-F    | 3/4 HP | 230/460V | 1" NPT         | 349.58:   |
| 0458640  | IMV100-F   | 3/4 HP | 230/460V | 1" NPT         | 414.26:   |

### IMS Suction Style Pumps for OEM Machine Tools

**IMS Suction Style Pumps for OEM Machine Tools-**dependable, economical drop-in replacements for OEM Machine tool pumps. Can be located away from tank and piped to pick up coolant. Not suitable for fine contaminants. Compatible with Gusher, AMT, Teel, Fuji, Mitsubishi, Toshiba, Hitachi and Yaskawa.

| Part No. | Vendor No. | H.P.   | Max. Flow GPM | Price /EA |
|----------|------------|--------|---------------|-----------|
| 0458641  | IMS08-E    | 1/8 HP | 10 GPM        | \$113.19: |
| 0458642  | IMS08-F    | 1/8 HP | 10 GPM        | 105.49:   |
| 0458643  | IMS25-E    | 1/4 HP | 25 GPM        | 180.95:   |
| 0458644  | IMS25-F    | 1/4 HP | 25 GPM        | 173.25:   |
| 0458645  | IMS50-E    | 1/2 HP | 35 GPM        | 312.62:   |
| 0458646  | IMS50-F    | 1/2 HP | 35 GPM        | 304.92:   |
| 0458647  | IMS75-F    | 3/4 HP | 50 GPM        | 365.75:   |
| 0458648  | IMS100-F   | 1 HP   | 50 GPM        | 431.97:   |

### High Pressure Multi-Stage Machine Tool Coolant Pumps

**High Pressure Multi-Stage Machine Tool Coolant Pumps-**MSPR pumps offer steady, pulsation free coolant delivery up to 180 psi, perfect for "through the tool" applications. Can be mounted horizontally or vertically, and has cast iron head and frame with stainless steel lower shell.



| Part No. | Vendor No.  | H.P.   | Voltage  | Max. Flow GPM | Price /EA |
|----------|-------------|--------|----------|---------------|-----------|
| 0458649  | MSPR5-1.0F  | 1 HP   | 230/460V | 38 GPM        | \$649.40: |
| 0458650  | MSPR7-1.5F  | 1.5 HP | 230/461V | 38 GPM        | 786.24:   |
| 0458651  | MSPR9-2.0F  | 2 HP   | 230/462V | 38 GPM        | 893.59:   |
| 0458652  | MSPR13-3.0F | 3 HP   | 230/463V | 38 GPM        | 1062.18:  |

## Cutting and Metalworking Fluids

# FASTENAL®

### SharpCool Band Saw Biostable Medium to Heavy-Duty Synthetic

Our metalworking fluids cool, lubricate and provide anti-weld characteristics. These fluids increase cutting action and allow for finer finishes. By dissipating heat quickly, tool life increases and dimensional accuracy is maintained.

#### Applications

- Heavy-duty sawing or medium-duty machining and grinding of all metals
- Exceptional biostability provides long-term sump life when properly maintained
- Non-chlorinated EP package provides extended tool life
- Works well in hard-water environments
- Transparent solution allows for easy viewing of workpiece
- Provides excellent rust protection and minimal foaming
- Provides superior way-lube rejection, leading to cleaner coolant and longer sump life

#### Materials Compatibility

- Good for all ferrous metals
- Provides excellent rust protection
- Suitable for machining aluminum and other alloys

#### Dilution ratio

- 10:1 up to 30:1, depending on application

**Applications:** SharpCool machining Fluids perform well in a variety of machining, Turning, Gear Cutting, Tapping, CNC Machining, Boring, Drilling, Sawing, Milling, Broaching and many other applications!



| Part No. | Pkg. Qty.     | Price /Each |
|----------|---------------|-------------|
| 0301881  | 5-Gallon Pail | \$121.49    |

## Cutting and Metalworking Fluids Cont.

### FASTENAL® SharpCool Water Soluble

General purpose chlorinated soluble oil for all machining applications. Suited to all types of machining, this fluid can be used on all metals except titanium. Compatible with CNC machining. Effective E.P. additive helps extend tool life. Special additives protect neoprene seals in machines. Long sump life reduces cleaning and disposal. Contains rust-inhibiting agents. Pleasant odor. Light Blue dilution color



| Part No. | Pkg. Qty.     | Price /Each |
|----------|---------------|-------------|
| 304038   | 5-Gallon Pail | \$126.41    |

| Dilution | Refractive Index |
|----------|------------------|
| 10:1     | 11.0             |
| 20:1     | 5.6              |
| 30:1     | 3.1              |

### SharpCool Supreme NC Heavy-Duty Biostable Water-Soluble Oil

SharpCool Supreme NC provides stable pH performance, and resists bacteria and fungal growth that leads to rancidity and unpleasant odors. SharpCool Supreme NC does not contain chlorine, active sulfur or phenols. Excellent for use on all metals (including titanium). Contains highly refined mineral oils which leave a protective film on machine slides, ways and fixtures. Can be used for the most difficult machining applications, such as broaching, and also for light machining operations.



| Part No. | Pkg. Qty.     | Price /Each |
|----------|---------------|-------------|
| 304051   | 5-Gallon Pail | \$118.36    |

| Dilution | Refractive Index |
|----------|------------------|
| 10:1     | 11.4             |
| 20:1     | 5.6              |
| 30:1     | 3.8              |

### SharpCool Supreme Heavy-Duty Biostable Water-Soluble Oil

Contains all the benefits of SharpCool Supreme NC plus an enhanced E.P. package for heavy-duty machining applications. Our most versatile machining fluid. Use in applications ranging from the more difficult, such as broaching, to light machining. Formulated to provide stable pH performance and resist the bacteria and fungal growth that leads to rancidity and unpleasant odors. Excellent for use on all metals, except titanium. Contains chlorinated E.P. additives for tough machining applications and even longer tool and sump life. Highly-refined mineral oil leaves a protective film on machine slides, ways, fixtures and parts. Milky White dilution color



| Part No. | Pkg. Qty.     | Price /Each |
|----------|---------------|-------------|
| 304036   | 5-Gallon Pail | \$134.02    |

| Dilution | Refractive Index |
|----------|------------------|
| 10:1     | 11.4             |
| 20:1     | 5.7              |
| 30:1     | 3.8              |

### SharpCool Semi-Synthetic

Provides excellent lubricity and sump life in both machining and grinding. Suited for a wide variety of machining and even some light grinding. Can be used on many metals, including aluminum. SharpCool Semi-Synthetic provides exceptional lubrication and leaves a protective oil film on machines and parts for rust protection.



| Part No. | Pkg. Qty.     | Price /Each |
|----------|---------------|-------------|
| 304042   | 5-Gallon Pail | \$119.49    |

| Dilution | Refractive Index |
|----------|------------------|
| 10:1     | 4.6              |
| 20:1     | 2.3              |
| 30:1     | 1.7              |

### SharpCool Synthetic

General purpose machining and grinding fluid for ferrous metals. Intended for use on ferrous metals only. Contains no petroleum, mineral or vegetable oils and is completely soluble in hard or soft water. Biodegradable for easy and inexpensive disposal. Superior rust inhibition for machine protection. Transparent fluid allows visibility of work. Requires no degreasing. Washes off quickly in water.



| Part No. | Pkg. Qty.      | Price /Each |
|----------|----------------|-------------|
| 304040   | 5-Gallon Pail  | \$98.34     |
| 304041   | 55-Gallon Drum | 704.66:     |

| Dilution | Refractive Index |
|----------|------------------|
| 10:1     | 3.0              |
| 20:1     | 1.6              |
| 30:1     | 1.2              |

### SharpCool Grinding Fluid

Designed for surface grinding and abrasive belt grinding of ferrous metals. SharpCool Grinding Fluid is transparent, non-foaming, biodegradable and allows for the rapid settling of residues. Helps eliminate wheel build-up and ensures a finer finish. Will not weaken the bond, load, gum or glaze grinding wheels. Excellent rust protection.



| Part No. | Pkg. Qty.     | Price   |
|----------|---------------|---------|
| 304044   | 5 Gallon Pail | \$95.38 |

| Dilution | Refractive Index |
|----------|------------------|
| 10:1     | 4.2              |
| 20:1     | 2.2              |
| 30:1     | 1.5              |

## Valenite®

### Semi-Synthetic

- Improved Formulas
- Increased performance

| Part No. | Description   | Price /Ea |
|----------|---|-----------|
| 3122797  | VP700-005B 5GalBlueValCOOL<br>GenPurpSemi-SynthMachiningCoolant         | \$97.05   |
| 3122799  | VP700-055B 55GalBlue ValCOOL<br>Purpose GenPurp Semi-SynthMachinCoolant | 966.67    |
| 3122805  | VP777-005B 5GalBlue ValCOOLGen<br>Purpose Semi-Synthetic Coolant        | 164.80    |
| 3122807  | VP777-055B 55GalBlue ValCOOL<br>GenPurposeSemi-SyntheticCoolant         | 1706.48   |
| 3122813  | VP800-005B 5GalBlue ValCOOL<br>HvyDuty ChlorSemi-SynthCoolant           | 122.32    |
| 3122815  | VP800-055B 55GalBlue ValCOOL<br>HvyDutyChlorSemi-SynthCoolant           | 1236.58   |
| 3122857  | VP700-005B 5GalBlue ValCOOL<br>HvyDutyNonChlorSemiSynthCoolant          | 122.32    |
| 3122859  | VPTech-055B 55GalBlue ValCOOL<br>HvyDutyNonChlorSemiSynthCoolant        | 1236.58   |

### Synthetic

| Part No. | Description  | Price /Ea |
|----------|--|-----------|
| 3122821  | VP900-005B 5GalBlue ValCOOL<br>GenPurp SyntheticCoolant                  | \$167.75  |
| 3122823  | VP900-055B 55GalBlue ValCOOL<br>GenPurp SyntheticCoolant                 | 1733.34   |
| 3122829  | VP910-005B 5GalBlue ValCOOL<br>GeneralPurpose Med Duty Synthetic Coolant | 142.48    |
| 3122831  | VP910-055B 55GalBlue ValCOOL<br>GeneralPurpose Med Duty SyntheticCoolant | 1454.86   |
| 3122837  | VP920-005B 5GalBlue ValCOOL<br>GeneralPurpose Synthetic Coolant          | 88.99     |
| 3122839  | VP920-055B 55GalBlue ValCOOL<br>GeneralPurpose SyntheticCoolant          | 866.67    |
| 3122845  | VP935-005B 5GalBlue ValCOOL<br>HvyDutyMultiPurpSyntheticCoolant          | 193.02    |
| 3122847  | VP935-055B 55GalBlue ValCOOL<br>HvyDutyMultiPurpSyntheticCoolant         | 2014.55   |
| 3122853  | VP940-005B 5GalBlue ValCOOL<br>HvyDutyMultiPurpSyntheticCoolant          | 186.04    |
| 3122855  | VP940-055B 55GalBlue ValCOOL<br>HvyDutyMultiPurposeSynthCoolant          | 1936.58   |



### Ultra Lube High Performance High Viscosity Super concentrated no run formula



Super concentrated no run formula. Clings to vertical surfaces for continual lubrication. Rich gold color and thick consistency gives a quality appearance not available with thin runny fluids. Virtually smoke free in even most heat prone applications. Contains no ozone depleting substances. This fluid will extend tool life and yield a super smooth machined finish.

| Part No. | Size   | Case Qty. | Weight (lbs/case) | Price /Each |
|----------|--------|-----------|-------------------|-------------|
| 0301864  | 4 oz.  | 12        | 4.4 lbs.          | \$4.36      |
| 0301865  | 16 oz. | 12        | 15 lbs.           | 14.00       |

# CUTTING & METALWORKING FLUIDS

## Cutting and Metalworking Fluids Cont.



### Mike-O-Lube 100 Heavy-Duty EP Cutting Lubricant

A heavy-duty fluid fortified with extreme pressure additives for difficult machining and stamping of ferrous and nonferrous materials. This product provides excellent lubricity and boundary film lubrication. Significantly increases tool and die life and greatly reduces wear.



Designed to be used with micro-lubricant applicators.

- Natural base oil
- Excellent lubricity
- Heavy-duty applications
- Extreme pressure additives
- Strong boundary film lubrication
- Low vapor pressure & non-objectionable odor

| Part No. | Size     | Case Qty. | Price /Each |
|----------|----------|-----------|-------------|
| 0316624  | 1 Gallon | 4         | \$97.68     |

### Mike-O-Lube 110 Heavy-Duty Non-Chlorinated EP Cutting Lubricant

A heavy-duty fluid fortified with non-chlorinated extreme pressure additives. Use for difficult machining and stamping of ferrous and nonferrous materials including aluminum and titanium. This product provides excellent lubricity and boundary film lubrication. Significantly increases tool and die life and greatly reduces wear.

Designed to be used with micro-lubricant applicators.

- Natural base oil
- Excellent lubricity
- Heavy-duty applications
- Non-chlorinated EP additives
- Strong boundary film lubrication
- Low vapor pressure & non-objectionable odor

| Part No. | Size     | Case Qty. | Price /Each |
|----------|----------|-----------|-------------|
| 0316625  | 1 Gallon | 4         | \$100.50    |

### Mike-O-Lube 200 Heavy-Duty Cutting Lubricant

A medium to heavy-duty natural based oil for machining and stamping ferrous and non-ferrous materials. This product provides excellent lubricity and boundary film lubrication. Significantly increases tool and die life and greatly reduces wear.



Applications:

Designed to be used with micro-lubricant applicators. This natural based product is non-toxic and can be used in ferrous and non-ferrous machining, drilling, tapping, and milling operations. Will not stain most aluminum.

| Part No. | Size     | Case Qty. | Price /Each |
|----------|----------|-----------|-------------|
| 0316626  | 1 Gallon | 4         | \$86.22     |

### Mike-O-Lube 300 Medium-Duty Cutting Lubricant

A medium-duty fluid for machining ferrous and non-ferrous materials. The product is very effective in general metal cutting operations, and also for use in woodworking applications. Significantly increases tool life and greatly reduces wear.



Designed to be used with micro-lubricant applicators.

- Natural base oil
- Excellent lubricity
- Medium-duty applications
- Excellent wetting properties
- Low vapor pressure & non-objectionable odor

| Part No. | Size     | Case Qty. | Price /Each |
|----------|----------|-----------|-------------|
| 0316627  | 1 Gallon | 4         | \$55.76     |

### Mike-O-Lube 400 Synthetic Cutting Lubricant

A synthetic water-based fluid for general purpose machining of ferrous and non-ferrous materials. The product provides excellent cooling properties with good lubricity. Will increase tool life and reduce wear.



Designed to be used with micro-lubricant applicators.

- Water-based synthetic fluid
- Excellent cooling
- Medium-duty applications
- For use on all metals
- Cleans easily with water

| Part No. | Size     | Case Qty. | Price /Each |
|----------|----------|-----------|-------------|
| 0316628  | 1 Gallon | 4         | \$29.46     |

### Mike-O-Lube 600 Medium-Duty Non-Staining Cutting Lubricant

A medium duty synthetic cutting fluid for machining and stamping of non-ferrous materials. This product provides excellent lubrication. Significantly increases tool and die life and greatly reduces wear.

Applications:

Designed to be used with micro-lubricant applicators. This fluid is designed for use in non-ferrous machining, drilling, tapping, and milling operations. Will not stain during post heat treating of nonferrous metals. Does not stain aluminum.

| Part No. | Size     | Case Qty. | Price /Each |
|----------|----------|-----------|-------------|
| 0316629  | 1 Gallon | 4         | \$75.64     |

### Mike-O-Lube 610 Heavy-Duty Non-Staining EP Cutting Lubricant

A heavy-duty fluid fortified with extreme pressure additives for use on difficult machining on non-ferrous materials including aluminum and titanium. This product provides excellent lubrication. Significantly increases tool and die life and greatly reduces wear. Use for high speed cutting, tapping, drilling, reaming, sawing, drawing and stamping on non-ferrous metals. It will not stain during post heat treating of non-ferrous metals. However, always test scrap parts before using.



Designed to be used with micro-lubricating applicators.

- Works well on aluminum
- Excellent lubricity
- Heavy-duty applications
- Non-staining during post heat treating of non-ferrous metals
- Non-chlorinated EP additives
- Low vapor pressure & non-objectionable odor

| Part No. | Size     | Case Qty. | Price /Each |
|----------|----------|-----------|-------------|
| 0316630  | 1 Gallon | 4         | \$76.18     |

### Mike-O-Lube 680 Aluminum Sawing & Cutting Lubricant

A sawing and cutting lubricant for use on aluminum. This product provides excellent lubrication. Will increase sawblade and tool life and reduce wear. It will not stain during post heat treating of non-ferrous metals. However, always test scrap parts before using.



Designed to be used with micro-lubricant applicators.

- Designed for sawing aluminum
- Excellent lubricity
- Medium to heavy-duty applications
- Non-staining during post heat treating of non-ferrous metals
- Non-chlorinated EP additives
- Low vapor pressure & non-objectionable odor

| Part No. | Size     | Case Qty. | Price /Each |
|----------|----------|-----------|-------------|
| 0316631  | 1 Gallon | 4         | \$54.18     |

### Pump Spray Lubricant

An environmentally safe lubricant for use on ferrous and non-ferrous materials. Convenient pump spray bottle.



Applications:

Use for drilling, tapping, sawing and other machining applications.

| Part No. | Size    | Case Qty. | Price /Each |
|----------|---------|-----------|-------------|
| 0316634  | 8 ounce | 12        | \$7.56      |



## Cutting and Metalworking Fluids Cont.



### Stick Lubricant

A clean and safe lubricant in an easy to use push-up stick. For use on ferrous and non-ferrous materials. Reduces heat build-up in abrasive belt, disc and grinding wheel operations.

Applications:

Use on abrasive belts, discs, and wheels and for drilling, tapping, sawing and other machining applications.



| Part No. | Size                 | Case Qty. | Price /Each |
|----------|----------------------|-----------|-------------|
| 0316637  | 2.2 oz Push Up Stick | 24        | \$6.50      |
| 0316638  | 13 oz Push Up Tube   | 24        | 13.92       |

### Block Lubricant

A clean and safe solid block lubricant for use on ferrous and non-ferrous materials. Reduces heat build-up in abrasive belt, abrasive disc, and cutting tool operations.



Applications:

Use on abrasive belts and discs and for drilling, tapping, sawing and other machining applications.

| Part No. | Size               | Case Qty. | Price /Each |
|----------|--------------------|-----------|-------------|
| 0316636  | 2.6 oz Solid Block | 24        | \$5.96      |

### Paste Lubricant

A clean and safe gel-paste lubricant for use on ferrous and non-ferrous materials.

Applications:

Use for drilling, tapping, reaming and other machining applications. Works great in horizontal applications.



| Part No. | Size    | Case Qty. | Price /Each |
|----------|---------|-----------|-------------|
| 0316635  | 8 ounce | 24        | \$12.32     |

### Mike-O-Cut No. 87 Extreme Duty Tapping Fluid

An extreme duty tapping and drilling fluid. It is thick like honey and sticks to the tap throughout the operation.

Applications:

It is ideal for tapping and drilling stainless steel, carbon steel, inconel, monel, hastalloy, titanium, aluminum and other alloys and exotics.



| Part No. | Size     | Case Qty. | Price /Each |
|----------|----------|-----------|-------------|
| 0316633  | 16 ounce | 12        | \$11.16     |
| 0316649  | 1 Gallon | 4         | 64.86       |
| 0316650  | 5 Gallon | 1         | 307.12      |

### TD Foamy Aerosol Tapping Fluid

An extreme duty tapping and drilling fluid designed for ease of application. Its excellent foaming action penetrates deep into the cut to extend tap life and promote a superior finish.

Applications:

This high performance product works well on ferrous and non-ferrous materials and can be applied before or during the cutting operation.



| Part No. | Size                         | Case Qty. | Price /Each |
|----------|------------------------------|-----------|-------------|
| 0316651  | 20 oz Aerosol (17oz Net Wt.) | 12        | \$12.96     |

### Wax Stick Lubricant

An innovative, multi-purpose lubricant which effectively removes heat and lubricates while withstanding tremendous pressures. It is often used as a replacement for tapping fluids and cutting oils. It is clean and safe and is ideal for metal sawing, drilling, tapping, pipe threading, and as a cement form releasing agent.

- Safe for the environment
- Greatly extends tap and drill life
- Unaffected by heat from friction
- Improves finish and size
- Replaces petroleum cutting fluids



| Part No. | Size                             | Case Qty. | Price /Each |
|----------|----------------------------------|-----------|-------------|
| 0316681  | 16 oz Push Up Tube Wax Lubricant | 24        | \$11.20     |

### Extreme Stamp Heavy-Duty Stamping Lubricant

An extreme-duty stamping, drawing, and machining fluid for use on ferrous and non-ferrous materials. This product provides excellent lubrication. Significantly increases tool and die life and greatly reduces wear. It will not stain during post heat treating of non-ferrous metal. However, always test scrap parts before using.

Designed to be used with micro-lubricant applicators.

- Designed for stamping & drawing
- Excellent lubricity
- Heavy-duty applications
- Non-staining during post heat treating of non-ferrous metals
- Non-chlorinated EP additives
- Low vapor pressure & non-objectionable odor
- Easy water cleanup



| Part No. | Size     | Case Qty. | Price /Each |
|----------|----------|-----------|-------------|
| 0316632  | 1 Gallon | 4         | \$58.48     |

### Coolant Premixer

Designed to premix coolant concentrate with water at the correct proportion. The unit threads into the 2" or 3/4" bung of the concentrate drum and a water hose is connected to it. When the water is turned on, the coolant concentrate is siphoned from the drum and mixed with the water at a predetermined ratio. The ratio is set by the metering tip selected.



| Part No. | Size | Case Qty. | Price /Each |
|----------|------|-----------|-------------|
| 0316644  | Each | 1         | \$208.94    |

### Refractometer

An industrial fluids testing device that will quickly and accurately measure the concentrate to water ratio of metalworking coolants, parts cleaners, chromating solutions and many other types of aqueous based solutions and emulsions.



| Part No. | Size | Case Qty. | Price /Each |
|----------|------|-----------|-------------|
| 0316645  | Each | 1         | \$248.42    |

**COOLANT SOLUTIONS**

- Cutting Fluids
- Cleaners & Degreasers
- Metal Protective Solutions

ASHBURN  
Cut - Clean - Protect



# CUTTING AND METALWORKING FLUIDS & MAGIC FLUIDS

## Cutting and Metalworking Fluids Cont.



### Disk Skimmer

Manufactured to be an extremely efficient oil skimmer. This skimmer removes approximately 1-1/2 gallons of tramp oil per hour. Comes with a 115/1/60, 6 rpm, 0.65 amp permanent magnet motor and a 12 inch tough plastic disk. Disk has 4 inch reach below motor. Will help prevent rancidity and reduce the overall costs of managing your metal-working fluids.

- Greatly extends sump life
- Industrial quality and design
- Helps prevent coolant rancidity
- Reduces smoke and mist
- Removes up to 1-1/2 gallons of tramp oil per hour



| Part No. | Size             | Price /Each |
|----------|------------------|-------------|
| 0316643  | 12" Disk Skimmer | \$270.12    |

### Oil Skimmer

Manufactured to be an efficient, reliable, and economical belt skimmer. The Oil Skimmer comes with a quiet, permanent magnet motor, stainless steel housing, wiper and trough, and steel stabilizing bar. The drive pulley is nylon and the tail pulley is steel.

Standard skimmers have a polyurethane belt and can be used in fluids up to 120°F. The high temperature skimmer has a stainless steel belt for use in fluids over 120°F.

Due to these quality components and design, the skimmer will provide trouble free service and reduce the overall cost of managing metalworking fluids.

- Greatly extends sump life
- Industrial quality and design
- Helps prevent coolant rancidity
- Reduces smoke and mist
- Removes up to 1 quart of tramp oil per hour

| Part No. | Size                                   | Price /Each |
|----------|--|-------------|
| 0316640  | 12" Depth Oil Skimmer                  | \$296.94    |
| 0316641  | 12" Depth High Temperature Oil Skimmer | 389.68      |
| 0316642  | 18" Depth Oil Skimmer                  | 345.50      |

## Magic Fluids



### Relton Option 1 Metal-Cutting Fluid

- Option 1 leaves no oily residue
- Water-based
- No 1,1,1- trichloroethane or other ozone-depleting chemicals
- Cleans up with clean dry cloth or water
- Great for use in computer clean rooms, hospitals or when a weld operation follows machining operations



| Part No. | Description                            | Price /Ea |
|----------|--|-----------|
| 63098    | 1 Pint Relton Option 1 Cutting Fluid   | \$17.53   |
| 63099    | 1 Gallon Relton Option 1 Cutting Fluid | 55.09     |

\*Not for use on metals that are water reactive, such as magnesium

### Relton New Rapid Tap All-Metal Cutting Fluid and Paste

- Greatly extended tool life
- Super-fine machined finish in operation after operation
- Anti-mist protection for a healthier work environment
- No special labeling or reporting
- Excels in tough materials
- Contains no 1,1,1- trichloroethane or other zone-depleting chemicals



| Part No. | Description  | Price /Ea |
|----------|--|-----------|
| 63085    | 4 oz. Relton New Rapid Tap Heavy Duty Cutting Fluid    | \$4.09    |
| 63086    | 1 Pint Relton New Rapid Tap Heavy Duty Cutting Fluid   | 13.04     |
| 63087    | 1 Gallon Relton New Rapid Tap Heavy Duty Cutting Fluid | 63.74     |
| 63088    | 5 Gallon Relton New Rapid Tap Heavy Duty Cutting Fluid | 251.53    |

### Relton A-9 Aluminum-Cutting Fluid

- Eases all operations on aluminum: milling, broaching, drilling, threading, tapping, reaming, sawing, etc.
- Contains anti-mist component for a healthier work environment
- Contains a scientific blend of chemicals that attach themselves to aluminum surfaces, forming an extreme-pressure boundary lubricant between tool and work surface

| Part No. | Description  | Price /Ea |
|----------|--------------|-----------|
| 63106    | A-9 4 oz.    | \$4.09    |
| 63107    | A-9 Pint     | 12.28     |
| 63108    | A-9 Gallon   | 83.26     |
| 63109    | A-9 5 Gallon | 252.36    |

### Relton Rel Saw Band-Saw Fluid Concentrate

- Improves blade life
- Stable over a wide variety of water conditions
- Promotes cleaner-running machines compared to soluble cuts
- Reduces machine wear
- Long emulsion life
- Contains rust and corrosion inhibitors
- Fortified with boundary lubricants



| Part No. | Description  | Price /Ea |
|----------|--|-----------|
| 3126563  | 1 Gallon Bottle REL SAW Concentrate Band Saw Fluid | \$26.78   |
| 3126564  | 5 Gallon Pail REL SAW Concentrate Band Saw Fluid   | 114.45    |

### Relton Stick-Kut™ Lubricating Stick Wax

- Safe and effective lubricant for grinding wheels, sanding belts and saw blades
- Eliminates head build up and belt loading
- Extends wheel life
- Provides smooth, cool cutting
- Reduces loading, stops binding, and prevents burring



| Part No. | Description                            | Price /Ea |
|----------|--|-----------|
| 3126544  | 15 oz. Stick STICK-KUT Lubricating Wax | \$8.93    |

### TCO-14™ Dark Thread-Cutting Oil

- Ready to cut clean, smooth threads on all pipe materials
- Extreme-pressure additive for anti-weld characteristics
- Excellent protection of tools and machined parts against corrosion
- Contains anti-mist component for a healthier work environment



| Part No. | Description                                      | Price /Ea |
|----------|--|-----------|
| 3126553  | 1 Gallon Bottle TCO-14 Dark Thread Cutting Fluid | \$19.16   |
| 3126554  | 5 Gallon Pail TCO-14 Dark Thread Cutting Fluid   | 85.05     |

### TCO-16™ Light Thread-Cutting Oil

Operationally interchangeable with TCO-14 (Dark)



| Part No. | Description                                       | Price /Ea |
|----------|---|-----------|
| 3126555  | 1 Gallon Bottle TCO-16 Light Thread Cutting Fluid | \$19.16   |
| 3216556  | 5 Gallon Pail TCO-16 Light Thread Cutting Fluid   | —         |

# ANCHORLUBE G-771 & LAYOUT FLUIDS AND MARKING PRODUCTS

## Anchorlube G-771

### Anchorlube G-771

Specially designed for problem metal-working jobs. Its the best product available for stainless, high carbon, high chrome, cast iron, monel, etc. Also the solution for difficult metal working operations such as along welds on carbon steel. It can be used for drilling, tapping, sawing, spot facing, counterboring, milling, fly-cutting, seat forming, engraving, broaching, drawing, piercing, punching, hole extruding and many others. May also be used on non-ferrous metals such as brass and aluminum.



| Part No. | Description          | Price /Each |
|----------|----------------------|-------------|
| 0304080  | 8 oz. Plastic Bottle | \$7.40      |
| 0304083  | 1-gal. Plastic Jug   | 29.46       |

## Layout Fluids and Marking Products



### Steel Blue Layout Fluids

Depend on Dykem® Layout Fluids to scribe clear, sharp and precise lines.

- Toluene free formula for workers' safety
- Provides a uniform, deep color that prevents glare
- Dries in minutes
- Provides an extremely thin coating which adds practically no thickness to the work piece material
- Remains flexible without cracking and chipping
- Reduces eyestrain



| Part No. | Model No. | Product   | Size                      | Price /Each |
|----------|-----------|-----------|---------------------------|-------------|
| 0303110  | 80000     | (SP-1100) | Aerosol 16 oz.            | \$12.60     |
| 0303111  | 80200     | (DX-100)  | Felt Tip Applicator 2 oz. | 6.34        |
| 0303112  | 80400     | (DX-100)  | Brush-In-Cap 8 oz.        | 10.35       |
| 0303113  | 80600     | (DX-100)  | Bottle 930 mL             | 19.12       |
| 0303114  | 80096     | (SP-1196) | Aerosol 16 oz.            | 11.36       |
| 0303116  | 80496     | (DX-296)  | Brush-In-Cap 8 oz.        | 10.48       |
| 0303117  | 80696     | (DX-296)  | Bottle 930 mL             | 17.83       |

### Removers, Cleaners, Thinners, Hi-Spot and Accessories

Remover, cleaner and thinner prepares work piece surfaces. It has been proven that layout fluids and stains adhere better to surfaces that are prepared with this product. Toluene free formula for workers' safety.



- Unique formulation dilutes stains for thinner coatings
- Does not contain toluene, 1,1,1-trichloroethane, chlorofluorocarbons, or chlorinated solvents
- Dries in minutes

| Part No. | Model No. | Product                        | Size           | Price /Each |
|----------|-----------|--------------------------------|----------------|-------------|
| 0303118  | 82038     | Remover & Cleaner              | Aerosol 16 oz. | \$11.61     |
| 0303120  | 82638     | Remover Cleaner Thinner Bottle | 930 mL         | 10.13       |
| 0303122  | 83307     | Hi-Spot Blue (107)             | Tube 0.55 oz.  | 6.75        |

### Valve Action Paint Markers

A general purpose marker that writes on almost any surface and features a medium tip for clear, bold markings. Its quick drying, oil-based paint withstands indoor and outdoor conditions including acid and alkaline rain without fading chipping or losing opacity. The Dykem® Brite-Mark® markers can be used to permanently identify inventory, assemblies, tools, finished product or work in progress while resisting most work related abuses or compounds.

- Makes permanent, bright marks on metal, rubber, plastic, glass, vinyl, concrete, leather, stone, wood and more!
- Valve action mechanism prevents paint in barrel from drying when cap is left off.
- Heavy duty aluminum body with large paint capacity.
- Drying time: 25 to 35 seconds

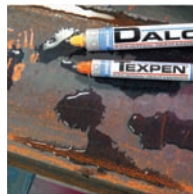


| Part No. | Model No. | Color      | Price /Each |
|----------|-----------|------------|-------------|
| 0303020  | 84001     | Blue       | \$3.65      |
| 0303021  | 84002     | Black      | 3.65        |
| 0303022  | 84003     | White      | 3.65        |
| 0303023  | 84004     | Yellow     | 3.65        |
| 0303024  | 84005     | Orange     | 3.65        |
| 0303025  | 84006     | Red        | 3.65        |
| 0303026  | 84007     | Green      | 3.65        |
| 0325507  | 84009     | Pink       | 4.19        |
| 0325508  | 84051     | Gold       | 4.19        |
| 0325509  | 84050     | Silver     | 4.19        |
| 0325510  | 84019     | Violet     | 4.19        |
| 0325511  | 84008     | Light Blue | 4.19        |

### TEXPEN® Industrial Paint Markers

The TEXPEN® stands out for its distinctive fine, medium and bold oil based paint markings. Its stainless steel ball valve action tip writes through oil, grease and underwater without losing legibility or brightness even in extreme weather conditions.

- Write sharp, defined, bright marks on any surface including metal, plastic, glass, concrete, rubber and more.
- Ergonomically correct marker that enables you to mark at all angles, even upside down.
- Marker retains its shape
- Paint flow is controlled by the bulb at the end of the barrel
- Drying Time: 25 - 35 minutes



| Part No. | Model No. | Color  | Price /Each |
|----------|-----------|--------|-------------|
| 0325512  | 16083     | White  | \$6.00      |
| 0325513  | 16063     | Yellow | 6.00        |
| 0325514  | 16033     | Black  | 6.00        |
| 0325515  | 16013     | Blue   | 6.00        |
| 0325516  | 16023     | Red    | 6.00        |
| 0325517  | 16103     | Orange | 6.00        |
| 0325518  | 16043     | Green  | 6.00        |

### DALO® Industrial Paint Markers

A larger version of the TEXPEN®. Available in Medium and Broad tip sizes.



#### MEDIUM TIP

| Part No. | Model No. | Color  | Price /Each |
|----------|-----------|--------|-------------|
| 0325526  | 26083     | White  | \$7.57      |
| 0325527  | 26063     | Yellow | 7.57        |
| 0325528  | 26033     | Black  | 7.57        |
| 0325529  | 26013     | Blue   | 7.57        |
| 0325530  | 26023     | Red    | 7.57        |
| 0325531  | 26103     | Orange | 7.57        |
| 0325532  | 26043     | Green  | 7.57        |

#### BROAD TIP

| Part No. | Model No. | Color  | Price /Each |
|----------|-----------|--------|-------------|
| 0325519  | 26084     | White  | \$7.57      |
| 0325520  | 26064     | Yellow | 7.57        |
| 0325521  | 26034     | Black  | 7.57        |
| 0325522  | 26014     | Blue   | 7.57        |
| 0325523  | 26024     | Red    | 7.57        |
| 0325524  | 26104     | Orange | 7.57        |
| 0325525  | 26044     | Green  | 7.57        |

### SUDZ OFF® Detergent Removable Markers

SUDZ OFF® and SUDZ OFF® 44 are markers perfect for temporary writing on non-treated, non-painted metal surfaces which require ink that is water resistant. Marks can be removed with detergents with a pH of 10 or higher. The SUDZ OFF® 44 features a screw cap and a threaded end that can be screwed into a jig or apparatus for a continuous identification application.

- Ideal for quality control
- Interchangeable and replaceable tips make the pen more practical and longer lasting
- No "ghosting" occurs when removed with detergent
- Drying Time: 15 - 20 seconds



#### SUDZ OFF®

| Part No. | Model No. | Color  | Price /Each |
|----------|-----------|--------|-------------|
| 0325538  | 91985     | Black  | \$4.57      |
| 0325539  | 91938     | Blue   | 4.57        |
| 0325540  | 91371     | Green  | 4.57        |
| 0325541  | 91939     | Red    | 4.57        |
| 0325542  | 91146     | White  | 4.57        |
| 0325543  | 91694     | Yellow | 4.57        |

#### SUDZ OFF® 44

| Part No. | Model No. | Color  | Price /Each |
|----------|-----------|--------|-------------|
| 0325549  | 44985     | Black  | \$5.43      |
| 0325550  | 44938     | Blue   | 5.43        |
| 0325551  | 44939     | Red    | 5.43        |
| 0325552  | 44694     | Yellow | 5.43        |
| 0325553  | 44371     | Green  | 5.43        |
| 0325554  | 44146     | White  | 5.43        |

The : symbol after a price denotes that it is a Direct Ship Product (DSP) and shipping, availability & lead times may vary.

# LAYOUT FLUIDS & MARKING PRODUCTS

## Layout Fluids and Marking Products Cont.



### RINZ OFF® Water Removable Markers

RINZ OFF® and RINZ OFF® 44 are markers perfect for temporary writing on non-treated, non-painted metal surfaces which require ink that can be removed with water. The RINZ OFF® 44 features a screw cap and a threaded end that can be screwed into a jig or apparatus for a continuous identification application.

- Ideal for quality control
- Interchangeable and replaceable tips make the pen more practical and longer lasting
- No "ghosting" occurs when removed marks are painted over
- Drying Time: 15 - 20 seconds



#### RINZ OFF®

| Part No. | Model No. | Color  | Price /Each |
|----------|-----------|--------|-------------|
| 0325533  | 91109     | Black  | \$4.57      |
| 0325534  | 91105     | Blue   | 4.57        |
| 0325535  | 91108     | Green  | 4.57        |
| 0325536  | 91106     | Red    | 4.57        |
| 0325537  | 91757     | Yellow | 4.57        |

#### RINZ OFF® 44

| Part No. | Model No. | Color  | Price /Each |
|----------|-----------|--------|-------------|
| 0325544  | 44109     | Black  | \$5.43      |
| 0325545  | 44105     | Blue   | 5.43        |
| 0325546  | 44108     | Green  | 5.43        |
| 0325547  | 44106     | Red    | 5.43        |
| 0325548  | 44757     | Yellow | 5.43        |

### High Temp Markers

Specially formulated, DYKEM® High Temp markers are ideal for marking on surfaces that are exposed to extreme high temperature environments. Apply to a nonporous surface and the marks will become fused and permanent after heat is applied, even on surfaces that reach up to 2000°F (1093°C).

**High Temp TXP:** Ergonomically correct marker that enables you to mark at all angles, even upside down. The oil based paint withstands extreme weather conditions. Drying Time: 25 -30 minutes

**High Temp 44:** Features a threaded barrel that can be screwed into a jig or apparatus for a continuous identification application. The cap has a clip so the marker is easy to secure to a clip board or in your pocket. Drying Time: 45 - 60 seconds

- Available in 2 barrel sizes
- Ideal for marking on glass, metal and ceramic
- Each color represents a temperature range



#### High Temp TXP

| Part No. | Model No. | Color  | Temperature Range     | Price /Each |
|----------|-----------|--------|-----------------------|-------------|
| 0325567  | 17033     | Black  | 2000°F (1093°C)       | \$8.11      |
| 0325568  | 17013     | Blue   | 2000°F (1093°C)       | 8.11        |
| 0325569  | 17043     | Green  | 2000°F (1093°C)       | 8.11        |
| 0325570  | 17103     | Orange | 800-900°F (426-482°C) | 8.11        |
| 0325571  | 17023     | Red    | 800-900°F (426-482°C) | 8.11        |
| 0325572  | 17083     | White  | 800-900°F (426-482°C) | 8.11        |
| 0325573  | 17063     | Yellow | 800-900°F (426-482°C) | 8.11        |

#### High Temp 44

| Part No. | Model No. | Color  | Temperature Range       | Price /Each |
|----------|-----------|--------|-------------------------|-------------|
| 0325574  | 44250     | Black  | 2000°F (1093°C)         | \$7.24      |
| 0325575  | 44094     | Blue   | 2000°F (1093°C)         | 7.24        |
| 0325576  | 44266     | Green  | 1800°F (982°C)          | 7.24        |
| 0325577  | 44219     | White  | 1550-1650°F (843-899°C) | 7.24        |
| 0325578  | 44424     | Yellow | 800-900°F (426-482°C)   | 7.24        |

### High Purity Markers

DYKEM® High Purity Markers are your answer for marking on stainless steel or any surface where degradation, contamination or other adverse effects are a concern. The formula contains trace amounts of halogens, low melting metals and is low in chlorides. This precise formulation meets or exceeds the requirements of the US Energy and Development Administration's "Nuclear Grade" for black, red, yellow, and white inks.

**High Purity TXP:** Ergonomically correct marker that enables you to mark at all angles, even upside down. The oil based paint withstands extreme weather conditions. Dry Time: 25 - 30 minutes.

**High Purity 44:** Features a threaded barrel that can be screwed into a jig or apparatus for a continuous identification application. The cap has a clip so the marker is easy to secure to a clip board or in your pocket. Dry time: 45 seconds to 1 minute.

- Available in 2 barrel sizes
- Ideal for welding, aircraft industries, marine applications, power plants and automotive plants
- Paint will not contaminate or adversely affect surface being marked



#### High Purity TXP

| Part No. | Model No. | Color  | Price /Each |
|----------|-----------|--------|-------------|
| 0325555  | 17473     | Black  | \$9.08      |
| 0325556  | 14213     | Blue   | 9.08        |
| 0325557  | 10353     | Green  | 9.08        |
| 0325558  | 14203     | Orange | 9.08        |
| 0325559  | 14103     | Red    | 9.08        |
| 0325560  | 17463     | White  | 9.08        |
| 0325561  | 14143     | Yellow | 9.08        |

#### High Purity 44

| Part No. | Model No. | Color  | Price /Each |
|----------|-----------|--------|-------------|
| 0325562  | 44404     | Black  | \$8.25      |
| 0325563  | 44534     | Blue   | 8.25        |
| 0325564  | 44301     | Red    | 8.25        |
| 0325565  | 44729     | White  | 8.25        |
| 0325566  | 44916     | Yellow | 8.25        |

### action marker® HD

The DYKEM® ACTION MARKER® HD is a heavy duty, quick dry, truly permanent ink marker which is xylene free. This valve action marker features a fiber tip and an industrial strength ink ideal for permanent identification of parts or accessories. The clear, crisp, marks resist fading even when subjected to varying, extreme climates. ACTION MARKER® HD won't rub off slick surfaces like plastics and shrink wrap.

- Permanent ink writes on smooth surfaces such as metal, aluminum, steel, plastics and more.
- Marks withstand dirt, oil, grease, extreme weather conditions and even degreasing solvents
- Interchangeable and replaceable tips available
- 6 to 8 times the writing life of most other capillary markers of comparable size
- Drying Time: 15 - 20 seconds

| Part No. | Model No. | Color  | Price /Each |
|----------|-----------|--------|-------------|
| 0325579  | 44179     | Blue   | \$4.69      |
| 0325580  | 44819     | Red    | 4.69        |
| 0325581  | 44203     | Black  | 4.69        |
| 0325582  | 44177     | Green  | 4.69        |
| 0325583  | 44401     | Yellow | 4.69        |
| 0325584  | 44175     | White  | 4.69        |
| 0325585  | 44171     | Orange | 4.69        |





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**STAINLESS STEEL** – 303, 304, 316, 410, 416, 440, 17-4 PH, 17-4 H1150

**ALUMINUM** – 2011, 2024, 6061, 6063, 7075

**BRASS & COPPER ALLOY** – C110, C360, C464, C932, C954

**PLASTIC** – Nylon, Teflon, UHMW, Acetal, Polypropylene, Acrylic

**EXOTIC MATERIAL** – Titanium, Monel, Inconel, Hastaloy

**ACCURACY STOCK • DRILL ROD • EXPANDED METAL • FOILS  
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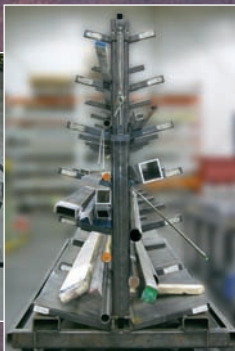
- |                 |                       |
|-----------------|-----------------------|
| ● Round         | ▲ Angle & Pre-Punched |
| ○ Round Tubing  | ⬡ Hex                 |
| — Flat          | — Sheet               |
| ■ Square        | ▭ Rectangular Tubing  |
| □ Square Tubing | ┌ Channel             |

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# LAYOUT FLUIDS AND MARKING, COLD AIR GUN & HAND E-VAC

## Layout Fluids and Marking Products Cont.

Coolants, Fluids & Lubricants



### HI-SPOT BLUE Indicator

DYKEM® Hi-Spot is an intensely blue, soft, uniform paste that spreads easily and evenly to show high spots on bearing. It is most valuable when used on flat bearing surfaces of lathes, planers, milling machines, etc. A thin coating may be left on the surface day in and day out, and will not dry. The film remains "wet" and "transferable" and in condition for months. No nightly clean up or morning re-bluing is necessary.

- Non-drying
- Non-hardening
- Transfers from one surface to another
- Saves valuable time and money in surface scraping work



| Part No. | Model No. | Description   | Price /Each |
|----------|-----------|---------------|-------------|
| 0303122  | 83307     | Tube 0.55 oz. | \$6.75      |

### Cold Air Gun



### Adjustable Cold Air Gun Model 610



Delivers a sub-zero air stream from factory compressed air to speed dry machining and extend tool life. Cold air cooling outperforms mist coolants for coolant-free conditions. Has no moving parts to wear out. Comes complete with flexible nozzle, 5-micron Auto-Drain filter, and a magnetic base for quick easy installation.

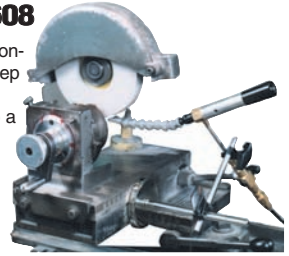
| Part No.      | Price /Each |
|---------------|-------------|
| 302101-131381 | \$385.22    |

**More ITW Dykem in the Chemicals & Paints Section, pages 8-43 and 8-44.**



### Mini Cold Air Gun Model 608

Ideal for dry surface grinding. Provides a contamination-free source of sub-zero air to keep parts and grinding wheels cool. With no moving parts, converts compressed air into a constant stream of cold air to prevent wheel loading and improve tolerances. Comes complete with 5-micron Auto-Drain filter and fully positionable magnetic base.



| Part No.      | Price /Each |
|---------------|-------------|
| 302102-131381 | \$321.26    |

### Hand-E-Vac

#### Hand-E-Vac Model 2006

Versatile industrial cleaning gum amplifies compressed air to create a powerful vacuum. Quickly removes chips, dust, shavings and debris with strong suction that is regulated by an ergonomic trigger. Internal amplifier has no moving parts to break and converts to a blowgun in seconds. Durable, impact-resistant construction.



| Part No.      | Price /Each |
|---------------|-------------|
| 302104-131381 | \$96.36     |

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- Material Type
- Tracing Number

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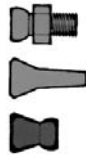
# MODULAR HOSE SYSTEMS & DRILL INDEXES

## Modular Hose Systems



### Modular Hose Systems 1/4" System 1/4" Inside Diameter

Loc-line's unique ball and socket design is fully hand adjustable in both the position and length. Bending doesn't decrease the inside diameter and it won't kink or fatigue like copper tubing. Unlike metal hoses, Loc-line won't damage tool cutters if contact occurs, it is electrically non-conductive, is ideal for use as an EDM flushing hose, and has no internal positioning rod that can break or restrict fluid flow. Repeated positioning is easy and it will stay in position without any springback. Creep due to machine vibration is eliminated. Manufactured in a premium grade acetal copolymer material which is chemically resistant to petroleum products, coolants and most common chemicals. Selected parts are also available in an acid-resistant polyester. A selection of manifolds, valves and a large choice of nozzles and fittings including the new Magnetic Base Manifold proves, adjustability only just started with our original concept. Designed for low-pressure applications. Maximum pressure applications, maximum pressures for the hose system vary with the length of the hose, the diameter of the selected nozzle and bending angles.



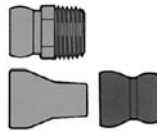
| Part No.      | Vendor No. | Price /Each |
|---------------|------------|-------------|
| 302205-131397 | 40413      | \$12.81     |
| 302206-131397 | 40452      | 31.40       |
| 302228-131397 | 41475      | 17.68       |
| 302232-131397 | 41479      | 25.61       |
| 302207-131397 | 41401      | 8.79        |
| 302208-131397 | 41402      | 5.36        |
| 302209-131397 | 41403      | 5.58        |
| 302210-131397 | 41404      | 5.90        |
| 302223-131397 | 41470      | 7.50        |
| 302224-131397 | 41471      | 7.72        |
| 302225-131397 | 41472      | 7.83        |
| 302213-131397 | 41407      | 8.69        |
| 302212-131397 | 41406      | 5.90        |
| 302229-131397 | 41476      | 11.25       |
| 302230-131397 | 41477      | 9.65        |
| 302221-131397 | 41417      | 5.63        |
| 302222-131397 | 41418      | 5.90        |
| 302214-131397 | 41408      | 8.52        |
| 302215-131397 | 41409      | 6.16        |
| 302216-131397 | 41411      | 6.43        |
| 302217-131397 | 41412      | 6.97        |
| 302218-131397 | 41414      | 7.30        |
| 302219-131397 | 41415      | 7.72        |
| 302220-131397 | 41416      | 8.69        |
| 302231-131397 | 41478      | 8.52        |
| 302233-131397 | 41480      | 7.88        |
| 302234-131397 | 41481      | 11.74       |
| 302235-131397 | 41482      | 13.39       |
| 302277-131397 | 21191      | 13.66       |
| 302278-131397 | 21192      | 14.04       |
| 302279-131397 | 21193      | 14.47       |
| 302280-131397 | 21194      | 12.86       |
| 302291-131397 | 78001      | 16.61       |

### Modular Hose Systems 1/2" System 1/2" Inside Diameter



| Part No.      | Vendor No. | Price /Each |
|---------------|------------|-------------|
| 302236-131397 | 50813      | \$13.39     |
| 302259-131397 | 51832      | 9.59        |
| 302262-131397 | 51835      | 19.94       |
| 302264-131397 | 51837      | 24.91       |
| 302237-131397 | 51801      | 9.11        |
| 302260-131397 | 51833      | 12.81       |
| 302261-131397 | 51834      | 9.91        |
| 302238-131397 | 51806      | 6.43        |
| 302239-131397 | 51802      | 6.70        |
| 302240-131397 | 51803      | 6.70        |
| 302255-131397 | 51828      | 8.47        |
| 302256-131397 | 51829      | 7.62        |
| 302257-131397 | 51830      | 7.62        |
| 302258-131397 | 51831      | 8.42        |
| 302244-131397 | 51807      | 9.27        |
| 302246-131397 | 51809      | 10.24       |
| 302241-131397 | 51804      | 6.70        |
| 302253-131397 | 51826      | 5.79        |
| 302242-131397 | 51805      | 6.70        |
| 302254-131397 | 51827      | 5.79        |
| 302245-131397 | 51808      | 9.27        |
| 302249-131397 | 51822      | 9.27        |
| 302248-131397 | 51821      | 6.86        |
| 302247-131397 | 51811      | 6.81        |
| 302250-131397 | 51823      | 9.27        |
| 302251-131397 | 51824      | 9.44        |
| 302252-131397 | 51825      | 9.49        |
| 302263-131397 | 51836      | 9.59        |
| 302265-131397 | 51838      | 5.79        |
| 302284-131397 | 32091      | 16.72       |
| 302285-131397 | 32092      | 15.12       |
| 302286-131397 | 32093      | 16.61       |
| 302287-131397 | 32094      | 15.27       |
| 302292-131397 | 78002      | 14.20       |

### 3/4" System 3/4" Modular Manifolds



| Part No.      | Vendor No. | Price /Each |
|---------------|------------|-------------|
| 302266-131397 | 60513      | \$16.77     |
| 302267-131397 | 61501      | 12.27       |
| 302269-131397 | 61503      | 7.24        |
| 302268-131397 | 61502      | 7.24        |
| 302271-131397 | 61507      | 12.81       |
| 302270-131397 | 61505      | 7.24        |
| 302273-131397 | 61509      | 7.77        |
| 302274-131397 | 61511      | 11.37       |
| 302275-131397 | 61512      | 11.37       |
| 302272-131397 | 61508      | 8.26        |
| 302276-131397 | 61514      | 8.96        |
| 302283-131397 | 21199      | 18.16       |
| 302282-131397 | 21198      | 48.74       |
| 302281-131397 | 21195      | 6.43        |
| 302289-131397 | 32098      | 48.43       |
| 302288-131397 | 32095      | 7.62        |
| 302290-131397 | 32099      | 18.48       |

## Drill Indexes



### Drill Indexes\*

#### Model 313

For jobber's length fractional drills 1/16 to 1/4 inclusive by 64ths.



| Part No. | Description      | Size                | Price /Each |
|----------|------------------|---------------------|-------------|
| 53902    | 1/16-1/4 x 64ths | 2-1/16 x 4-5/8 x5/8 | \$4.67      |

#### Model 15

For jobber's length fractional drills 1/16 to 1/2 inclusive by 32nds. Single Panel.

| Part No. | Description       | Size          | Price /Each |
|----------|-------------------|---------------|-------------|
| 53903    | 1/16 -1/2 x 32nds | 4 x 7 x 1-1/4 | \$14.74     |

#### Model 20

Wire gauge drills No. 61 to 80.

| Part No. | Description     | Size            | Price /Each |
|----------|-----------------|-----------------|-------------|
| 53904    | No.61 - 80 Inc. | 1-1/2 x 2 x9/32 | \$6.43      |

#### Model 21

For jobber's length fractional drills 1/16 to 3/8 inclusive by 64ths.

| Part No. | Description       | Size          | Price /Each |
|----------|-------------------|---------------|-------------|
| 53905    | 1/16 -3/8 x 64ths | 4 x 6 x 1-1/8 | \$9.76      |

#### Model 26

For letter size drills A to Z inclusive.

| Part No. | Description   | Size          | Price /Each |
|----------|---------------|---------------|-------------|
| 53906    | 26 A - Z Inc. | 4 x 7 x 1-3/4 | \$9.03      |

#### Model 29

For jobber's length fractional drills 1/16 to 1/2 by 64ths inclusive. Decimal equivalents and U.S.S. tap information.

| Part No. | Description       | Size          | Price /Each |
|----------|-------------------|---------------|-------------|
| 53907    | 1/16 -1/2 x 64ths | 4 x 7 x 1-3/4 | \$18.13     |

#### Model 60

For wire gauge drills 1 to 60 inclusive. Decimal equivalents and machine screw tap information.

| Part No. | Description     | Size              | Price /Each |
|----------|-----------------|-------------------|-------------|
| 53908    | No. 1 - 60 Inc. | 3-1/4 x 4-1/2 x 1 | \$11.92     |

#### Model 80

For wire gauge drills 1 to 80 inclusive.

| Part No.      | Description        | Size                     | Price /Each |
|---------------|--------------------|--------------------------|-------------|
| 53909         | 80 No. 1 - 80 Inc. | 3-1/4 x 4-1/2 x15/16     | \$21.96     |
| 303958-130236 |                    | 88SD9/16-1 x1/16th S & D | 32.14       |

#### Model 115

Ideal for keeping all of the most commonly used drills handy. Holds up to 135 drills in one combination case. Indexed for size and decimal equivalents. Holds 115 drills - 29 fractional, 26 letter and 60 wire gauge; 1/16" to 1/2" by 64ths, 1 to 60 A to Z letter size.

| Part No.      | Description      | Price /Each |
|---------------|------------------|-------------|
| 303961-130236 | Sets #60 #26 #29 | \$45.53     |

\* All Indexes sold as is. No cutting tools included.

# DRILL INDEXES & DISPENSERS

## Drill Indexes Cont.



### Norseman Ultradex

- Weather-tight
- Waterproof
- Indestructible



| Part No. | Description | Size               | Price /Each |
|----------|-------------|--------------------|-------------|
| 0323440  | Ultradex    | 1/16"-1/2" x 64ths | \$25.88     |

\* All Indexes sold as is. No cutting tools included.



## Tap/Drill Indexes

Conveniently combines taps with the corresponding tap drill alongside one another.

Model 99 - Part No. 303962-130236

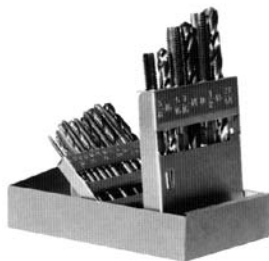
- National Coarse
- Holds sizes: 6-32 tap #36 drill, 8-32 #29, 10-24 #25, 10-32 #21, 1/4"-20 #7, 5/16"-18 #F, 3/8"-16 #5/16, 7/16"-14 #U, 1/2"-13 #27/64. Dimensions: 4" W x 7" D x 1-1/4" H.

Model 18 - Part No. 303963-130236

- National Fine
- Holds sizes: 6-40 tap #33 drill, 8-36 #29, 10-24 #25, 10-32 #21, 1/4"-28 #3, 5/16"-24 #1, 3/8"-24 #Q, 7/16"-20 #25/64, 1/2"-20 #29/64. Dimensions: 4" W x 7" D x 1-1/4" H.

Model 36 - Part No. 303964-130236

- Conveniently combines taps with the corresponding tap drill along side of one another. Includes Model 99, NC and Model 18, NF



| Part No.      | Description          | Price /Each |
|---------------|----------------------|-------------|
| 303962-130236 | NC 6-32 TO1/2-13     | \$13.66     |
| 303963-130236 | NF 6-40 TO1/2-20     | 14.10       |
| 303964-130236 | Models 99 & 18 Comb. | 52.76       |

\* All Indexes sold as is. No cutting tools included.

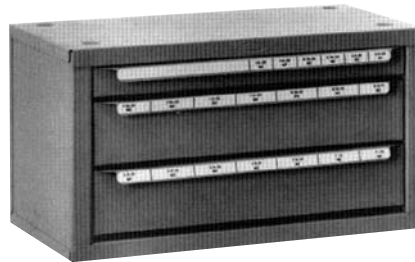
## Drill Dispensers

### Drill Dispensers The Original



| Part No. | Vendor No. | Description  | Price /Each |
|----------|------------|--|-------------|
| 0303970  | 13000      | Holds drills 1/16" to 1/2" by 64ths. Wt. 10-1/4 lbs. | \$118.76    |
| 0303971  | 13025      | Holds drills #1 to #60 Wire Gauge. Wt. 13-1/4 lbs.   | 148.84      |
| 0303972  | 13050      | Holds drills A to Z letter size. Wt. 10-1/4 lbs.     | 128.14      |

### Tap Dispenser The Original New one piece drawer slide for long, useful life.



| Part No. | Vendor No. | Description   | Price /Each |
|----------|------------|---|-------------|
| 0303974  | 13500      | Holds full packages (min) of each size. Wt. 10.5 lbs. | \$115.06    |

#### Holds these sizes:

|  |
|--|
| 1/4"-20NC1/4"-28NF5/16"-18NC5/16"-24NF |
| 3/8"-16NC3/8"-24NF7/16"-14NC7/16"-20NF |
| 1/2"-13NC1/2"-20NF9/16"-12NC9/16"-18NF |
| 5/8"-11NC5/8"-18NF3/4"-10NC3/4"-16NF   |
| 7/8"-9NC7/8"-14NF 1"-8NC 1"-14NF       |

\* All Indexes sold as is. No cutting tools included.

## Decimal Equivalency Chart

Fractional, Number, Letter, and Metric Sizes  
Recommended Tap Drill Sizes Based on Approx. 75% Thread

| Inch | Decimal | Wire | mm  | Tap Sizes Use With Indicated Drills |
|------|---------|------|-----|-------------------------------------|
|      | .0059   | 97   | .15 |                                     |
|      | .0063   | 96   | .16 |                                     |
|      | .0067   | 95   | .17 |                                     |
|      | .0071   | 94   | .18 |                                     |
|      | .0075   | 93   | .19 |                                     |
|      | .0079   | 92   | .20 |                                     |
|      | .0083   | 91   | .21 |                                     |
|      | .0087   | 90   | .22 |                                     |
|      | .0091   | 89   | .23 |                                     |
|      | .0094   |      | .24 |                                     |
|      | .0098   |      | .25 |                                     |
|      | .0102   |      | .26 |                                     |
|      | .0106   |      | .27 |                                     |
|      | .0110   | 85   | .28 |                                     |
|      | .0114   |      | .29 |                                     |
|      | .0118   |      | .30 |                                     |
|      | .0126   |      | .32 |                                     |
|      | .0134   |      | .34 |                                     |
|      | .0138   |      | .35 |                                     |
|      | .0142   |      | .36 |                                     |
|      | .0150   |      | .38 |                                     |
|      | .0157   |      | .40 |                                     |
|      | .0165   |      | .42 |                                     |
|      | .0173   |      | .44 |                                     |
|      | .0177   |      | .45 |                                     |
|      | .0181   |      | .46 |                                     |
|      | .0189   |      | .48 |                                     |
|      | .0197   |      | .50 |                                     |
|      | .0217   |      | .55 |                                     |
|      | .0236   |      | .60 |                                     |
|      | .0256   |      | .65 |                                     |
|      | .0276   |      | .70 |                                     |
|      | .0295   |      | .75 |                                     |
|      | .0315   |      | .80 |                                     |
|      | .0335   |      | .85 |                                     |
|      | .0354   |      | .90 |                                     |
|      | .0374   |      | .95 |                                     |
|      | .0095   | 88   |     |                                     |
|      | .0100   | 87   |     |                                     |
|      | .0105   | 86   |     |                                     |
|      | .0115   | 84   |     |                                     |
|      | .0120   | 83   |     |                                     |
|      | .0125   | 82   |     |                                     |
|      | .0130   | 81   |     |                                     |
|      | .0135   | 80   |     |                                     |
|      | .0145   | 79   |     |                                     |
| 1/64 | .0156   |      |     |                                     |
|      | .0160   | 78   |     |                                     |
|      | .0180   | 77   |     |                                     |
|      | .0200   | 76   |     |                                     |
|      | .0210   | 75   |     |                                     |
|      | .0225   | 74   |     |                                     |
|      | .0240   | 73   |     |                                     |
|      | .0250   | 72   |     |                                     |
|      | .0260   | 71   |     |                                     |
|      | .0280   | 70   |     |                                     |
|      | .0292   | 69   |     |                                     |
|      | .0310   | 68   |     |                                     |
| 1/32 | .0312   |      |     |                                     |
|      | .0320   | 67   |     |                                     |
|      | .0330   | 66   |     |                                     |
|      | .0350   | 65   |     |                                     |
|      | .0360   | 64   |     |                                     |
|      | .0370   | 63   |     |                                     |
|      | .0380   | 62   |     |                                     |
|      | .0390   | 61   |     |                                     |

# DECIMAL EQUIVALENCY CHARTS

## Decimal Equivalency Chart Cont.

| Inch  | Decimal | Wire | mm    | Tap Sizes Use With Indicated Drills |
|-------|---------|------|-------|-------------------------------------|
| 3/64  | .0469   |      |       | #0-80                               |
| 1/16  | .0625   |      |       | #1-64                               |
| 5/64  | .0781   |      |       | #3-48                               |
| .0394 |         | .10  |       |                                     |
| .0400 | 60      |      |       |                                     |
| .0410 | 59      |      |       |                                     |
| .0413 |         | 1.05 |       |                                     |
| .0420 | 58      |      |       |                                     |
| .0430 | 57      |      |       |                                     |
| .0433 |         | 1.10 |       |                                     |
| .0453 |         | 1.15 |       |                                     |
| .0465 | 56      |      |       |                                     |
| .0472 |         | 1.20 |       |                                     |
| .0492 |         | 1.25 |       |                                     |
| .0512 |         | 1.30 |       |                                     |
| .0520 | 55      |      |       |                                     |
| .0531 |         | 1.35 |       |                                     |
| .0550 | 54      |      |       |                                     |
| .0551 |         | 1.40 |       |                                     |
| .0571 |         | 1.45 |       |                                     |
| .0591 |         | 1.50 |       |                                     |
| .0595 | 53      |      |       |                                     |
| .0610 |         | 1.55 |       |                                     |
| .0630 |         | 1.60 |       |                                     |
| .0635 | 52      |      | #1-72 |                                     |
| .0650 |         | 1.65 |       |                                     |
| .0669 |         | 1.70 |       |                                     |
| .0670 | 51      |      | #2-56 |                                     |
| .0689 |         | 1.75 |       |                                     |
| .0700 | 50      |      | #2-64 |                                     |
| .0709 |         | 1.80 |       |                                     |
| .0728 |         | 1.85 |       |                                     |
| .0730 | 49      |      |       |                                     |
| .0748 |         | 1.90 |       |                                     |
| .0760 | 48      |      |       |                                     |
| .0768 |         | 1.95 |       |                                     |
| .0785 | 47      |      |       |                                     |
| .0787 |         | 2.00 |       |                                     |
| .0807 |         | 2.05 |       |                                     |
| .0810 | 46      |      | #3-56 |                                     |
| .0820 | 45      |      |       |                                     |
| .0827 |         | 2.10 |       |                                     |
| .0846 |         | 2.15 |       |                                     |
| .0860 | 44      |      |       |                                     |
| .0866 |         | 2.20 |       |                                     |
| .0886 |         | 2.25 |       |                                     |
| .0890 | 43      |      | #4-40 |                                     |
| .0906 |         | 2.30 |       |                                     |
| .0925 |         | 2.35 |       |                                     |
| .0935 | 42      |      | #4-48 |                                     |
| 3/32  | .0938   |      |       |                                     |
| .0945 |         | 2.40 |       |                                     |
| .0960 | 41      |      |       |                                     |
| .0965 |         | 2.45 |       |                                     |
| .0980 | 40      |      |       |                                     |
| .0984 |         | 2.50 |       |                                     |
| .0995 | 39      |      | #5-40 |                                     |
| .1015 | 38      |      |       |                                     |
| .1024 |         | 2.60 |       |                                     |
| .1040 | 37      |      | #5-44 |                                     |
| .1063 |         | 2.70 |       |                                     |
| .1065 | 36      |      | #6-32 |                                     |
| .1083 |         | 2.75 |       |                                     |
| 7/64  | .1094   |      |       |                                     |
| .1100 | 35      |      |       |                                     |
| 1/8   | .1250   |      |       | 5/32-32NS                           |
|       | .1102   | 2.80 |       |                                     |
|       | .1110   | 34   |       |                                     |
|       | .1130   | 33   |       | #6-40                               |
|       | .1142   | 2.90 |       |                                     |

| Inch  | Decimal     | Wire | M/M Size | Tap Sizes Use With Indicated Drills |
|-------|-------------|------|----------|-------------------------------------|
|       | .1160       | 32   |          |                                     |
|       | .1181       |      | 3.00     |                                     |
|       | .1200       | 31   |          |                                     |
|       | .1220       |      | 3.10     |                                     |
|       | .1260       |      | 3.20     |                                     |
|       | .1280       |      | 3.25     |                                     |
|       | .1285       | 30   |          | 5/32-36NS                           |
|       | .1299       |      | 3.30     |                                     |
|       | .1339       |      | 3.40     |                                     |
|       | .1360       | 29   |          | #8-32                               |
|       | .1378       |      | 3.50     |                                     |
|       | .1405       | 28   |          |                                     |
| 9/64  | .1406       |      |          |                                     |
|       | .1417       |      | 3.60     |                                     |
|       | .1440       | 27   |          |                                     |
|       | .1457       |      | 3.70     |                                     |
|       | .1470       | 26   |          | 3/16-24NS                           |
|       | .1476       |      | 3.75     |                                     |
|       | .1495       | 25   |          | #10-24                              |
|       | .1496       |      | 3.80     |                                     |
|       | .1520       | 24   |          |                                     |
|       | .1535       |      | 3.90     |                                     |
|       | .1540       | 23   |          |                                     |
| 5/32  | .1562       |      |          |                                     |
|       | .1570       | 22   |          | 3/16-32NS                           |
|       | .1575       |      | 4.0      |                                     |
|       | .1590       | 21   |          | #10-32                              |
|       | .1610       | 20   |          |                                     |
|       | .1614       |      | 4.1      |                                     |
|       | .1654       |      | 4.2      |                                     |
|       | .1660       | 19   |          |                                     |
|       | .1673       |      | 4.25     |                                     |
|       | .1693       |      | 4.3      |                                     |
|       | .1695       | 18   |          |                                     |
| 11/64 | .1719       |      |          |                                     |
|       | .1730       | 17   |          | #12-24                              |
|       | .1732       |      | 4.4      |                                     |
|       | .1770       | 16   |          | 7/32-24NS                           |
|       | .1772       |      | 4.5      |                                     |
|       | .1800       | 15   |          | #12-28                              |
|       | .1811       |      | 4.6      |                                     |
|       | .1820       | 14   |          |                                     |
|       | .1850 .1850 | 13   | 4.7      |                                     |
|       | .1870       |      | 4.75     |                                     |
| 3/16  | .1875       |      |          |                                     |
|       | .1890 .1890 | 12   | 4.8      | 7/32-24NS                           |
|       | .1910       | 11   |          |                                     |
|       | .1929       |      | 4.9      |                                     |
|       | .1935       | 10   |          |                                     |
|       | .1960       | 9    |          |                                     |
|       | .1969       |      | 5.0      |                                     |
|       | .1990       | 8    |          | 1/4-20                              |
|       | .2008       |      | 5.1      |                                     |
|       | .2010       | 7    |          |                                     |
| 13/64 | .2031       |      |          |                                     |
|       | .2040       | 6    |          |                                     |
|       | .2047       |      | 5.2      |                                     |
|       | .2055       | 5    |          |                                     |
|       | .2067       |      | 5.25     |                                     |
|       | .2087       |      | 5.3      |                                     |
|       | .2090       | 4    |          |                                     |
|       | .2126       |      | 5.4      |                                     |
|       | .2130       | 3    |          | 1/4-28                              |
|       | .2165       |      | 5.5      |                                     |
| 7/32  | .2188       |      |          |                                     |
|       | .2205       |      | 5.6      |                                     |
|       | .2210       | 2    |          |                                     |
|       | .2244       |      | 5.7      |                                     |
|       | .2264       |      | 5.75     |                                     |
|       | .2280       | 1    |          |                                     |
|       | .2283       |      | 5.8      |                                     |
|       | .2323       |      | 5.9      |                                     |
|       | .2340       | A    |          |                                     |

| Inch  | Decimal | Wire | M/M Size   | Tap Sizes Use With Indicated Drills |
|-------|---------|------|------------|-------------------------------------|
| 15/64 | .2344   |      |            |                                     |
|       | .2362   |      | 6.0        |                                     |
|       | .2380   | B    |            |                                     |
|       | .2402   |      | 6.1        |                                     |
|       | .2420   | C    |            |                                     |
|       | .2441   |      | 6.2        |                                     |
|       | .2460   | D    |            |                                     |
| 9/32  | .2812   |      |            | 5/16-32NS                           |
| 5/16  | .3125   |      |            | 3/8-16NC                            |
| .2460 | D       |      |            |                                     |
| .2461 |         | 6.25 |            |                                     |
| .2480 |         | 6.3  |            |                                     |
| 1/4   | .2500   | E    |            |                                     |
| .2520 |         | 6.4  |            |                                     |
| .2559 |         | 6.5  |            |                                     |
| .2570 | F       |      | 5/16-18NC  |                                     |
| .2598 |         | 6.6  |            |                                     |
| .2610 | G       |      |            |                                     |
| .2638 |         | 6.7  |            |                                     |
| 17/64 | .2656   |      |            |                                     |
| .2657 |         | 6.75 |            |                                     |
| .2660 | H       |      |            |                                     |
| .2677 |         | 6.8  |            |                                     |
| .2717 |         | 6.9  |            |                                     |
| .2720 | I       |      | 5/16-24NF  |                                     |
| .2756 |         | 7.0  |            |                                     |
| .2770 | J       |      |            |                                     |
| .2795 |         | 7.1  |            |                                     |
| .2810 | K       |      |            |                                     |
| .2835 |         | 7.2  |            |                                     |
| .2854 |         | 7.25 |            |                                     |
| .2874 |         | 7.3  |            |                                     |
| .2900 | L       |      |            |                                     |
| .2913 |         | 7.4  |            |                                     |
| .2950 | M       |      |            |                                     |
| .2953 |         | 7.5  |            |                                     |
| 19/64 | .2969   |      |            |                                     |
| .2992 |         | 7.6  |            |                                     |
| .3020 | N       |      |            |                                     |
| .3031 |         | 7.7  |            |                                     |
| .3051 |         | 7.75 |            |                                     |
| .3071 |         | 7.8  |            |                                     |
| .3110 |         | 7.9  |            |                                     |
| .3150 |         | 8.0  |            |                                     |
| .3160 | O       |      |            |                                     |
| .3189 |         | 8.1  |            |                                     |
| .3228 |         | 8.2  |            |                                     |
| .3230 | P       |      |            |                                     |
| .3248 |         | 8.25 |            |                                     |
| .3268 |         | 8.3  |            |                                     |
| 21/64 | .3281   |      |            |                                     |
| .3307 |         | 8.4  |            |                                     |
| .3320 | Q       |      | 3/8-24NF   |                                     |
| .3346 |         | 8.5  |            |                                     |
| .3386 |         | 8.6  |            |                                     |
| .3390 | R       |      | 1/8-27Pipe |                                     |
| .3425 |         | 8.7  |            |                                     |
| 11/32 | .3438   |      |            |                                     |
| .3445 |         | 8.75 |            |                                     |
| .3465 |         | 8.8  |            |                                     |
| .3480 | S       |      |            |                                     |
| .3504 |         | 9.8  |            |                                     |
| .3543 |         | 9.0  |            |                                     |
| .3580 | T       |      |            |                                     |
| .3583 |         | 9.1  |            |                                     |
| 23/64 | .3594   |      |            |                                     |
| .3622 |         | 9.2  |            |                                     |
| .3642 |         | 9.25 |            |                                     |
| .3661 |         | 9.3  |            |                                     |
| .3680 | U       |      | 7/16-14NC  |                                     |
| .3701 |         | 9.4  |            |                                     |
| .3740 |         | 9.5  |            |                                     |
| 3/8   | .3750   |      |            |                                     |

Technical Information

The : symbol after a price denotes that it is a Direct Ship Product (DSP) and shipping, availability & lead times may vary.



# DECIMAL EQUIVALENCY CHARTS

## Decimal Equivalency Chart Cont.

Technical Information

| Inch  | Decimal | Wire  | M/M Size    | Tap Sizes Use With Indicated Drills |
|-------|---------|-------|-------------|-------------------------------------|
| 27/64 | .4219   |       |             | 1/2-13                              |
| 7/16  | .4375   |       |             | 1/4-18 Pipe                         |
| 29/64 | .4531   |       |             | 1/2-20                              |
| 31/64 | .4844   |       |             | 9/16-12                             |
| 33/64 | .5156   |       |             | 9/16-18                             |
| 37/64 | .5781   |       |             | 5/8-18NF                            |
| 5/8   | .6250   |       |             | 11/16-16NS                          |
| 21/32 | .6562   |       |             | 3/4-10NC                            |
| 11/16 | .6875   |       |             | 3/4-16NF                            |
| 23/32 | .7188   |       |             | 1/2-14 Pipe                         |
| 49/64 | .7656   |       |             | 7/8-9NC                             |
| 13/16 | .8125   |       |             | 7/8-14NF                            |
| .3770 | V       |       |             |                                     |
| .3780 |         | 9.6   |             |                                     |
| .3819 |         | 9.7   |             |                                     |
| .3839 |         | 9.75  |             |                                     |
| .3858 |         | 9.8   |             |                                     |
| .3860 | W       |       | 7/16-20     |                                     |
| .3898 |         | 9.9   |             |                                     |
| 25/64 | .3906   |       |             |                                     |
| .3937 |         | 10.0  |             |                                     |
| .3970 | X       |       |             |                                     |
| .4040 | Y       |       |             |                                     |
| 13/32 | .4062   |       |             |                                     |
| .4130 | Z       |       |             |                                     |
| .4134 |         | 10.5  |             |                                     |
| .4331 |         | 11.0  |             |                                     |
| .4528 |         | 11.5  |             |                                     |
| 15/32 | .4688   |       |             |                                     |
| .4724 |         | 12.0  |             |                                     |
| .4921 |         | 12.5  |             |                                     |
| 1/2   | .5000   |       |             |                                     |
| .5118 |         | 13.0  |             |                                     |
| 17/32 | .5312   |       |             |                                     |
| .5315 |         | 13.5  |             |                                     |
| 35/64 | .5469   |       |             |                                     |
| .5512 |         | 14.0  | 5/8-11      |                                     |
| 9/16  | .5625   |       |             |                                     |
| .5709 |         | 14.5  |             |                                     |
| .5906 |         | 15.0  | 3/8-18 Pipe |                                     |
| 19/32 | .5938   |       |             |                                     |
| 39/64 | .6094   |       |             |                                     |
| .6102 |         | 15.5  |             |                                     |
| .6299 |         | 16.0  |             |                                     |
| 41/64 | .6406   | .6496 | 16.5        |                                     |
| .6693 |         | 17.0  |             |                                     |
| 43/64 | .6719   |       |             |                                     |
| .6890 |         | 17.5  |             |                                     |
| 45/64 | .7031   |       |             |                                     |

| Inch    | Decimal | Wire | M/M Size | Tap Sizes Use With Indicated Drills |
|---------|---------|------|----------|-------------------------------------|
| .7087   |         | 18.0 |          |                                     |
| .7283   |         | 18.5 |          |                                     |
| 47/64   | .7344   |      |          |                                     |
| .7480   |         | 19.0 |          |                                     |
| 3/4     | .7500   |      |          |                                     |
| .7677   |         | 19.5 |          |                                     |
| 25/32   | .7812   |      |          |                                     |
| .7874   |         | 20.0 |          |                                     |
| 51/64   | .7969   |      |          |                                     |
| .8071   |         | 20.5 |          |                                     |
| .8268   |         | 21.0 |          |                                     |
| 53/64   | .8281   |      |          |                                     |
| 27/32   | .8438   |      |          |                                     |
| .8465   |         | 21.5 |          |                                     |
| 55/64   | .8594   |      |          |                                     |
| .8661   |         | 22.0 |          |                                     |
| 7/8     | .8750   |      |          | 1-8NC                               |
| 59/64   | .9219   |      |          | 3/4-14 Pipe                         |
| 15/16   | .9375   |      |          | 1-14NF                              |
| 63/64   | .9844   |      |          | 1-1/8-7NC                           |
| 1-3/64  | 1.0469  |      |          | 1-1/8-12NF                          |
| 1-7/64  | 1.1094  |      |          | 1-1/4-7NC                           |
| 1-5/32  | 1.1562  |      |          | 1-1/2 Pipe                          |
| 1-11/64 | 1.1719  |      |          | 1-1/4-12NF                          |
|         | .8858   |      | 22.5     |                                     |
| 57/64   | .8906   |      |          |                                     |
|         | .9055   |      | 23.0     |                                     |
| 29/32   | .9062   |      |          |                                     |
|         | .9252   |      | 23.5     |                                     |
|         | .9449   |      | 24.0     |                                     |
| 61/64   | .9531   |      |          |                                     |
|         | .9646   |      | 24.5     |                                     |
| 31/32   | .9688   |      |          |                                     |
|         | .9843   |      | 25.0     |                                     |
| 1       | 1.0000  |      |          |                                     |
|         | 1.0039  |      | 25.5     |                                     |
| 1-1/64  | 1.0156  |      |          |                                     |
|         | 1.0236  |      | 26.0     |                                     |
| 1-1/32  | 1.0312  |      |          |                                     |
|         | 1.0433  |      | 26.5     |                                     |
| 1-1/16  | 1.0625  |      |          |                                     |
|         | 1.0630  |      | 27.0     |                                     |
| 1-5/64  | 1.0781  |      |          |                                     |
|         | 1.0827  |      | 27.5     |                                     |
| 1-3/32  | 1.0938  |      |          |                                     |
|         | 1.1024  |      | 28.0     |                                     |
|         | 1.1220  |      | 28.5     |                                     |
| 1-1/8   | 1.1250  |      |          |                                     |
| 1-9/64  | 1.1406  |      |          |                                     |
|         | 1.1417  |      | 29.0     |                                     |
|         | 1.1614  |      | 29.5     |                                     |

# TABLE OF CUTTING SPEED - FRACTIONAL DRILL SIZES

## Operating Parameters

### Operating Parameters - Table of Cutting Speed - Fractional Size Drills

| Dia. Size | 10'  | 12'  | 15'  | 20'  | 25'  | 30'  | 35'  | 40'  | 45'   | 50'   | 60'   | 70'   | 80'   | 90'   | 100'  |
|-----------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|
| 1/64      | 2445 | 2934 | 3667 | 4889 | 6112 | 7334 | 8556 | 9778 | 11001 | 12223 | 14668 | 17112 | 19557 | 22001 | 24446 |
| 1/32      | 1222 | 1467 | 1833 | 2445 | 3056 | 3667 | 4278 | 4889 | 5500  | 6112  | 7334  | 8556  | 9778  | 11001 | 12223 |
| 3/64      | 815  | 978  | 1222 | 1630 | 2037 | 2445 | 2852 | 3259 | 3667  | 4074  | 4889  | 5704  | 6519  | 7334  | 8149  |
| 1/16      | 611  | 733  | 917  | 1222 | 1528 | 1833 | 2139 | 2445 | 2750  | 3056  | 3667  | 4278  | 4889  | 5500  | 6112  |
| 5/64      | 489  | 587  | 733  | 978  | 1222 | 1467 | 1711 | 1956 | 2200  | 2445  | 2934  | 3422  | 3911  | 4400  | 4889  |
| 3/32      | 407  | 489  | 611  | 815  | 1019 | 1222 | 1426 | 1630 | 1833  | 2037  | 2445  | 2852  | 3259  | 3667  | 4074  |
| 7/64      | 349  | 419  | 524  | 698  | 873  | 1048 | 1222 | 1397 | 1572  | 1746  | 2095  | 2445  | 2794  | 3413  | 3492  |
| 1/8       | 306  | 367  | 458  | 611  | 764  | 917  | 1070 | 1222 | 1375  | 1528  | 1833  | 2139  | 2445  | 2750  | 3056  |
| 9/64      | 272  | 326  | 407  | 543  | 679  | 815  | 951  | 1086 | 1222  | 1358  | 1630  | 1901  | 2173  | 2445  | 2716  |
| 5/32      | 244  | 293  | 367  | 489  | 611  | 733  | 856  | 978  | 1100  | 1222  | 1467  | 1711  | 1956  | 2200  | 2445  |
| 11/64     | 222  | 267  | 333  | 444  | 556  | 667  | 778  | 889  | 1000  | 1111  | 1333  | 1556  | 1778  | 2000  | 2222  |
| 3/16      | 204  | 244  | 306  | 407  | 509  | 611  | 713  | 815  | 917   | 1019  | 1222  | 1426  | 1630  | 1833  | 2037  |
| 13/64     | 188  | 226  | 282  | 376  | 470  | 564  | 658  | 752  | 846   | 940   | 1128  | 1316  | 1504  | 1692  | 1880  |
| 7/32      | 175  | 210  | 262  | 349  | 437  | 524  | 611  | 698  | 786   | 873   | 1048  | 1222  | 1397  | 1572  | 1746  |
| 15/64     | 163  | 196  | 244  | 326  | 407  | 489  | 570  | 652  | 733   | 815   | 978   | 1141  | 1304  | 1467  | 1630  |
| 1/4       | 153  | 183  | 229  | 306  | 382  | 458  | 535  | 611  | 688   | 764   | 917   | 1070  | 1222  | 1375  | 1528  |
| 9/32      | 136  | 163  | 204  | 272  | 340  | 407  | 475  | 543  | 611   | 679   | 815   | 951   | 1086  | 1222  | 1358  |
| 5/16      | 122  | 147  | 183  | 244  | 306  | 367  | 428  | 489  | 550   | 611   | 733   | 856   | 978   | 1100  | 1222  |
| 11/32     | 111  | 133  | 167  | 222  | 278  | 333  | 389  | 444  | 500   | 556   | 667   | 778   | 889   | 1000  | 1111  |
| 3/8       | 102  | 122  | 153  | 204  | 255  | 306  | 357  | 407  | 458   | 509   | 611   | 713   | 815   | 917   | 1019  |
| 13/32     | 94   | 113  | 141  | 188  | 235  | 282  | 329  | 376  | 423   | 470   | 564   | 658   | 752   | 846   | 940   |
| 7/16      | 87   | 105  | 131  | 175  | 218  | 262  | 306  | 349  | 393   | 437   | 524   | 611   | 698   | 786   | 873   |
| 15/32     | 81   | 98   | 122  | 163  | 204  | 244  | 285  | 326  | 367   | 407   | 489   | 570   | 652   | 733   | 815   |
| 1/2       | 76   | 92   | 115  | 153  | 191  | 229  | 267  | 306  | 344   | 382   | 458   | 535   | 611   | 688   | 764   |
| 9/16      | 68   | 81   | 102  | 136  | 170  | 204  | 238  | 272  | 306   | 340   | 407   | 475   | 543   | 611   | 679   |
| 5/8       | 61   | 73   | 92   | 122  | 153  | 183  | 214  | 244  | 275   | 306   | 367   | 428   | 489   | 550   | 611   |
| 11/16     | 56   | 67   | 83   | 111  | 139  | 167  | 194  | 222  | 250   | 278   | 333   | 389   | 444   | 500   | 556   |
| 3/4       | 51   | 61   | 76   | 102  | 127  | 153  | 178  | 204  | 229   | 255   | 306   | 357   | 407   | 458   | 509   |
| 13/16     | 47   | 56   | 71   | 94   | 118  | 141  | 165  | 188  | 212   | 235   | 282   | 329   | 376   | 423   | 470   |
| 7/8       | 44   | 52   | 65   | 87   | 109  | 131  | 153  | 175  | 196   | 218   | 262   | 306   | 349   | 393   | 437   |
| 15/16     | 41   | 49   | 61   | 81   | 102  | 122  | 143  | 163  | 183   | 204   | 244   | 285   | 326   | 367   | 407   |
| 1         | 38   | 46   | 57   | 76   | 95   | 115  | 134  | 153  | 172   | 191   | 229   | 267   | 306   | 344   | 382   |
| 1-1/8     | 34   | 41   | 51   | 68   | 85   | 102  | 119  | 136  | 153   | 170   | 204   | 238   | 272   | 306   | 340   |
| 1-1/4     | 31   | 37   | 46   | 61   | 76   | 92   | 107  | 122  | 138   | 153   | 183   | 214   | 244   | 275   | 306   |
| 1-3/8     | 28   | 33   | 42   | 56   | 69   | 83   | 97   | 111  | 125   | 139   | 167   | 194   | 222   | 250   | 278   |
| 1-1/2     | 25   | 31   | 38   | 51   | 64   | 76   | 89   | 102  | 115   | 127   | 153   | 178   | 204   | 229   | 255   |
| 1-5/8     | 24   | 28   | 35   | 47   | 59   | 71   | 82   | 94   | 106   | 118   | 141   | 165   | 188   | 212   | 235   |
| 1-3/4     | 22   | 26   | 33   | 44   | 55   | 65   | 76   | 87   | 98    | 109   | 131   | 153   | 175   | 196   | 218   |
| 1-7/8     | 20   | 24   | 31   | 41   | 51   | 61   | 71   | 81   | 92    | 102   | 122   | 143   | 163   | 183   | 204   |
| 2         | 19   | 23   | 29   | 38   | 48   | 57   | 67   | 76   | 86    | 95    | 115   | 134   | 153   | 172   | 191   |
| 2-1/4     | 17   | 20   | 25   | 34   | 42   | 51   | 59   | 68   | 76    | 85    | 102   | 119   | 136   | 153   | 170   |
| 2-1/2     | 15   | 18   | 23   | 31   | 38   | 46   | 53   | 61   | 69    | 76    | 92    | 107   | 122   | 138   | 153   |
| 2-3/4     | 14   | 17   | 21   | 28   | 35   | 42   | 49   | 56   | 63    | 69    | 83    | 97    | 111   | 125   | 139   |
| 3         | 13   | 15   | 19   | 25   | 32   | 38   | 45   | 51   | 57    | 64    | 76    | 89    | 102   | 115   | 127   |
| 3-1/2     | 11   | 13   | 16   | 22   | 27   | 33   | 38   | 44   | 49    | 55    | 65    | 76    | 87    | 98    | 109   |

# TABLE OF CUTTING SPEEDS - WIRE SIZE DRILLS

## Operating Parameters

Technical Information

### Operating Parameters - Table of Cutting Speed - Wire Size Drills

| Dia. Size | 10' | 12' | 15' | 20'  | 25'  | 30'  | 35'  | 40'  | 45'  | 50'  | 60'  | 70'  | 80'  | 90'  | 100' |
|-----------|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|
| 1         | 168 | 201 | 251 | 335  | 419  | 503  | 586  | 670  | 754  | 838  | 1005 | 1173 | 1340 | 1508 | 1675 |
| 2         | 173 | 207 | 259 | 346  | 432  | 519  | 605  | 691  | 778  | 864  | 1037 | 1210 | 1382 | 1555 | 1728 |
| 3         | 179 | 215 | 269 | 359  | 448  | 538  | 628  | 717  | 807  | 897  | 1076 | 1255 | 1434 | 1614 | 1793 |
| 4         | 183 | 219 | 274 | 366  | 457  | 548  | 640  | 731  | 822  | 914  | 1097 | 1280 | 1462 | 1645 | 1828 |
| 5         | 186 | 223 | 279 | 372  | 465  | 558  | 651  | 743  | 836  | 930  | 1115 | 1301 | 1487 | 1673 | 1859 |
| 6         | 187 | 225 | 281 | 374  | 468  | 562  | 655  | 749  | 843  | 936  | 1123 | 1310 | 1498 | 1685 | 1872 |
| 7         | 190 | 228 | 285 | 380  | 475  | 570  | 665  | 749  | 843  | 936  | 1123 | 1310 | 1498 | 1685 | 1872 |
| 8         | 192 | 230 | 288 | 384  | 480  | 576  | 672  | 768  | 864  | 960  | 1151 | 1343 | 1535 | 1727 | 1919 |
| 9         | 195 | 234 | 292 | 390  | 487  | 585  | 682  | 780  | 877  | 975  | 1169 | 1364 | 1559 | 1754 | 1949 |
| 10        | 197 | 237 | 296 | 395  | 494  | 592  | 691  | 790  | 888  | 987  | 1184 | 1382 | 1579 | 1777 | 1974 |
| 11        | 200 | 240 | 300 | 400  | 500  | 600  | 700  | 800  | 900  | 1000 | 1200 | 1400 | 1600 | 1800 | 2000 |
| 12        | 202 | 243 | 303 | 404  | 505  | 606  | 707  | 808  | 909  | 1010 | 1213 | 1415 | 1617 | 1819 | 2021 |
| 13        | 206 | 248 | 310 | 413  | 516  | 619  | 723  | 826  | 929  | 1032 | 1239 | 1450 | 1652 | 1859 | 2065 |
| 14        | 210 | 252 | 315 | 420  | 525  | 630  | 735  | 839  | 944  | 1050 | 1259 | 1469 | 1579 | 1777 | 1974 |
| 15        | 212 | 255 | 318 | 424  | 531  | 637  | 743  | 849  | 955  | 1064 | 1276 | 1489 | 1702 | 1914 | 2127 |
| 16        | 216 | 259 | 324 | 432  | 540  | 647  | 755  | 863  | 971  | 1079 | 1295 | 1511 | 1726 | 1942 | 2158 |
| 17        | 221 | 265 | 331 | 442  | 552  | 662  | 773  | 883  | 994  | 1050 | 1259 | 1469 | 1679 | 1889 | 2099 |
| 18        | 225 | 270 | 338 | 451  | 563  | 676  | 789  | 901  | 1014 | 1130 | 1356 | 1582 | 1808 | 2034 | 2260 |
| 19        | 230 | 276 | 345 | 460  | 575  | 690  | 805  | 920  | 1035 | 1151 | 1381 | 1611 | 1841 | 2071 | 2301 |
| 20        | 237 | 285 | 356 | 474  | 593  | 712  | 830  | 949  | 1068 | 1187 | 1423 | 1660 | 1898 | 2135 | 2372 |
| 21        | 240 | 288 | 360 | 480  | 601  | 721  | 841  | 961  | 1081 | 1201 | 1441 | 1681 | 1922 | 2162 | 2402 |
| 22        | 243 | 292 | 365 | 487  | 608  | 730  | 852  | 973  | 1095 | 1217 | 1460 | 1703 | 1946 | 2190 | 2433 |
| 23        | 248 | 298 | 372 | 496  | 620  | 744  | 868  | 992  | 1116 | 1240 | 1488 | 1736 | 1984 | 2232 | 2480 |
| 24        | 251 | 302 | 377 | 503  | 628  | 754  | 880  | 1005 | 1121 | 1257 | 1508 | 1759 | 2010 | 2262 | 2513 |
| 25        | 255 | 307 | 383 | 511  | 639  | 766  | 894  | 1022 | 1150 | 1276 | 1533 | 1789 | 2044 | 2300 | 2555 |
| 26        | 260 | 312 | 390 | 520  | 650  | 780  | 909  | 1039 | 1169 | 1299 | 1559 | 1819 | 2078 | 2338 | 2598 |
| 27        | 265 | 318 | 398 | 531  | 663  | 796  | 928  | 1061 | 1194 | 1327 | 1592 | 1857 | 2122 | 2388 | 2653 |
| 28        | 272 | 326 | 408 | 544  | 680  | 816  | 952  | 1087 | 1223 | 1360 | 1631 | 1903 | 2175 | 2447 | 2719 |
| 29        | 281 | 337 | 421 | 562  | 702  | 843  | 983  | 1123 | 1264 | 1405 | 1685 | 1966 | 2247 | 2528 | 2809 |
| 30        | 297 | 357 | 446 | 595  | 743  | 892  | 1040 | 1189 | 1338 | 1487 | 1784 | 2081 | 2378 | 2676 | 2973 |
| 31        | 318 | 382 | 477 | 637  | 796  | 955  | 1114 | 1273 | 1432 | 1592 | 1910 | 2228 | 2546 | 2865 | 3183 |
| 32        | 329 | 395 | 494 | 659  | 823  | 988  | 1152 | 1317 | 1482 | 1647 | 1976 | 2305 | 2634 | 2964 | 3293 |
| 33        | 338 | 406 | 507 | 676  | 845  | 1014 | 1183 | 1352 | 1521 | 1690 | 2028 | 2366 | 2704 | 3042 | 3380 |
| 34        | 344 | 413 | 516 | 688  | 860  | 1032 | 1204 | 1376 | 1549 | 1721 | 2065 | 2409 | 2753 | 3097 | 3442 |
| 35        | 347 | 417 | 521 | 694  | 868  | 1042 | 1215 | 1389 | 1563 | 1736 | 2083 | 2430 | 2778 | 3125 | 3472 |
| 36        | 359 | 430 | 538 | 717  | 897  | 1076 | 1255 | 1435 | 1614 | 1794 | 2152 | 2511 | 2870 | 3228 | 3587 |
| 37        | 367 | 441 | 551 | 735  | 918  | 1102 | 1285 | 1469 | 1653 | 1837 | 2204 | 2571 | 2938 | 3306 | 3673 |
| 38        | 376 | 452 | 564 | 753  | 941  | 1129 | 1317 | 1505 | 1693 | 1882 | 2258 | 2634 | 3010 | 3387 | 3763 |
| 39        | 384 | 461 | 576 | 768  | 960  | 1152 | 1344 | 1536 | 1728 | 1920 | 2303 | 2687 | 3071 | 3455 | 3839 |
| 40        | 390 | 468 | 585 | 780  | 974  | 1169 | 1364 | 1559 | 1754 | 1949 | 2339 | 2729 | 3118 | 3508 | 3898 |
| 41        | 398 | 477 | 597 | 796  | 995  | 1194 | 1393 | 1592 | 1790 | 1990 | 2387 | 2785 | 3183 | 3581 | 3979 |
| 42        | 409 | 490 | 613 | 817  | 1021 | 1226 | 1430 | 1634 | 1838 | 2043 | 2451 | 2860 | 3268 | 3677 | 4085 |
| 43        | 429 | 515 | 644 | 858  | 1073 | 1288 | 1502 | 1717 | 1931 | 2146 | 2575 | 3004 | 3434 | 3863 | 4292 |
| 44        | 444 | 533 | 666 | 888  | 1110 | 1332 | 1555 | 1777 | 1999 | 2221 | 2665 | 3109 | 3554 | 3999 | 4442 |
| 45        | 466 | 559 | 699 | 932  | 1165 | 1397 | 1630 | 1863 | 2096 | 2329 | 2795 | 3261 | 3726 | 4192 | 4658 |
| 46        | 472 | 566 | 707 | 943  | 1179 | 1415 | 1650 | 1886 | 2122 | 2358 | 2830 | 3301 | 3773 | 4244 | 4716 |
| 47        | 487 | 584 | 730 | 973  | 1216 | 1460 | 1703 | 1946 | 2190 | 2433 | 2920 | 3406 | 3893 | 4379 | 4866 |
| 48        | 503 | 603 | 754 | 1005 | 1256 | 1508 | 1759 | 2010 | 2262 | 2513 | 3016 | 3518 | 4021 | 4523 | 5026 |
| 49        | 523 | 628 | 785 | 1046 | 1308 | 1570 | 1831 | 2093 | 2355 | 2617 | 3140 | 3663 | 4211 | 4711 | 5233 |
| 50        | 546 | 655 | 819 | 1091 | 1364 | 1637 | 1910 | 2183 | 2456 | 2729 | 3274 | 3820 | 4366 | 4911 | 5457 |
| 51        | 570 | 684 | 855 | 1140 | 1425 | 1710 | 1995 | 2280 | 2565 | 2851 | 3421 | 3991 | 4561 | 5131 | 5701 |
| 52        | 604 | 722 | 902 | 1203 | 1504 | 1805 | 2105 | 2406 | 2707 | 3008 | 3609 | 4211 | 4812 | 5414 | 6015 |

# CARBIDE END MILLS

*High Strength, Submicrograin Carbide*

## FEATURING AITiN

### Tool & Cutter Grinding

In addition to manufacturing carbide end mills, Fastenal also offers a full service tool and cutter regrind service. Standard resharpen on end mills includes resharpening the O.D., grinding the flutes and resharpening the ends. Drills are end sharpened only—the diameter does not change. The Regrind Division utilizes the latest technology along with skilled machinists to service all of your tooling needs, including:

- Step Tools
- Drill Bits
- Annular Cutters
- Center Drills
- Chasers
- Countersinks
- Auger Bits
- Hobbs
- Milling Cutters
- Dovetail Cutters
- Radius Tools
- Counterbores
- Router Bits
- Core Drills
- Shear Blades
- Cutting Discs
- Planer Blades
- Punches & Dies
- Taps
- Carbide Saw Blades
- End Mills
- Key Seat Cutters
- Spade Drills
- Broaches
- Shapers
- Chisels
- Wood Bits
- Involute Gear Cutters
- Reamers
- Cold Saw Blades

**For our complete  
line of Carbide  
End Mills, go to  
page 13-100!**

### The Grinding Division can also:

- Size Tooling to Specific Diameters +/- .0005
- Make Custom Tooling to Print
- Coat any type of tooling with a variety of coatings including: TiN, TiAlN, AITiN and TiCN





# CARBIDE END MILLS

## AlTiN

is a graded monolayer coating containing high levels of aluminum. The high aluminum content provides higher hardness and smoother surface finish when compared to TiAlN coatings.

AlTiN has a characteristic black color.

### METAL CUTTING APPLICATIONS:

- Difficult to Machine Materials
- Hardened Materials
- Dry Machining Applications or Where Coolant Availability Is Restricted
- High Speed, High Temperature Machining
- Cast Iron Machining

### METAL FABRICATING APPLICATIONS:

- Hot Forging
- Die Casting
- Trimming

### OTHER APPLICATIONS:

- Surgical Instruments
- Decorative
- Wear Parts



### AlTiN PROPERTIES

|                                       |          |
|---------------------------------------|----------|
| Hardness (HV 0.05)                    | 4500±500 |
| Upper Critical Load (N)               | 70/80    |
| Oxidation Temp. (°C)                  | 800      |
| Friction Coefficient                  | 0.42     |
| Surface Roughness (R <sub>a</sub> μm) | 0.15     |
| Color                                 | Black    |

## 2 & 4 FLUTE

### REGULAR LENGTH

#### FEATURES:

- 10% Cobalt
- Submicrograin Carbide
- 30° Helix Angle
- Center Cutting
- AlTiN Coating
- Uncoated

#### TOLERANCES:

+ .000/- .0025



| DIMENSIONS |            |            |       | 2 Flute Uncoated Part No. | 2 Flute AlTiN Coated Part No. | 4 Flute Uncoated Part No. | 4 Flute AlTiN Coated Part No. |
|------------|------------|------------|-------|---------------------------|-------------------------------|---------------------------|-------------------------------|
| Diameter   | Shank Dia. | Cut Length | OAL   |                           |                               |                           |                               |
| 1/32       | 1/8        | 1/8        | 1-1/2 | 0321344                   | 0322550                       | 0321765                   | 0322680                       |
| 1/16       | 1/8        | 1/4        | 1-1/2 | 0321346                   | 0322552                       | 0321767                   | 0322682                       |
| 3/32       | 1/8        | 3/8        | 1-1/2 | 0321348                   | 0322554                       | 0321769                   | 0322684                       |
| 1/8        | 1/8        | 1/2        | 1-1/2 | 0321350                   | 0322556                       | 0321771                   | 0322686                       |
| 5/32       | 3/16       | 9/16       | 2     | 0321352                   | 0322558                       | 0321773                   | 0322688                       |
| 3/16       | 3/16       | 5/8        | 2     | 0321354                   | 0322560                       | 0321775                   | 0322690                       |
| 7/32       | 1/4        | 5/8        | 2-1/2 | 0321356                   | 0322562                       | 0321777                   | 0322692                       |
| 1/4        | 1/4        | 3/4        | 2-1/2 | 0321358                   | 0322564                       | 0321779                   | 0322694                       |
| 9/32       | 5/16       | 3/4        | 2-1/2 | 0321360                   | 0322566                       | 0321781                   | 0322696                       |
| 5/16       | 5/16       | 13/16      | 2-1/2 | 0321362                   | 0322568                       | 0321783                   | 0322698                       |
| 11/32      | 3/8        | 1          | 2-1/2 | 0321364                   | 0322570                       | 0321785                   | 0322700                       |
| 3/8        | 3/8        | 1          | 2-1/2 | 0321366                   | 0322572                       | 0321787                   | 0322702                       |
| 7/16       | 7/16       | 1          | 2-1/2 | 0321367                   | 0322573                       | 0321788                   | 0322703                       |
| 1/2        | 1/2        | 1          | 3     | 0321368                   | 0322574                       | 0321789                   | 0322704                       |
| 9/16       | 9/16       | 1-1/4      | 3-1/2 | 0321369                   | 0322575                       | 0321790                   | 0322705                       |
| 5/8        | 5/8        | 1-1/4      | 3-1/2 | 0321370                   | 0322576                       | 0321791                   | 0322706                       |
| 11/16      | 3/4        | 1-1/2      | 4     | 0321371                   | 0322577                       | 0321792                   | 0322707                       |
| 3/4        | 3/4        | 1-1/2      | 4     | 0321372                   | 0322578                       | 0321793                   | 0322708                       |
| 7/8        | 7/8        | 1-1/2      | 4     | 0321373                   | 0322579                       | 0321794                   | 0322709                       |
| 1          | 1          | 1-1/2      | 4     | 0321374                   | 0322580                       | 0321795                   | 0322710                       |

### LONG LENGTH

| DIMENSIONS |            |            |       | 2 Flute Uncoated Part No. | 4 Flute Uncoated Part No. |
|------------|------------|------------|-------|---------------------------|---------------------------|
| Diameter   | Shank Dia. | Cut Length | OAL   |                           |                           |
| 1/8        | 1/8        | 3/4        | 2-1/4 | 0321407                   | 0321828                   |
| 3/16       | 3/16       | 3/4        | 2-1/2 | 0321409                   | 0321830                   |
| 1/4        | 1/4        | 1-1/8      | 3     | 0321410                   | 0321831                   |
| 5/16       | 5/16       | 1-1/8      | 3     | 0321411                   | 0321832                   |
| 3/8        | 3/8        | 1-1/8      | 3     | 0321412                   | 0321833                   |
| 7/16       | 7/16       | 2          | 4     | 0321413                   | 0321834                   |
| 1/2        | 1/2        | 2          | 4     | 0321414                   | 0321835                   |
| 5/8        | 5/8        | 2-1/4      | 5     | 0321415                   | 0321836                   |
| 3/4        | 3/4        | 2-1/4      | 5     | 0321416                   | 0321837                   |
| 1          | 1          | 2-1/4      | 5     | 0321417                   | 0321838                   |

### EXTRA LONG LENGTH

| DIMENSIONS |            |            |     | 2 Flute Uncoated Part No. | 4 Flute Uncoated Part No. |
|------------|------------|------------|-----|---------------------------|---------------------------|
| Diameter   | Shank Dia. | Cut Length | OAL |                           |                           |
| 1/8        | 1/8        | 1          | 3   | 0321418                   | 0321839                   |
| 3/16       | 3/16       | 1-1/8      | 3   | 0321420                   | 0321841                   |
| 1/4        | 1/4        | 1-1/2      | 4   | 0321421                   | 0321842                   |
| 5/16       | 5/16       | 1-5/8      | 4   | 0321422                   | 0321843                   |
| 3/8        | 3/8        | 1-3/4      | 4   | 0321423                   | 0321844                   |
| 7/16       | 7/16       | 3          | 6   | 0321424                   | 0321845                   |
| 1/2        | 1/2        | 3          | 6   | 0321425                   | 0321846                   |
| 5/8        | 5/8        | 3          | 6   | 0321426                   | 0321847                   |
| 3/4        | 3/4        | 3          | 6   | 0321427                   | 0321848                   |
| 1          | 1          | 3          | 6   | 0321428                   | 0321849                   |



## 3 & 5 FLUTE ECCENTRIC GROUND

### FEATURES:

- 10% Cobalt
- Submicrograin Carbide
- 50° Helix Angle
- Special Eccentric Edge Grind
- Center Cutting
- AITiN Coating

**TOLERANCES:**  
+0.000/-0.0015



| DIMENSIONS |               |               |       | 3 Flute<br>AITiN Coated<br>Part No. | 3 Flute<br>AITiN Coated (Long)<br>Part No. | 5 Flute<br>AITiN Coated<br>Part No. | 5 Flute<br>AITiN Coated (Long)<br>Part No. |
|------------|---------------|---------------|-------|-------------------------------------|--|-------------------------------------|--|
| Diameter   | Shank<br>Dia. | Cut<br>Length | OAL   |                                     |  |                                     |  |
| 1/4        | 1/4           | 3/4           | 2-1/2 | 0322757                             |  |                                     |  |
| 1/4        | 1/4           | 1-1/8         | 3     |                                     | 0322766                                    |                                     |  |
| 5/16       | 5/16          | 13/16         | 2-1/2 | 0322758                             |  |                                     |  |
| 5/16       | 5/16          | 1-1/8         | 3     |                                     | 0322767                                    |                                     |  |
| 3/8        | 3/8           | 1             | 2-1/2 | 0322759                             |  | 0322773                             |  |
| 3/8        | 3/8           | 1-1/8         | 3     |                                     | 0322768                                    |                                     | 0322782                                    |
| 7/16       | 7/16          | 1             | 2-3/4 | 0322760                             |  | 0322774                             |  |
| 7/16       | 7/16          | 2             | 4     |                                     | 0322769                                    |                                     | 0322783                                    |
| 1/2        | 1/2           | 1             | 3     | 0322761                             |  | 0322775                             |  |
| 1/2        | 1/2           | 2             | 4     |                                     | 0322770                                    |                                     | 0322784                                    |
| 9/16       | 9/16          | 1-1/4         | 3-1/2 | 0322762                             |  | 0322776                             |  |
| 5/8        | 5/8           | 1-1/4         | 3-1/2 | 0322763                             |  | 0322777                             |  |
| 5/8        | 5/8           | 2-1/4         | 5     |                                     | 0322771                                    |                                     | 0322785                                    |
| 11/16      | 11/16         | 1-1/2         | 4     | 0322764                             |  | 0322778                             |  |
| 3/4        | 3/4           | 1-1/2         | 4     | 0322765                             |  | 0322779                             |  |
| 3/4        | 3/4           | 2-1/4         | 5     |                                     | 0322772                                    |                                     | 0322786                                    |
| 7/8        | 7/8           | 1-1/2         | 4     |                                     |  | 0322780                             |  |
| 1          | 1             | 1-1/2         | 4     |                                     |  | 0322781                             |  |
| 1          | 1             | 2-1/4         | 5     |                                     |  |                                     | 0322787                                    |

## 2 & 4 FLUTE BALL NOSE

### REGULAR LENGTH

### FEATURES:

- 10% Cobalt
- Submicrograin Carbide
- 30° Helix Angle
- Center Cutting
- Uncoated

**TOLERANCES:**  
+0.000/-0.0025



| DIMENSIONS |               |               |       | 2 Flute<br>Uncoated<br>Part No. | 2 Flute<br>AITiN Coated<br>Part No. | 4 Flute<br>Uncoated<br>Part No. | 4 Flute<br>AITiN Coated<br>Part No. |
|------------|---------------|---------------|-------|---------------------------------|-------------------------------------|---------------------------------|-------------------------------------|
| Diameter   | Shank<br>Dia. | Cut<br>Length | OAL   |                                 |                                     |                                 |                                     |
| 1/32       | 1/8           | 1/8           | 1-1/2 | 0321454                         | 0322582                             | 0321660                         | 0322652                             |
| 1/16       | 1/8           | 1/4           | 1-1/2 | 0321456                         | 0322584                             | 0321662                         | 0322654                             |
| 3/32       | 1/8           | 3/8           | 1-1/2 | 0321458                         | 0322586                             | 0321664                         | 0322656                             |
| 1/8        | 1/8           | 1/2           | 1-1/2 | 0321460                         | 0322588                             | 0321666                         | 0322658                             |
| 5/32       | 3/16          | 9/16          | 2     | 0321462                         | 0322590                             | 0321668                         | 0322660                             |
| 3/16       | 3/16          | 5/8           | 2     | 0321464                         | 0322592                             | 0321670                         | 0322662                             |
| 7/32       | 1/4           | 5/8           | 2-1/2 | 0321466                         | 0322594                             | 0321672                         | 0322664                             |
| 1/4        | 1/4           | 3/4           | 2-1/2 | 0321468                         | 0322596                             | 0321674                         | 0322666                             |
| 9/32       | 5/16          | 3/4           | 2-1/2 | 0321469                         | 0322597                             | 0321675                         | 0322667                             |
| 5/16       | 5/16          | 13/16         | 2-1/2 | 0321470                         | 0322598                             | 0321676                         | 0322668                             |
| 11/32      | 3/8           | 1             | 2-1/2 | 0321471                         | 0322599                             | 0321677                         | 0322669                             |
| 3/8        | 3/8           | 1             | 2-1/2 | 0321472                         | 0322600                             | 0321678                         | 0322670                             |
| 7/16       | 7/16          | 1             | 2-1/2 | 0321473                         | 0322601                             | 0321679                         | 0322671                             |
| 1/2        | 1/2           | 1             | 3     | 0321474                         | 0322602                             | 0321680                         | 0322672                             |
| 9/16       | 9/16          | 1-1/4         | 3-1/2 | 0321475                         | 0322603                             | 0321681                         | 0322673                             |
| 5/8        | 5/8           | 1-1/4         | 3-1/2 | 0321476                         | 0322604                             | 0321682                         | 0322674                             |
| 11/16      | 3/4           | 1-1/2         | 4     | 0321477                         | 0322605                             | 0321683                         | 0322675                             |
| 3/4        | 3/4           | 1-1/2         | 4     | 0321478                         | 0322606                             | 0321684                         | 0322676                             |
| 7/8        | 7/8           | 1-1/2         | 4     | 0321479                         | 0322607                             | 0321685                         | 0322677                             |
| 1          | 1             | 1-1/2         | 4     | 0321480                         | 0322608                             | 0321686                         | 0322678                             |

### LONG LENGTH

| DIMENSIONS |               |               |       | 2 Flute<br>Uncoated<br>Part No. | 4 Flute<br>Uncoated<br>Part No. |
|------------|---------------|---------------|-------|---------------------------------|---------------------------------|
| Diameter   | Shank<br>Dia. | Cut<br>Length | OAL   |                                 |                                 |
| 1/8        | 1/8           | 3/4           | 2-1/4 | 0321509                         | 0321715                         |
| 3/16       | 3/16          | 3/4           | 2-1/2 | 0321511                         | 0321717                         |
| 1/4        | 1/4           | 1-1/8         | 3     | 0321512                         | 0321718                         |
| 5/16       | 5/16          | 1-1/8         | 3     | 0321513                         | 0321719                         |
| 3/8        | 3/8           | 1-1/8         | 3     | 0321514                         | 0321720                         |
| 7/16       | 7/16          | 2             | 4     | 0321515                         | 0321721                         |
| 1/2        | 1/2           | 2             | 4     | 0321516                         | 0321722                         |
| 5/8        | 5/8           | 2-1/4         | 5     | 0321517                         | 0321723                         |
| 3/4        | 3/4           | 2-1/4         | 5     | 0321518                         | 0321724                         |
| 1          | 1             | 2-1/4         | 5     | 0321519                         | 0321725                         |

### EXTRA LONG LENGTH

| DIMENSIONS |               |               |     | 2 Flute<br>Uncoated<br>Part No. | 4 Flute<br>Uncoated<br>Part No. |
|------------|---------------|---------------|-----|---------------------------------|---------------------------------|
| Diameter   | Shank<br>Dia. | Cut<br>Length | OAL |                                 |                                 |
| 1/8        | 1/8           | 1             | 3   | 0321520                         | 0321726                         |
| 3/16       | 3/16          | 1-1/8         | 3   | 0321522                         | 0321728                         |
| 1/4        | 1/4           | 1-1/2         | 4   | 0321523                         | 0321729                         |
| 5/16       | 5/16          | 1-5/8         | 4   | 0321524                         | 0321730                         |
| 3/8        | 3/8           | 1-3/4         | 4   | 0321525                         | 0321731                         |
| 7/16       | 7/16          | 3             | 6   | 0321526                         | 0321732                         |
| 1/2        | 1/2           | 3             | 6   | 0321527                         | 0321733                         |
| 5/8        | 5/8           | 3             | 6   | 0321528                         | 0321734                         |
| 3/4        | 3/4           | 3             | 6   | 0321529                         | 0321735                         |
| 1          | 1             | 3             | 6   | 0321530                         | 0321736                         |





# CARBIDE END MILLS

Carbide End Mills

## Suggested Speeds & Feeds For Solid Carbide End Mills (Peripheral Milling)

| Material                 | Speed (SFM) | FEED RATE   |             |             |            |           |
|--------------------------|-------------|-------------|-------------|-------------|------------|-----------|
|                          |             | 1/8"        | 1/4"        | 1/2"        | 3/4"       | 1"        |
| Aluminum/Aluminum Alloys | 850-Max     | .001-.004   | .002-.006   | .006-.009   | .008-.015  | .010-.015 |
| Brass & Soft Bronze      | 400-550     | .001-.002   | .002-.004   | .004-.008   | .006-.010  | .008-.012 |
| Bronze                   | 350-400     | .001-.002   | .002-.004   | .004-.008   | .006-.010  | .008-.012 |
| Copper/Copper Alloys     | 500-900     | .001-.002   | .002-.004   | .003-.006   | .006-.008  | .007-.010 |
| Cast Iron/Ductile        | 250-500     | .0004-.0008 | .0008-.0015 | .002-.004   | .003-.005  | .004-.006 |
| Cast Iron/Gray           | 500-750     | .001        | .001-.002   | .004-.008   | .005-.007  | .006-.010 |
| Cast Iron/Malleable      | 250-500     | .0005       | .0008-.0015 | .002-.005   | .004-.005  | .005-.009 |
| Magnesium/Alloys         | 1000-Max    | .001-.003   | .002-.004   | .006-.008   | .008-.012  | .010-.014 |
| Nickel Alloys            | 150-250     | .0005       | .0005-.001  | .001-.002   | .002-.003  | .003-.004 |
| Stainless Steels (soft)  | 250-400     | .0003-.0008 | .001-.002   | .001-.003   | .0025-.005 | .004-.008 |
| Stainless Steels (hard)  | 150-250     | .0002-.0005 | .0005-.001  | .0006-.0015 | .0015-.003 | .003-.005 |
| Titanium (soft)          | 150-300     | .0002-.0005 | .0005-.0015 | .0015-.003  | .0025-.004 | .003-.006 |
| Titanium (hard)          | 100-200     | .0001-.0003 | .0003-.0005 | .0005-.001  | .001-.002  | .002-.004 |
| Low Carbon Steel         | 250-400     | .0005       | .001        | .003        | .005       | .006      |
| Med Carbon Steel         | 150-300     | .0005       | .001        | .003        | .005       | .006      |
| Steel Alloys/39-48 Rc    | 100-250     | .0003       | .0005       | .001        | .002       | .003      |
| Steel Alloys/46-51 Rc    | 75-150      | .0002       | .0005       | .001        | .002       | .003      |
| Tool Steel               | 200-250     | .0002-.0005 | .0005-.001  | .001-.003   | .002-.005  | .003-.006 |
| Plastics                 | 800-1600    | .0015       | .003        | .006        | .010       | .015      |

The (SFM) should be reduced approximately 20-30% for slotting applications.

## 2 & 4 FLUTE DOUBLE END

### STUB LENGTH

#### FEATURES:

- 10% Cobalt
- Submicrograin Carbide
- 30° Helix Angle
- Center Cutting
- AlTiN Coating
- Uncoated

#### TOLERANCES:

+ .000/- .0025

| DIMENSIONS |            |            |       | 2 Flute           | 2 Flute               | 4 Flute               | 4 Flute               |
|------------|------------|------------|-------|-------------------|-----------------------|-----------------------|-----------------------|
| Diameter   | Shank Dia. | Cut Length | OAL   | Uncoated Part No. | AlTiN Coated Part No. | Laser Coated Part No. | AlTiN Coated Part No. |
| 1/16       | 1/8        | 1/8        | 1-1/2 | 0321533           | 0322611               | 0321879               | 0322713               |
| 3/32       | 1/8        | 3/16       | 1-1/2 | 0321535           | 0322613               | 0321881               | 0322715               |
| 1/8        | 1/8        | 1/4        | 1-1/2 | 0321537           | 0322615               | 0321883               | 0322717               |
| 5/32       | 3/16       | 5/16       | 2     | 0321539           | 0322617               | 0321885               | 0322719               |
| 3/16       | 3/16       | 3/8        | 2     | 0321541           | 0322619               | 0321887               | 0322721               |
| 7/32       | 1/4        | 1/2        | 2-1/2 | 0321543           | 0322621               | 0321889               | 0322723               |
| 1/4        | 1/4        | 1/2        | 2-1/2 | 0321545           | 0322623               | 0321891               | 0322725               |
| 5/16       | 5/16       | 1/2        | 2-1/2 | 0321547           | 0322625               | 0321893               | 0322727               |
| 3/8        | 3/8        | 9/16       | 2-1/2 | 0321549           | 0322627               | 0321895               | 0322729               |
| 7/16       | 7/16       | 5/8        | 2-1/2 | 0321550           | 0322628               | 0321896               | 0322730               |
| 1/2        | 1/2        | 5/8        | 3     | 0321551           | 0322629               | 0321897               | 0322731               |



## 2 & 4 FLUTE DOUBLE END BALL NOSE

### STUB LENGTH

#### FEATURES:

- 10% Cobalt
- Submicrograin Carbide
- 30° Helix Angle
- Center Cutting
- AlTiN Coating
- Uncoated

#### TOLERANCES:

+ .000/- .0025

| DIMENSIONS |            |            |       | 2 Flute           | 2 Flute               | 4 Flute           | 4 Flute               |
|------------|------------|------------|-------|-------------------|-----------------------|-------------------|-----------------------|
| Diameter   | Shank Dia. | Cut Length | OAL   | Uncoated Part No. | AlTiN Coated Part No. | Uncoated Part No. | AlTiN Coated Part No. |
| 1/16       | 1/8        | 1/8        | 1-1/2 | 0321575           | 0322632               | 0321921           | 0322734               |
| 3/32       | 1/8        | 3/16       | 1-1/2 | 0321577           | 0322634               | 0321923           | 0322736               |
| 1/8        | 1/8        | 1/4        | 1-1/2 | 0321579           | 0322636               | 0321925           | 0322738               |
| 5/32       | 3/16       | 5/16       | 2     | 0321581           | 0322638               | 0321927           | 0322740               |
| 3/16       | 3/16       | 3/8        | 2     | 0321583           | 0322640               | 0321929           | 0322742               |
| 7/32       | 1/4        | 1/2        | 2-1/2 | 0321585           | 0322642               | 0321931           | 0322744               |
| 1/4        | 1/4        | 1/2        | 2-1/2 | 0321587           | 0322644               | 0321933           | 0322746               |
| 5/16       | 5/16       | 1/2        | 2-1/2 | 0321589           | 0322646               | 0321935           | 0322748               |
| 3/8        | 3/8        | 9/16       | 2-1/2 | 0321591           | 0322648               | 0321937           | 0322750               |
| 7/16       | 7/16       | 5/8        | 2-1/2 | 0321592           | 0322649               | 0321938           | 0322751               |
| 1/2        | 1/2        | 5/8        | 3     | 0321593           | 0322650               | 0321939           | 0322752               |



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