



**BIG CREEK**  
CUTTING TOOLS



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# Aluminum Alloys



| Carbide | 2 Flute<br>Center<br>Cutting | 45° Helix | Bright | ZrN   | +.000 -.002 | HRC <40          | ZrN add a (1) after<br>leading (2) for EDP:<br>(e.g. - 210000) | Series: A12 |                      |                   |
|---------|------------------------------|-----------|--------|-------|-------------|------------------|----------------------------------------------------------------|-------------|----------------------|-------------------|
| CUT DIA | SHANK DIA                    | FLUTES    | LOC    | OAL   | CORNER      | PART NAME        | BRIGHT EDP                                                     | ZRN EDP     | PRICE LIST<br>BRIGHT | PRICE LIST<br>ZrN |
| 1/8     | 1/8                          | 2         | 1/4    | 1-1/2 | SQ          | AI2-S-.1250-SQ   | 200000                                                         | 210000      | \$ 24.33             | \$ 27.37          |
| 1/8     | 1/8                          | 2         | 1/4    | 1-1/2 | 0.010       | AI2-S-.1250-R010 | 200010                                                         | 210010      | \$ 28.47             | \$ 32.03          |
| 1/8     | 1/8                          | 2         | 1/4    | 1-1/2 | 0.020       | AI2-S-.1250-R020 | 200020                                                         | 210020      | \$ 28.47             | \$ 32.03          |
| 1/8     | 1/8                          | 2         | 1/4    | 1-1/2 | BALL        | AI2-S-.1250-BN   | 200030                                                         | 210030      | \$ 37.39             | \$ 42.06          |
| 1/8     | 1/8                          | 2         | 1/2    | 2     | SQ          | AI2-R-.1250-SQ   | 200040                                                         | 210040      | \$ 24.50             | \$ 27.56          |
| 1/8     | 1/8                          | 2         | 1/2    | 2     | 0.010       | AI2-R-.1250-R010 | 200050                                                         | 210050      | \$ 28.66             | \$ 32.24          |
| 1/8     | 1/8                          | 2         | 1/2    | 2     | 0.020       | AI2-R-.1250-R020 | 200060                                                         | 210060      | \$ 28.66             | \$ 32.24          |
| 1/8     | 1/8                          | 2         | 1/2    | 2     | BALL        | AI2-R-.1250-BN   | 200070                                                         | 210070      | \$ 31.61             | \$ 35.56          |
| 3/16    | 3/16                         | 2         | 5/16   | 2     | SQ          | AI2-S-.1875-SQ   | 200080                                                         | 210080      | \$ 25.51             | \$ 28.70          |
| 3/16    | 3/16                         | 2         | 5/16   | 2     | 0.015       | AI2-S-.1875-R015 | 200090                                                         | 210090      | \$ 29.84             | \$ 33.57          |
| 3/16    | 3/16                         | 2         | 5/16   | 2     | 0.030       | AI2-S-.1875-R030 | 200100                                                         | 210100      | \$ 29.84             | \$ 33.57          |
| 3/16    | 3/16                         | 2         | 5/16   | 2     | BALL        | AI2-S-.1875-BN   | 200110                                                         | 210110      | \$ 32.91             | \$ 37.02          |
| 3/16    | 3/16                         | 2         | 9/16   | 2     | SQ          | AI2-R-.1875-SQ   | 200120                                                         | 210120      | \$ 26.92             | \$ 30.29          |
| 3/16    | 3/16                         | 2         | 9/16   | 2     | 0.015       | AI2-R-.1875-R015 | 200130                                                         | 210130      | \$ 31.50             | \$ 35.44          |
| 3/16    | 3/16                         | 2         | 9/16   | 2     | 0.030       | AI2-R-.1875-R030 | 200140                                                         | 210140      | \$ 31.50             | \$ 35.44          |
| 3/16    | 3/16                         | 2         | 9/16   | 2     | BALL        | AI2-R-.1875-BN   | 200150                                                         | 210150      | \$ 34.73             | \$ 39.07          |
| 3/16    | 3/16                         | 2         | 3/4    | 2-1/2 | SQ          | AI2-L-.1875-SQ   | 200160                                                         | 210160      | \$ 29.20             | \$ 32.85          |
| 3/16    | 3/16                         | 2         | 3/4    | 2-1/2 | 0.015       | AI2-L-.1875-R015 | 200170                                                         | 210170      | \$ 34.17             | \$ 38.44          |
| 3/16    | 3/16                         | 2         | 3/4    | 2-1/2 | 0.030       | AI2-L-.1875-R030 | 200180                                                         | 210180      | \$ 34.17             | \$ 38.44          |
| 3/16    | 3/16                         | 2         | 3/4    | 2-1/2 | BALL        | AI2-L-.1875-BN   | 200190                                                         | 210190      | \$ 37.67             | \$ 42.38          |
| 1/4     | 1/4                          | 2         | 3/8    | 2     | SQ          | AI2-S-.2500-SQ   | 200200                                                         | 210200      | \$ 27.70             | \$ 31.16          |
| 1/4     | 1/4                          | 2         | 3/8    | 2     | 0.015       | AI2-S-.2500-R015 | 200210                                                         | 210210      | \$ 32.40             | \$ 36.45          |
| 1/4     | 1/4                          | 2         | 3/8    | 2     | 0.030       | AI2-S-.2500-R030 | 200220                                                         | 210220      | \$ 32.40             | \$ 36.45          |
| 1/4     | 1/4                          | 2         | 3/8    | 2     | BALL        | AI2-S-.2500-BN   | 200230                                                         | 210230      | \$ 35.73             | \$ 40.20          |
| 1/4     | 1/4                          | 2         | 5/8    | 2-1/2 | SQ          | AI2-R-.2500-SQ   | 200240                                                         | 210240      | \$ 29.34             | \$ 33.01          |
| 1/4     | 1/4                          | 2         | 5/8    | 2-1/2 | 0.015       | AI2-R-.2500-R015 | 200250                                                         | 210250      | \$ 34.34             | \$ 38.63          |
| 1/4     | 1/4                          | 2         | 5/8    | 2-1/2 | 0.030       | AI2-R-.2500-R030 | 200260                                                         | 210260      | \$ 34.34             | \$ 38.63          |
| 1/4     | 1/4                          | 2         | 5/8    | 2-1/2 | BALL        | AI2-R-.2500-BN   | 200270                                                         | 210270      | \$ 37.85             | \$ 42.58          |
| 1/4     | 1/4                          | 2         | 3/4    | 2-1/2 | SQ          | AI2-M-.2500-SQ   | 200280                                                         | 210280      | \$ 30.28             | \$ 34.07          |
| 1/4     | 1/4                          | 2         | 3/4    | 2-1/2 | 0.015       | AI2-M-.2500-R015 | 200290                                                         | 210290      | \$ 35.43             | \$ 39.86          |
| 1/4     | 1/4                          | 2         | 3/4    | 2-1/2 | 0.030       | AI2-M-.2500-R030 | 200300                                                         | 210300      | \$ 35.43             | \$ 39.86          |
| 1/4     | 1/4                          | 2         | 3/4    | 2-1/2 | BALL        | AI2-M-.2500-BN   | 200310                                                         | 210310      | \$ 39.06             | \$ 43.94          |
| 1/4     | 1/4                          | 2         | 1      | 3     | SQ          | AI2-L-.2500-SQ   | 200320                                                         | 210320      | \$ 41.95             | \$ 47.19          |
| 1/4     | 1/4                          | 2         | 1      | 3     | 0.015       | AI2-L-.2500-R015 | 200330                                                         | 210330      | \$ 49.08             | \$ 55.22          |
| 1/4     | 1/4                          | 2         | 1      | 3     | 0.030       | AI2-L-.2500-R030 | 200340                                                         | 210340      | \$ 49.08             | \$ 55.22          |
| 1/4     | 1/4                          | 2         | 1      | 3     | BALL        | AI2-L-.2500-BN   | 200350                                                         | 210350      | \$ 54.11             | \$ 60.87          |
| 5/16    | 5/16                         | 2         | 1/2    | 2     | SQ          | AI2-S-.3125-SQ   | 200360                                                         | 210360      | \$ 33.29             | \$ 37.45          |
| 5/16    | 5/16                         | 2         | 1/2    | 2     | 0.015       | AI2-S-.3125-R015 | 200370                                                         | 210370      | \$ 38.94             | \$ 43.81          |
| 5/16    | 5/16                         | 2         | 1/2    | 2     | 0.030       | AI2-S-.3125-R030 | 200380                                                         | 210380      | \$ 38.94             | \$ 43.81          |
| 5/16    | 5/16                         | 2         | 1/2    | 2     | BALL        | AI2-S-.3125-BN   | 200390                                                         | 210390      | \$ 42.94             | \$ 48.31          |
| 5/16    | 5/16                         | 2         | 13/16  | 2-1/2 | SQ          | AI2-R-.3125-SQ   | 200400                                                         | 210400      | \$ 35.57             | \$ 40.02          |
| 5/16    | 5/16                         | 2         | 13/16  | 2-1/2 | 0.015       | AI2-R-.3125-R015 | 200410                                                         | 210410      | \$ 41.61             | \$ 46.81          |
| 5/16    | 5/16                         | 2         | 13/16  | 2-1/2 | 0.030       | AI2-R-.3125-R030 | 200420                                                         | 210420      | \$ 41.61             | \$ 46.81          |
| 5/16    | 5/16                         | 2         | 13/16  | 2-1/2 | BALL        | AI2-R-.3125-BN   | 200430                                                         | 210430      | \$ 45.89             | \$ 51.63          |
| 3/8     | 3/8                          | 2         | 1/2    | 2     | SQ          | AI2-S-.3750-SQ   | 200440                                                         | 210440      | \$ 37.84             | \$ 42.57          |
| 3/8     | 3/8                          | 2         | 1/2    | 2     | 0.015       | AI2-S-.3750-R015 | 200450                                                         | 210450      | \$ 44.27             | \$ 49.80          |
| 3/8     | 3/8                          | 2         | 1/2    | 2     | 0.030       | AI2-S-.3750-R030 | 200460                                                         | 210460      | \$ 44.27             | \$ 49.80          |
| 3/8     | 3/8                          | 2         | 1/2    | 2     | BALL        | AI2-S-.3750-BN   | 200470                                                         | 210470      | \$ 48.81             | \$ 54.91          |
| 3/8     | 3/8                          | 2         | 1      | 2-1/2 | SQ          | AI2-R-.3750-SQ   | 200480                                                         | 210480      | \$ 47.15             | \$ 53.04          |
| 3/8     | 3/8                          | 2         | 1      | 2-1/2 | 0.015       | AI2-R-.3750-R015 | 200490                                                         | 210490      | \$ 55.17             | \$ 62.07          |
| 3/8     | 3/8                          | 2         | 1      | 2-1/2 | 0.030       | AI2-R-.3750-R030 | 200500                                                         | 210500      | \$ 55.17             | \$ 62.07          |
| 3/8     | 3/8                          | 2         | 1      | 2-1/2 | BALL        | AI2-R-.3750-BN   | 200510                                                         | 210510      | \$ 60.82             | \$ 68.42          |

# Aluminum Alloys



| Carbide | 2 Flute<br>Center<br>Cutting | 45° Helix | Bright | ZrN   | + .000 - .002 | HRC <40          | ZrN add a (1) after<br>leading (2) for EDP:<br>(e.g. - 210000) | Series: Al2 |                      |                   |
|---------|------------------------------|-----------|--------|-------|---------------|------------------|----------------------------------------------------------------|-------------|----------------------|-------------------|
| CUT DIA | SHANK DIA                    | FLUTES    | LOC    | OAL   | CORNER        | PART NAME        | BRIGHT EDP                                                     | ZRN EDP     | PRICE LIST<br>BRIGHT | PRICE LIST<br>ZrN |
| 3/8     | 3/8                          | 2         | 1-1/4  | 3     | SQ            | Al2-M-.3750-SQ   | 200520                                                         | 210520      | \$ 49.98             | \$ 56.23          |
| 3/8     | 3/8                          | 2         | 1-1/4  | 3     | 0.015         | Al2-M-.3750-R015 | 200530                                                         | 210530      | \$ 58.47             | \$ 65.78          |
| 3/8     | 3/8                          | 2         | 1-1/4  | 3     | 0.030         | Al2-M-.3750-R030 | 200540                                                         | 210540      | \$ 58.47             | \$ 65.78          |
| 3/8     | 3/8                          | 2         | 1-1/4  | 3     | BALL          | Al2-M-.3750-BN   | 200550                                                         | 210550      | \$ 64.47             | \$ 72.53          |
| 1/2     | 1/2                          | 2         | 5/8    | 2-1/2 | SQ            | Al2-S-.5000-SQ   | 200560                                                         | 210560      | \$ 55.94             | \$ 62.93          |
| 1/2     | 1/2                          | 2         | 5/8    | 2-1/2 | 0.015         | Al2-S-.5000-R015 | 200570                                                         | 210570      | \$ 65.45             | \$ 73.63          |
| 1/2     | 1/2                          | 2         | 5/8    | 2-1/2 | 0.030         | Al2-S-.5000-R030 | 200580                                                         | 210580      | \$ 65.45             | \$ 73.63          |
| 1/2     | 1/2                          | 2         | 5/8    | 2-1/2 | 0.060         | Al2-S-.5000-R060 | 200590                                                         | 210590      | \$ 65.45             | \$ 73.63          |
| 1/2     | 1/2                          | 2         | 5/8    | 2-1/2 | BALL          | Al2-S-.5000-BN   | 200600                                                         | 210600      | \$ 72.16             | \$ 81.18          |
| 1/2     | 1/2                          | 2         | 1      | 3     | SQ            | Al2-R-.5000-SQ   | 200610                                                         | 210610      | \$ 63.43             | \$ 71.36          |
| 1/2     | 1/2                          | 2         | 1      | 3     | 0.015         | Al2-R-.5000-R015 | 200620                                                         | 210620      | \$ 74.21             | \$ 83.49          |
| 1/2     | 1/2                          | 2         | 1      | 3     | 0.030         | Al2-R-.5000-R030 | 200630                                                         | 210630      | \$ 74.21             | \$ 83.49          |
| 1/2     | 1/2                          | 2         | 1      | 3     | 0.060         | Al2-R-.5000-R060 | 200640                                                         | 210640      | \$ 74.21             | \$ 83.49          |
| 1/2     | 1/2                          | 2         | 1      | 3     | BALL          | Al2-R-.5000-BN   | 200650                                                         | 210650      | \$ 81.82             | \$ 92.05          |
| 1/2     | 1/2                          | 2         | 1-1/4  | 3     | SQ            | Al2-M-.5000-SQ   | 200660                                                         | 210660      | \$ 67.80             | \$ 76.28          |
| 1/2     | 1/2                          | 2         | 1-1/4  | 3     | 0.015         | Al2-M-.5000-R015 | 200670                                                         | 210670      | \$ 79.32             | \$ 89.24          |
| 1/2     | 1/2                          | 2         | 1-1/4  | 3     | 0.030         | Al2-M-.5000-R030 | 200680                                                         | 210680      | \$ 79.32             | \$ 89.24          |
| 1/2     | 1/2                          | 2         | 1-1/4  | 3     | 0.060         | Al2-M-.5000-R060 | 200690                                                         | 210690      | \$ 79.32             | \$ 89.24          |
| 1/2     | 1/2                          | 2         | 1-1/4  | 3     | BALL          | Al2-M-.5000-BN   | 200700                                                         | 210700      | \$ 87.46             | \$ 98.39          |
| 5/8     | 5/8                          | 2         | 1-1/4  | 3-1/2 | SQ            | Al2-R-.6250-SQ   | 200710                                                         | 210710      | \$ 109.40            | \$ 123.08         |
| 5/8     | 5/8                          | 2         | 1-1/4  | 3-1/2 | 0.015         | Al2-R-.6250-R015 | 200720                                                         | 210720      | \$ 129.09            | \$ 145.23         |
| 5/8     | 5/8                          | 2         | 1-1/4  | 3-1/2 | 0.030         | Al2-R-.6250-R030 | 200730                                                         | 210730      | \$ 129.09            | \$ 145.23         |
| 5/8     | 5/8                          | 2         | 1-1/4  | 3-1/2 | 0.060         | Al2-R-.6250-R060 | 200740                                                         | 210740      | \$ 129.09            | \$ 145.23         |
| 5/8     | 5/8                          | 2         | 1-1/4  | 3-1/2 | BALL          | Al2-R-.6250-BN   | 200750                                                         | 210750      | \$ 152.33            | \$ 171.37         |
| 5/8     | 5/8                          | 2         | 1-5/8  | 3-1/2 | SQ            | Al2-M-.6250-SQ   | 200760                                                         | 210760      | \$ 139.42            | \$ 156.85         |
| 5/8     | 5/8                          | 2         | 1-5/8  | 3-1/2 | 0.015         | Al2-M-.6250-R015 | 200770                                                         | 210770      | \$ 164.50            | \$ 185.06         |
| 5/8     | 5/8                          | 2         | 1-5/8  | 3-1/2 | 0.030         | Al2-M-.6250-R030 | 200780                                                         | 210780      | \$ 164.50            | \$ 185.06         |
| 5/8     | 5/8                          | 2         | 1-5/8  | 3-1/2 | 0.060         | Al2-M-.6250-R060 | 200790                                                         | 210790      | \$ 164.50            | \$ 185.06         |
| 5/8     | 5/8                          | 2         | 1-5/8  | 3-1/2 | BALL          | Al2-M-.6250-BN   | 200800                                                         | 210800      | \$ 194.12            | \$ 218.39         |
| 3/4     | 3/4                          | 2         | 1-5/8  | 4     | SQ            | Al2-R-.7500-SQ   | 200810                                                         | 210810      | \$ 177.66            | \$ 199.87         |
| 3/4     | 3/4                          | 2         | 1-5/8  | 4     | 0.015         | Al2-R-.7500-R015 | 200820                                                         | 210820      | \$ 209.64            | \$ 235.85         |
| 3/4     | 3/4                          | 2         | 1-5/8  | 4     | 0.030         | Al2-R-.7500-R030 | 200830                                                         | 210830      | \$ 209.64            | \$ 235.85         |
| 3/4     | 3/4                          | 2         | 1-5/8  | 4     | 0.060         | Al2-R-.7500-R060 | 200840                                                         | 210840      | \$ 209.64            | \$ 235.85         |
| 3/4     | 3/4                          | 2         | 1-5/8  | 4     | BALL          | Al2-R-.7500-BN   | 200850                                                         | 210850      | \$ 247.37            | \$ 278.29         |
| 3/4     | 3/4                          | 2         | 2-1/4  | 5     | SQ            | Al2-M-.7500-SQ   | 200860                                                         | 210860      | \$ 226.41            | \$ 254.71         |
| 3/4     | 3/4                          | 2         | 2-1/4  | 5     | 0.015         | Al2-M-.7500-R015 | 200870                                                         | 210870      | \$ 244.52            | \$ 275.09         |
| 3/4     | 3/4                          | 2         | 2-1/4  | 5     | 0.030         | Al2-M-.7500-R030 | 200880                                                         | 210880      | \$ 244.52            | \$ 275.09         |
| 3/4     | 3/4                          | 2         | 2-1/4  | 5     | 0.060         | Al2-M-.7500-R060 | 200890                                                         | 210890      | \$ 244.52            | \$ 275.09         |
| 3/4     | 3/4                          | 2         | 2-1/4  | 5     | BALL          | Al2-M-.7500-BN   | 200900                                                         | 210900      | \$ 312.45            | \$ 351.51         |

| Material Guide |                              |                                                                                                 | Condition             | SFM  | CHIP PER TOOTH |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
|----------------|------------------------------|-------------------------------------------------------------------------------------------------|-----------------------|------|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| ISO-N          | Aluminum+<br>Aluminum Alloys | 6061-T6/T651, 7075-T6, 2024-T4/<br>T6, 2014                                                     | Slotting              | 1000 | 0.0004         | 0.0006 | 0.0008 | 0.0012 | 0.0016 | 0.0016 | 0.0016 | 0.0018 | 0.0020 | 0.0022 | 0.0024 | 0.0026 | 0.0028 | 0.0030 | 0.0032 | 0.0040 | 0.0048 | 0.0056 |
|                |                              |                                                                                                 | ≤ 75% Dia. Pro illing | 1200 | 0.0010         | 0.0015 | 0.0020 | 0.0022 | 0.0024 | 0.0026 | 0.0032 | 0.0036 | 0.0040 | 0.0044 | 0.0048 | 0.0052 | 0.0054 | 0.0060 | 0.0064 | 0.0080 | 0.0096 | 0.0112 |
|                | Copper                       | Red Brass, High Lead Brass, Yellow Brass,<br>C-17200, Navel Brass, A-17, High Silicon<br>Bronze | Slotting              | 800  | 0.0004         | 0.0006 | 0.0008 | 0.0008 | 0.0009 | 0.0012 | 0.0016 | 0.0017 | 0.0018 | 0.0019 | 0.0020 | 0.0021 | 0.0220 | 0.0023 | 0.0024 | 0.0032 | 0.0032 | 0.0040 |
|                |                              |                                                                                                 | ≤ 75% Dia. Pro illing | 875  | 0.0006         | 0.0007 | 0.0011 | 0.0011 | 0.0011 | 0.0016 | 0.0022 | 0.0024 | 0.0025 | 0.0027 | 0.0028 | 0.0029 | 0.0030 | 0.0032 | 0.0034 | 0.0045 | 0.0045 | 0.0056 |
|                | Copper Alloys                | Low Silicon Bronze, Alum/Bronze,<br>Beryllium Copper, Nickel Silver,<br>Oxygen-Free Copper      | Slotting              | 500  | 0.0004         | 0.0006 | 0.0008 | 0.0080 | 0.0009 | 0.0012 | 0.0016 | 0.0017 | 0.0018 | 0.0019 | 0.0020 | 0.0021 | 0.0220 | 0.0023 | 0.0024 | 0.0032 | 0.0032 | 0.0040 |
|                |                              |                                                                                                 | ≤ 75% Dia. Pro illing | 600  | 0.0006         | 0.0007 | 0.0011 | 0.0011 | 0.0012 | 0.0017 | 0.0022 | 0.0024 | 0.0025 | 0.0027 | 0.0028 | 0.0030 | 0.0031 | 0.0032 | 0.0034 | 0.0045 | 0.0045 | 0.0056 |
|                | Magnesium                    |                                                                                                 | Slotting              | 1000 | 0.0004         | 0.0006 | 0.0008 | 0.0012 | 0.0016 | 0.0017 | 0.0018 | 0.0020 | 0.0021 | 0.0022 | 0.0024 | 0.0026 | 0.0028 | 0.0030 | 0.0032 | 0.0048 | 0.0064 | 0.0072 |
|                |                              |                                                                                                 | ≤ 75% Dia. Pro illing | 1200 | 0.0010         | 0.0015 | 0.0020 | 0.0022 | 0.0024 | 0.0028 | 0.0032 | 0.0036 | 0.0040 | 0.0044 | 0.0048 | 0.0052 | 0.0054 | 0.0060 | 0.0064 | 0.0080 | 0.0096 | 0.0112 |
|                | Plastics                     | Acrylics, Polycarbonate, Phenolics                                                              | Slotting              | 350  | 0.0010         | 0.0015 | 0.0020 | 0.0022 | 0.0024 | 0.0028 | 0.0032 | 0.0036 | 0.0040 | 0.0044 | 0.0048 | 0.0052 | 0.0054 | 0.0060 | 0.0064 | 0.0080 | 0.0096 | 0.0100 |
|                |                              |                                                                                                 | ≤ 75% Dia. Pro illing | 400  | 0.0004         | 0.0006 | 0.0008 | 0.0012 | 0.0016 | 0.0020 | 0.0024 | 0.0026 | 0.0028 | 0.0030 | 0.0032 | 0.0036 | 0.0040 | 0.0044 | 0.0048 | 0.0064 | 0.0080 | 0.0090 |

| Material Guide |                              |                                                                                           | Condition             | M/<br>MIN | CHIP PER TOOTH - METRIC |        |        |        |        |        |        |        |        |        |        |        |
|----------------|------------------------------|-------------------------------------------------------------------------------------------|-----------------------|-----------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| ISO-N          | Aluminum+<br>Aluminum Alloys | 6061-T6/T651, 7075-T6, 2024-T4/T6, 2014                                                   | Slotting              | 400       | 0.0203                  | 0.0406 | 0.0456 | 0.0508 | 0.0610 | 0.0813 | 0.1016 | 0.1056 | 0.1118 | 0.1153 | 0.1219 | 0.1422 |
|                |                              |                                                                                           | ≤ 75% Dia. Pro illing | 550       | 0.0508                  | 0.0813 | 0.0914 | 0.1016 | 0.1219 | 0.1626 | 0.2032 | 0.2112 | 0.2184 | 0.2302 | 0.2438 | 0.2845 |
|                | Copper                       | Red Brass, High Lead Brass, Yellow Brass, C-17200, Navel Brass, A-17, High Silicon Bronze | Slotting              | 243       | 0.0203                  | 0.0406 | 0.0435 | 0.0457 | 0.0508 | 0.0610 | 0.0813 | 0.0832 | 0.0836 | 0.0840 | 0.0850 | 0.1016 |
|                |                              |                                                                                           | ≤ 75% Dia. Pro illing | 325       | 0.0284                  | 0.0569 | 0.0601 | 0.0635 | 0.0711 | 0.0853 | 0.1138 | 0.1141 | 0.1143 | 0.1145 | 0.1147 | 0.1422 |
|                | Copper Alloys                | Low Silicon Bronze, Alum/Bronze, Beryllium Copper, Nickel Silver, Oxygen-Free Copper      | Slotting              | 152       | 0.0203                  | 0.0406 | 0.0432 | 0.0457 | 0.0508 | 0.0610 | 0.0813 | 0.0834 | 0.0836 | 0.0840 | 0.0854 | 0.1016 |
|                |                              |                                                                                           | ≤ 75% Dia. Pro illing | 182       | 0.0284                  | 0.0569 | 0.0602 | 0.0635 | 0.0711 | 0.0853 | 0.1138 | 0.1141 | 0.1143 | 0.1145 | 0.1147 | 0.1422 |
|                | Magnesium                    |                                                                                           | Slotting              | 300       | 0.0203                  | 0.0406 | 0.0452 | 0.0508 | 0.0610 | 0.0813 | 0.1219 | 0.1318 | 0.1422 | 0.1521 | 0.1626 | 0.1829 |
|                |                              |                                                                                           | ≤ 75% Dia. Pro illing | 350       | 0.0508                  | 0.0813 | 0.0925 | 0.1016 | 0.1219 | 0.1626 | 0.2032 | 0.2112 | 0.2235 | 0.2336 | 0.2438 | 0.2845 |
|                | Plastics                     | Acrylics, Polycarbonate, Phenolics                                                        | Slotting              | 150       | 0.0203                  | 0.0610 | 0.0753 | 0.0914 | 0.0813 | 0.1219 | 0.1626 | 0.1727 | 0.1829 | 0.1926 | 0.2032 | 0.2845 |
|                |                              |                                                                                           | ≤ 75% Dia. Pro illing | 180       | 0.0508                  | 0.0813 | 0.0927 | 0.1016 | 0.1219 | 0.1626 | 0.2032 | 0.2138 | 0.2235 | 0.2334 | 0.2438 | 0.3048 |

# Aluminum Alloys



| Carbide | 3 Flute<br>Center<br>Cutting | 41° Helix | Bright | ZrN   | + .000 / - .002 | HRC <40          | ZrN add a (1) after<br>leading (3) for EDP:<br>(e.g. - 310000) | Series: Al3 |                      |                   |
|---------|------------------------------|-----------|--------|-------|-----------------|------------------|----------------------------------------------------------------|-------------|----------------------|-------------------|
| CUT DIA | SHANK DIA                    | FLUTES    | LOC    | OAL   | CORNER          | PART NAME        | BRIGHT EDP                                                     | ZrN EDP     | PRICE LIST<br>BRIGHT | PRICE LIST<br>ZrN |
| 1/8     | 1/8                          | 3         | 1/4    | 1-1/2 | SQ              | Al3-S-.1250-SQ   | 300000                                                         | 310000      | \$ 26.17             | \$ 29.44          |
| 1/8     | 1/8                          | 3         | 1/4    | 1-1/2 | 0.010           | Al3-S-.1250-R010 | 300010                                                         | 310010      | \$ 30.74             | \$ 34.58          |
| 1/8     | 1/8                          | 3         | 1/4    | 1-1/2 | 0.015           | Al3-S-.1250-R015 | 300020                                                         | 310020      | \$ 30.74             | \$ 34.58          |
| 1/8     | 1/8                          | 3         | 1/4    | 1-1/2 | 0.020           | Al3-S-.1250-R020 | 300030                                                         | 310030      | \$ 30.74             | \$ 34.58          |
| 1/8     | 1/8                          | 3         | 3/8    | 2     | SQ              | Al3-T-.1250-SQ   | 300040                                                         | 310040      | \$ 26.44             | \$ 29.74          |
| 1/8     | 1/8                          | 3         | 3/8    | 2     | 0.010           | Al3-T-.1250-R010 | 300050                                                         | 310050      | \$ 31.01             | \$ 34.88          |
| 1/8     | 1/8                          | 3         | 3/8    | 2     | 0.015           | Al3-T-.1250-R015 | 300060                                                         | 310060      | \$ 31.01             | \$ 34.88          |
| 1/8     | 1/8                          | 3         | 3/8    | 2     | 0.020           | Al3-T-.1250-R020 | 300070                                                         | 310070      | \$ 31.01             | \$ 34.88          |
| 1/8     | 1/8                          | 3         | 1/2    | 2     | SQ              | Al3-R-.1250-SQ   | 300080                                                         | 310080      | \$ 26.44             | \$ 29.74          |
| 1/8     | 1/8                          | 3         | 1/2    | 2     | 0.010           | Al3-R-.1250-R010 | 300090                                                         | 310090      | \$ 31.01             | \$ 34.88          |
| 1/8     | 1/8                          | 3         | 1/2    | 2     | 0.015           | Al3-R-.1250-R015 | 300100                                                         | 310100      | \$ 31.01             | \$ 34.88          |
| 1/8     | 1/8                          | 3         | 1/2    | 2     | 0.020           | Al3-R-.1250-R020 | 300110                                                         | 310110      | \$ 31.01             | \$ 34.88          |
| 3/16    | 3/16                         | 3         | 5/16   | 2     | SQ              | Al3-S-.1875-SQ   | 300120                                                         | 310120      | \$ 26.57             | \$ 29.89          |
| 3/16    | 3/16                         | 3         | 5/16   | 2     | 0.015           | Al3-S-.1875-R015 | 300130                                                         | 310130      | \$ 31.47             | \$ 35.40          |
| 3/16    | 3/16                         | 3         | 5/16   | 2     | 0.030           | Al3-S-.1875-R030 | 300140                                                         | 310140      | \$ 31.47             | \$ 35.40          |
| 3/16    | 3/16                         | 3         | 5/16   | 2     | 0.060           | Al3-S-.1875-R060 | 300150                                                         | 310150      | \$ 31.47             | \$ 35.40          |
| 3/16    | 3/16                         | 3         | 9/16   | 2     | SQ              | Al3-R-.1875-SQ   | 300160                                                         | 310160      | \$ 28.04             | \$ 31.54          |
| 3/16    | 3/16                         | 3         | 9/16   | 2     | 0.015           | Al3-R-.1875-R015 | 300170                                                         | 310170      | \$ 32.94             | \$ 37.05          |
| 3/16    | 3/16                         | 3         | 9/16   | 2     | 0.030           | Al3-R-.1875-R030 | 300180                                                         | 310180      | \$ 32.94             | \$ 37.05          |
| 3/16    | 3/16                         | 3         | 9/16   | 2     | 0.060           | Al3-R-.1875-R060 | 300190                                                         | 310190      | \$ 32.94             | \$ 37.05          |
| 3/16    | 3/16                         | 3         | 3/4    | 2-1/2 | SQ              | Al3-M-.1875-SQ   | 300200                                                         | 310200      | \$ 30.42             | \$ 34.22          |
| 3/16    | 3/16                         | 3         | 3/4    | 2-1/2 | 0.015           | Al3-M-.1875-R015 | 300210                                                         | 310210      | \$ 35.74             | \$ 40.21          |
| 3/16    | 3/16                         | 3         | 3/4    | 2-1/2 | 0.030           | Al3-M-.1875-R030 | 300220                                                         | 310220      | \$ 35.74             | \$ 40.21          |
| 3/16    | 3/16                         | 3         | 3/4    | 2-1/2 | 0.060           | Al3-M-.1875-R060 | 300230                                                         | 310230      | \$ 35.74             | \$ 40.21          |
| 1/4     | 1/4                          | 3         | 3/8    | 2     | SQ              | Al3-S-.2500-SQ   | 300240                                                         | 310240      | \$ 28.85             | \$ 32.45          |
| 1/4     | 1/4                          | 3         | 3/8    | 2     | 0.015           | Al3-S-.2500-R015 | 300250                                                         | 310250      | \$ 34.71             | \$ 39.05          |
| 1/4     | 1/4                          | 3         | 3/8    | 2     | 0.030           | Al3-S-.2500-R030 | 300260                                                         | 310260      | \$ 34.71             | \$ 39.05          |
| 1/4     | 1/4                          | 3         | 3/8    | 2     | 0.060           | Al3-S-.2500-R060 | 300270                                                         | 310270      | \$ 34.71             | \$ 39.05          |
| 1/4     | 1/4                          | 3         | 1/2    | 2-1/2 | SQ              | Al3-T-.2500-SQ   | 300280                                                         | 310280      | \$ 30.57             | \$ 34.40          |
| 1/4     | 1/4                          | 3         | 1/2    | 2-1/2 | 0.015           | Al3-T-.2500-R015 | 300290                                                         | 310290      | \$ 36.43             | \$ 40.98          |
| 1/4     | 1/4                          | 3         | 1/2    | 2-1/2 | 0.030           | Al3-T-.2500-R030 | 300300                                                         | 310300      | \$ 36.43             | \$ 40.98          |
| 1/4     | 1/4                          | 3         | 1/2    | 2-1/2 | 0.060           | Al3-T-.2500-R060 | 300310                                                         | 310310      | \$ 36.43             | \$ 40.98          |
| 1/4     | 1/4                          | 3         | 5/8    | 2-1/2 | SQ              | Al3-R-.2500-SQ   | 300320                                                         | 310320      | \$ 30.57             | \$ 34.40          |
| 1/4     | 1/4                          | 3         | 5/8    | 2-1/2 | 0.015           | Al3-R-.2500-R015 | 300330                                                         | 310330      | \$ 36.43             | \$ 40.98          |
| 1/4     | 1/4                          | 3         | 5/8    | 2-1/2 | 0.030           | Al3-R-.2500-R030 | 300340                                                         | 310340      | \$ 36.43             | \$ 40.98          |
| 1/4     | 1/4                          | 3         | 5/8    | 2-1/2 | 0.060           | Al3-R-.2500-R060 | 300350                                                         | 310350      | \$ 36.43             | \$ 40.98          |
| 1/4     | 1/4                          | 3         | 3/4    | 2-1/2 | SQ              | Al3-M-.2500-SQ   | 300360                                                         | 310360      | \$ 31.54             | \$ 35.48          |
| 1/4     | 1/4                          | 3         | 3/4    | 2-1/2 | 0.015           | Al3-M-.2500-R015 | 300370                                                         | 310370      | \$ 37.40             | \$ 42.08          |
| 1/4     | 1/4                          | 3         | 3/4    | 2-1/2 | 0.030           | Al3-M-.2500-R030 | 300380                                                         | 310380      | \$ 37.40             | \$ 42.08          |
| 1/4     | 1/4                          | 3         | 3/4    | 2-1/2 | 0.060           | Al3-M-.2500-R060 | 300390                                                         | 310390      | \$ 37.40             | \$ 42.08          |
| 1/4     | 1/4                          | 3         | 1      | 3     | SQ              | Al3-L-.2500-SQ   | 300400                                                         | 310400      | \$ 43.70             | \$ 49.16          |
| 1/4     | 1/4                          | 3         | 1      | 3     | 0.015           | Al3-L-.2500-R015 | 300410                                                         | 310410      | \$ 49.56             | \$ 55.76          |
| 1/4     | 1/4                          | 3         | 1      | 3     | 0.030           | Al3-L-.2500-R030 | 300420                                                         | 310420      | \$ 49.56             | \$ 55.76          |
| 1/4     | 1/4                          | 3         | 1      | 3     | 0.060           | Al3-L-.2500-R060 | 300430                                                         | 310430      | \$ 49.56             | \$ 55.76          |
| 5/16    | 5/16                         | 3         | 13/16  | 2-1/2 | SQ              | Al3-R-.3125-SQ   | 300440                                                         | 310440      | \$ 37.05             | \$ 41.68          |
| 5/16    | 5/16                         | 3         | 13/16  | 2-1/2 | 0.015           | Al3-R-.3125-R015 | 300450                                                         | 310450      | \$ 43.71             | \$ 49.17          |
| 5/16    | 5/16                         | 3         | 13/16  | 2-1/2 | 0.030           | Al3-R-.3125-R030 | 300460                                                         | 310460      | \$ 43.71             | \$ 49.17          |
| 5/16    | 5/16                         | 3         | 13/16  | 2-1/2 | 0.060           | Al3-R-.3125-R060 | 300470                                                         | 310470      | \$ 43.71             | \$ 49.17          |
| 5/16    | 5/16                         | 3         | 1      | 3     | SQ              | Al3-M-.3125-SQ   | 300480                                                         | 310480      | \$ 47.94             | \$ 53.93          |
| 5/16    | 5/16                         | 3         | 1      | 3     | 0.015           | Al3-M-.3125-R015 | 300490                                                         | 310490      | \$ 54.61             | \$ 61.44          |
| 5/16    | 5/16                         | 3         | 1      | 3     | 0.030           | Al3-M-.3125-R030 | 300500                                                         | 310500      | \$ 54.61             | \$ 61.44          |
| 5/16    | 5/16                         | 3         | 1      | 3     | 0.060           | Al3-M-.3125-R060 | 300510                                                         | 310510      | \$ 54.61             | \$ 61.44          |

# Aluminum Alloys



| Carbide | 3 Flute<br>Center<br>Cutting | 41° Helix | Bright | ZrN   | + .000 / - .002 | HRC <40           | ZrN add a (1) after<br>leading (3) for EDP:<br>(e.g. - 310000) | Series: A13 |                      |                   |
|---------|------------------------------|-----------|--------|-------|-----------------|-------------------|----------------------------------------------------------------|-------------|----------------------|-------------------|
| CUT DIA | SHANK DIA                    | FLUTES    | LOC    | OAL   | CORNER          | PART NAME         | BRIGHT EDP                                                     | ZrN EDP     | PRICE LIST<br>BRIGHT | PRICE LIST<br>ZrN |
| 3/8     | 3/8                          | 3         | 1/2    | 2     | SQ              | AI3-S-.3750-SQ    | 300520                                                         | 310520      | \$ 39.42             | \$ 44.35          |
| 3/8     | 3/8                          | 3         | 1/2    | 2     | 0.015           | AI3-S-.3750-R015  | 300530                                                         | 310530      | \$ 47.21             | \$ 53.11          |
| 3/8     | 3/8                          | 3         | 1/2    | 2     | 0.030           | AI3-S-.3750-R030  | 300540                                                         | 310540      | \$ 47.21             | \$ 53.11          |
| 3/8     | 3/8                          | 3         | 1/2    | 2     | 0.060           | AI3-S-.3750-R060  | 300550                                                         | 310550      | \$ 47.21             | \$ 53.11          |
| 3/8     | 3/8                          | 3         | 1      | 3     | SQ              | AI3-R-.3750-SQ    | 300560                                                         | 310560      | \$ 49.12             | \$ 55.25          |
| 3/8     | 3/8                          | 3         | 1      | 3     | 0.015           | AI3-R-.3750-R015  | 300570                                                         | 310570      | \$ 56.91             | \$ 64.02          |
| 3/8     | 3/8                          | 3         | 1      | 3     | 0.030           | AI3-R-.3750-R030  | 300580                                                         | 310580      | \$ 56.91             | \$ 64.02          |
| 3/8     | 3/8                          | 3         | 1      | 3     | 0.060           | AI3-R-.3750-R060  | 300590                                                         | 310590      | \$ 56.91             | \$ 64.02          |
| 3/8     | 3/8                          | 3         | 1-1/4  | 3     | SQ              | AI3-M-.3750-SQ    | 300600                                                         | 310600      | \$ 52.06             | \$ 58.57          |
| 3/8     | 3/8                          | 3         | 1-1/4  | 3     | 0.015           | AI3-M-.3750-R015  | 300610                                                         | 310610      | \$ 59.85             | \$ 67.34          |
| 3/8     | 3/8                          | 3         | 1-1/4  | 3     | 0.030           | AI3-M-.3750-R030  | 300620                                                         | 310620      | \$ 59.85             | \$ 67.34          |
| 3/8     | 3/8                          | 3         | 1-1/4  | 3     | 0.060           | AI3-M-.3750-R060  | 300630                                                         | 310630      | \$ 59.85             | \$ 67.34          |
| 3/8     | 3/8                          | 3         | 1-1/2  | 3-1/2 | SQ              | AI3-L-.3750-SQ    | 300640                                                         | 310640      | \$ 74.68             | \$ 84.02          |
| 3/8     | 3/8                          | 3         | 1-1/2  | 3-1/2 | 0.015           | AI3-L-.3750-R015  | 300650                                                         | 310650      | \$ 82.47             | \$ 92.78          |
| 3/8     | 3/8                          | 3         | 1-1/2  | 3-1/2 | 0.030           | AI3-L-.3750-R030  | 300660                                                         | 310660      | \$ 82.47             | \$ 92.78          |
| 3/8     | 3/8                          | 3         | 1-1/2  | 3-1/2 | 0.06            | AI3-L-.3750-R060  | 300670                                                         | 310670      | \$ 82.47             | \$ 92.78          |
| 3/8     | 3/8                          | 3         | 2      | 4     | SQ              | AI3-XL-.3750-SQ   | 300680                                                         | 310680      | \$ 79.00             | \$ 88.87          |
| 3/8     | 3/8                          | 3         | 2      | 4     | 0.015           | AI3-XL-.3750-R015 | 300690                                                         | 310690      | \$ 86.79             | \$ 97.63          |
| 3/8     | 3/8                          | 3         | 2      | 4     | 0.030           | AI3-XL-.3750-R030 | 300700                                                         | 310700      | \$ 86.79             | \$ 97.63          |
| 3/8     | 3/8                          | 3         | 2      | 4     | 0.060           | AI3-XL-.3750-R060 | 300710                                                         | 310710      | \$ 86.79             | \$ 97.63          |
| 1/2     | 1/2                          | 3         | 5/8    | 2-1/2 | SQ              | AI3-S-.5000-SQ    | 300720                                                         | 310720      | \$ 58.52             | \$ 65.83          |
| 1/2     | 1/2                          | 3         | 5/8    | 2-1/2 | 0.015           | AI3-S-.5000-R015  | 300730                                                         | 310730      | \$ 67.27             | \$ 75.68          |
| 1/2     | 1/2                          | 3         | 5/8    | 2-1/2 | 0.030           | AI3-S-.5000-R030  | 300740                                                         | 310740      | \$ 67.27             | \$ 75.68          |
| 1/2     | 1/2                          | 3         | 5/8    | 2-1/2 | 0.060           | AI3-S-.5000-R060  | 300750                                                         | 310750      | \$ 67.27             | \$ 75.68          |
| 1/2     | 1/2                          | 3         | 1      | 3     | SQ              | AI3-T-.5000-SQ    | 300760                                                         | 310760      | \$ 66.07             | \$ 74.33          |
| 1/2     | 1/2                          | 3         | 1      | 3     | 0.015           | AI3-T-.5000-R015  | 300770                                                         | 310770      | \$ 74.84             | \$ 84.19          |
| 1/2     | 1/2                          | 3         | 1      | 3     | 0.030           | AI3-T-.5000-R030  | 300780                                                         | 310780      | \$ 74.84             | \$ 84.19          |
| 1/2     | 1/2                          | 3         | 1      | 3     | 0.060           | AI3-T-.5000-R060  | 300790                                                         | 310790      | \$ 74.84             | \$ 84.19          |
| 1/2     | 1/2                          | 3         | 1-1/4  | 3     | SQ              | AI3-R-.5000-SQ    | 300800                                                         | 310800      | \$ 70.62             | \$ 79.44          |
| 1/2     | 1/2                          | 3         | 1-1/4  | 3     | 0.015           | AI3-R-.5000-R015  | 300810                                                         | 310810      | \$ 79.38             | \$ 89.31          |
| 1/2     | 1/2                          | 3         | 1-1/4  | 3     | 0.030           | AI3-R-.5000-R030  | 300820                                                         | 310820      | \$ 79.38             | \$ 89.31          |
| 1/2     | 1/2                          | 3         | 1-1/4  | 3     | 0.060           | AI3-R-.5000-R060  | 300830                                                         | 310830      | \$ 79.38             | \$ 89.31          |
| 1/2     | 1/2                          | 3         | 1-5/8  | 4     | SQ              | AI3-M-.5000-SQ    | 300840                                                         | 310840      | \$ 86.90             | \$ 97.77          |
| 1/2     | 1/2                          | 3         | 1-5/8  | 4     | 0.015           | AI3-M-.5000-R015  | 300850                                                         | 310850      | \$ 95.66             | \$ 107.61         |
| 1/2     | 1/2                          | 3         | 1-5/8  | 4     | 0.030           | AI3-M-.5000-R030  | 300860                                                         | 310860      | \$ 95.66             | \$ 107.61         |
| 1/2     | 1/2                          | 3         | 1-5/8  | 4     | 0.060           | AI3-M-.5000-R060  | 300870                                                         | 310870      | \$ 95.66             | \$ 107.61         |
| 1/2     | 1/2                          | 3         | 2      | 4     | SQ              | AI3-L-.5000-SQ    | 300880                                                         | 310880      | \$ 101.07            | \$ 113.71         |
| 1/2     | 1/2                          | 3         | 2      | 4     | 0.015           | AI3-L-.5000-R015  | 300890                                                         | 310890      | \$ 109.83            | \$ 123.56         |
| 1/2     | 1/2                          | 3         | 2      | 4     | 0.030           | AI3-L-.5000-R030  | 300900                                                         | 310900      | \$ 109.83            | \$ 123.56         |
| 1/2     | 1/2                          | 3         | 2      | 4     | 0.060           | AI3-L-.5000-R060  | 300910                                                         | 310910      | \$ 109.83            | \$ 123.56         |
| 1/2     | 1/2                          | 3         | 2-1/2  | 5     | SQ              | AI3-XL-.5000-SQ   | 300920                                                         | 310920      | \$ 113.56            | \$ 127.76         |
| 1/2     | 1/2                          | 3         | 2-1/2  | 5     | 0.015           | AI3-XL-.5000-R015 | 300930                                                         | 310930      | \$ 122.32            | \$ 137.61         |
| 1/2     | 1/2                          | 3         | 2-1/2  | 5     | 0.030           | AI3-XL-.5000-R030 | 300940                                                         | 310940      | \$ 122.32            | \$ 137.61         |
| 1/2     | 1/2                          | 3         | 2-1/2  | 5     | 0.060           | AI3-XL-.5000-R060 | 300950                                                         | 310950      | \$ 122.32            | \$ 137.61         |
| 5/8     | 5/8                          | 3         | 3/4    | 3     | SQ              | AI3-S-.6250-SQ    | 300960                                                         | 310960      | \$ 120.21            | \$ 135.24         |
| 5/8     | 5/8                          | 3         | 3/4    | 3     | 0.015           | AI3-S-.6250-R015  | 300970                                                         | 310970      | \$ 130.65            | \$ 146.98         |
| 5/8     | 5/8                          | 3         | 3/4    | 3     | 0.030           | AI3-S-.6250-R030  | 300980                                                         | 310980      | \$ 130.65            | \$ 146.98         |
| 5/8     | 5/8                          | 3         | 3/4    | 3     | 0.060           | AI3-S-.6250-R060  | 300990                                                         | 310990      | \$ 130.65            | \$ 146.98         |
| 5/8     | 5/8                          | 3         | 1-1/4  | 3-1/2 | SQ              | AI3-T-.6250-SQ    | 301000                                                         | 311000      | \$ 123.53            | \$ 138.97         |
| 5/8     | 5/8                          | 3         | 1-1/4  | 3-1/2 | 0.015           | AI3-T-.6250-R015  | 301010                                                         | 311010      | \$ 133.96            | \$ 150.71         |
| 5/8     | 5/8                          | 3         | 1-1/4  | 3-1/2 | 0.030           | AI3-T-.6250-R030  | 301020                                                         | 311020      | \$ 133.96            | \$ 150.71         |
| 5/8     | 5/8                          | 3         | 1-1/4  | 3-1/2 | 0.060           | AI3-T-.6250-R060  | 301030                                                         | 311030      | \$ 133.96            | \$ 150.71         |

# Aluminum Alloys



| Carbide | 3 Flute<br>Center<br>Cutting | 41° Helix | Bright | ZrN   | + .000 / - .002 | HRC <40          | ZrN add a (1) after<br>leading (3) for EDP:<br>(e.g. - 310000) | Series: Al3 |                      |                   |
|---------|------------------------------|-----------|--------|-------|-----------------|------------------|----------------------------------------------------------------|-------------|----------------------|-------------------|
| CUT DIA | SHANK DIA                    | FLUTES    | LOC    | OAL   | CORNER          | PART NAME        | BRIGHT EDP                                                     | ZrN EDP     | PRICE LIST<br>BRIGHT | PRICE LIST<br>ZrN |
| 5/8     | 5/8                          | 3         | 1-5/8  | 3-1/2 | SQ              | Al3-R-.6250-SQ   | 301040                                                         | 311040      | \$ 126.77            | \$ 142.62         |
| 5/8     | 5/8                          | 3         | 1-5/8  | 3-1/2 | 0.015           | Al3-R-.6250-R015 | 301050                                                         | 311050      | \$ 137.20            | \$ 154.36         |
| 5/8     | 5/8                          | 3         | 1-5/8  | 3-1/2 | 0.030           | Al3-R-.6250-R030 | 301060                                                         | 311060      | \$ 137.20            | \$ 154.36         |
| 5/8     | 5/8                          | 3         | 1-5/8  | 3-1/2 | 0.060           | Al3-R-.6250-R060 | 301070                                                         | 311070      | \$ 137.20            | \$ 154.36         |
| 3/4     | 3/4                          | 3         | 1      | 4     | SQ              | Al3-S-.7500-SQ   | 301080                                                         | 311080      | \$ 195.00            | \$ 219.38         |
| 3/4     | 3/4                          | 3         | 1      | 4     | 0.015           | Al3-S-.7500-R015 | 301090                                                         | 311090      | \$ 207.12            | \$ 233.01         |
| 3/4     | 3/4                          | 3         | 1      | 4     | 0.030           | Al3-S-.7500-R030 | 301100                                                         | 311100      | \$ 207.12            | \$ 233.01         |
| 3/4     | 3/4                          | 3         | 1      | 4     | 0.060           | Al3-S-.7500-R060 | 301110                                                         | 311110      | \$ 207.12            | \$ 233.01         |
| 3/4     | 3/4                          | 3         | 1-5/8  | 4     | SQ              | Al3-R-.7500-SQ   | 301120                                                         | 311120      | \$ 212.66            | \$ 239.25         |
| 3/4     | 3/4                          | 3         | 1-5/8  | 4     | 0.015           | Al3-R-.7500-R015 | 301130                                                         | 311130      | \$ 224.80            | \$ 252.90         |
| 3/4     | 3/4                          | 3         | 1-5/8  | 4     | 0.030           | Al3-R-.7500-R030 | 301140                                                         | 311140      | \$ 224.80            | \$ 252.90         |
| 3/4     | 3/4                          | 3         | 1-5/8  | 4     | 0.060           | Al3-R-.7500-R060 | 301150                                                         | 311150      | \$ 224.80            | \$ 252.90         |
| 3/4     | 3/4                          | 3         | 2-1/4  | 5     | SQ              | Al3-M-.7500-SQ   | 301160                                                         | 311160      | \$ 245.54            | \$ 276.23         |
| 3/4     | 3/4                          | 3         | 2-1/4  | 5     | 0.015           | Al3-M-.7500-R015 | 301170                                                         | 311170      | \$ 257.67            | \$ 289.87         |
| 3/4     | 3/4                          | 3         | 2-1/4  | 5     | 0.030           | Al3-M-.7500-R030 | 301180                                                         | 311180      | \$ 257.67            | \$ 289.87         |
| 3/4     | 3/4                          | 3         | 2-1/4  | 5     | 0.060           | Al3-M-.7500-R060 | 301190                                                         | 311190      | \$ 257.67            | \$ 289.87         |

| Material Guide |                         |                                                                                           | Condition            | SFM  | CHIP PER TOOTH |        |        |        |        |        |        |        |        |
|----------------|-------------------------|-------------------------------------------------------------------------------------------|----------------------|------|----------------|--------|--------|--------|--------|--------|--------|--------|--------|
|                |                         |                                                                                           |                      |      | 1/8"           | 3/16"  | 1/4"   | 5/16"  | 3/8"   | 1/2"   | 5/8"   | 3/4"   | 1"     |
| N-ISO          | Wrought Aluminum Alloys | 6061-T6/T651, 7075-T6, 2024-T4/T6, 2014                                                   | Slotting             | 1800 | 0.0012         | 0.0018 | 0.0020 | 0.0024 | 0.0032 | 0.0041 | 0.0040 | 0.0048 | 0.0082 |
|                |                         |                                                                                           | ≤ 65% Dia. Pro iling | 2400 | 0.0015         | 0.0024 | 0.0032 | 0.0048 | 0.0047 | 0.0056 | 0.0080 | 0.0096 | 0.0112 |
|                | Cast Aluminum Alloys    | 319, 328, 360, 383                                                                        | Slotting             | 900  | 0.0012         | 0.0018 | 0.0022 | 0.0024 | 0.0034 | 0.0045 | 0.0040 | 0.0048 | 0.0090 |
|                |                         |                                                                                           | ≤ 65% Dia. Pro iling | 1200 | 0.0015         | 0.0024 | 0.0028 | 0.0048 | 0.0043 | 0.0055 | 0.0080 | 0.0096 | 0.0110 |
|                | Copper                  | Red Brass, High Lead Brass, Yellow Brass, C-17200, Navel Brass, A-17, High Silicon Bronze | Slotting             | 475  | 0.0008         | 0.0008 | 0.0016 | 0.0020 | 0.0024 | 0.0030 | 0.0032 | 0.0032 | 0.0060 |
|                |                         |                                                                                           | ≤ 65% Dia. Pro iling | 625  | 0.0011         | 0.0011 | 0.0022 | 0.0028 | 0.0033 | 0.0040 | 0.0045 | 0.0045 | 0.0080 |
|                | Copper                  | Nickel Low Silicon Bronze, Alum/Bronze, BerylliSilver, Oxygen-Free Copperum Copper ,      | Slotting             | 425  | 0.0008         | 0.0008 | 0.0016 | 0.0020 | 0.0024 | 0.0030 | 0.0032 | 0.0032 | 0.0060 |
|                |                         |                                                                                           | ≤ 65% Dia. Pro iling | 600  | 0.0011         | 0.0011 | 0.0022 | 0.0028 | 0.0033 | 0.0040 | 0.0045 | 0.0045 | 0.0080 |
|                | Magnesium               |                                                                                           | Slotting             | 1400 | 0.0012         | 0.0018 | 0.0020 | 0.0024 | 0.0032 | 0.0042 | 0.0048 | 0.0064 | 0.0084 |
|                |                         |                                                                                           | ≤ 65% Dia. Pro iling | 1600 | 0.0015         | 0.0024 | 0.0032 | 0.0048 | 0.0047 | 0.0056 | 0.0080 | 0.0096 | 0.0112 |
|                | Plastics                | Acrylics, Polycarbonate, Phenolics                                                        | Slotting             | 600  | 0.0020         | 0.0024 | 0.0032 | 0.0048 | 0.0052 | 0.0056 | 0.0080 | 0.0096 | 0.0112 |
|                |                         |                                                                                           | ≤ 15% Dia. Pro iling | 800  | 0.0008         | 0.0016 | 0.0024 | 0.0032 | 0.0032 | 0.0060 | 0.0064 | 0.0080 | 0.0120 |

# Titanium & High Temp Alloys



| Carbide | 4 Flute Center Cutting | Variable | AITISIN | +.000 / -.002 | HRC <54 | Series: Ti4 |                   |        |            |
|---------|------------------------|----------|---------|---------------|---------|-------------|-------------------|--------|------------|
| CUT DIA | SHANK DIA              | FLUTES   | LBS     | LOC           | OAL     | CORNER      | PART NAME         | EDP    | PRICE LIST |
| 1/8     | 1/8                    | 4        |         | 1/4           | 1-1/2   | SQ          | Ti4-S-.1250-SQ    | 400000 | \$ 21.88   |
| 1/8     | 1/8                    | 4        |         | 1/4           | 1-1/2   | 0.010       | Ti4-S-.1250-R.010 | 400010 | \$ 22.20   |
| 1/8     | 1/8                    | 4        |         | 1/4           | 1-1/2   | 0.015       | Ti4-S-.1250-R.015 | 400020 | \$ 22.20   |
| 1/8     | 1/8                    | 4        |         | 1/4           | 1-1/2   | BALL        | Ti4-S-.1250-BN    | 400030 | \$ 29.36   |
| 1/8     | 1/8                    | 4        |         | 1/2           | 2       | SQ          | Ti4-R-.1250-SQ    | 400040 | \$ 22.51   |
| 1/8     | 1/8                    | 4        |         | 1/2           | 2       | 0.010       | Ti4-R-.1250-R.010 | 400050 | \$ 22.85   |
| 1/8     | 1/8                    | 4        |         | 1/2           | 2       | 0.015       | Ti4-R-.1250-R.015 | 400060 | \$ 22.85   |
| 1/8     | 1/8                    | 4        |         | 1/2           | 2       | BALL        | Ti4-R-.1250-BN    | 400070 | \$ 30.16   |
| 1/8     | 1/8                    | 4        |         | 3/4           | 2-1/2   | SQ          | Ti4-M-.1250-SQ    | 400080 | \$ 26.00   |
| 1/8     | 1/8                    | 4        |         | 3/4           | 2-1/2   | 0.010       | Ti4-M-.1250-R.010 | 400090 | \$ 35.11   |
| 1/8     | 1/8                    | 4        |         | 3/4           | 2-1/2   | 0.015       | Ti4-M-.1250-R.015 | 400100 | \$ 35.11   |
| 1/8     | 1/8                    | 4        |         | 3/4           | 2-1/2   | BALL        | Ti4-M-.1250-BN    | 400110 | \$ 34.59   |
| 3/16    | 3/16                   | 4        |         | 5/16          | 2       | SQ          | Ti4-S-.1875-SQ    | 400120 | \$ 26.17   |
| 3/16    | 3/16                   | 4        |         | 5/16          | 2       | 0.01        | Ti4-S-.1875-R.010 | 400130 | \$ 26.53   |
| 3/16    | 3/16                   | 4        |         | 5/16          | 2       | 0.015       | Ti4-S-.1875-R.015 | 400140 | \$ 26.53   |
| 3/16    | 3/16                   | 4        |         | 5/16          | 2       | 0.030       | Ti4-S-.1875-R.030 | 400150 | \$ 30.91   |
| 3/16    | 3/16                   | 4        |         | 5/16          | 2       | BALL        | Ti4-S-.1875-BN    | 400160 | \$ 34.83   |
| 3/16    | 3/16                   | 4        |         | 9/16          | 2       | SQ          | Ti4-R-.1875-SQ    | 400170 | \$ 28.22   |
| 3/16    | 3/16                   | 4        |         | 9/16          | 2       | 0.010       | Ti4-R-.1875-R.010 | 400180 | \$ 28.63   |
| 3/16    | 3/16                   | 4        |         | 9/16          | 2       | 0.015       | Ti4-R-.1875-R.015 | 400190 | \$ 28.63   |
| 3/16    | 3/16                   | 4        |         | 9/16          | 2       | 0.030       | Ti4-R-.1875-R.030 | 400200 | \$ 33.64   |
| 3/16    | 3/16                   | 4        |         | 9/16          | 2       | BALL        | Ti4-R-.1875-BN    | 400210 | \$ 37.45   |
| 3/16    | 3/16                   | 4        |         | 3/4           | 2-1/2   | SQ          | Ti4-M-.1875-SQ    | 400220 | \$ 29.19   |
| 3/16    | 3/16                   | 4        |         | 3/4           | 2-1/2   | 0.010       | Ti4-M-.1875-R.010 | 400230 | \$ 38.82   |
| 3/16    | 3/16                   | 4        |         | 3/4           | 2-1/2   | 0.015       | Ti4-M-.1875-R.015 | 400240 | \$ 38.82   |
| 3/16    | 3/16                   | 4        |         | 3/4           | 2-1/2   | 0.030       | Ti4-M-.1875-R.030 | 400250 | \$ 38.82   |
| 3/16    | 3/16                   | 4        |         | 3/4           | 2-1/2   | BALL        | Ti4-M-.1875-BN    | 400260 | \$ 39.66   |
| 1/4     | 1/4                    | 4        |         | 3/8           | 2       | SQ          | Ti4-S-.2500-SQ    | 400270 | \$ 32.04   |
| 1/4     | 1/4                    | 4        |         | 3/8           | 2       | 0.015       | Ti4-S-.2500-R.015 | 400280 | \$ 35.58   |
| 1/4     | 1/4                    | 4        |         | 3/8           | 2       | 0.03        | Ti4-S-.2500-R.030 | 400290 | \$ 35.58   |
| 1/4     | 1/4                    | 4        |         | 3/8           | 2       | 0.060       | Ti4-S-.2500-R.060 | 400300 | \$ 38.97   |
| 1/4     | 1/4                    | 4        |         | 3/8           | 2       | BALL        | Ti4-S-.2500-BN    | 400310 | \$ 42.49   |
| 1/4     | 1/4                    | 4        |         | 1/2           | 2-1/2   | SQ          | Ti4-T-.2500-SQ    | 400320 | \$ 36.82   |
| 1/4     | 1/4                    | 4        |         | 1/2           | 2-1/2   | 0.015       | Ti4-T-.2500-R.015 | 400330 | \$ 38.65   |
| 1/4     | 1/4                    | 4        |         | 1/2           | 2-1/2   | 0.030       | Ti4-T-.2500-R.030 | 400340 | \$ 38.65   |
| 1/4     | 1/4                    | 4        |         | 1/2           | 2-1/2   | 0.060       | Ti4-T-.2500-R.060 | 400350 | \$ 41.35   |
| 1/4     | 1/4                    | 4        |         | 1/2           | 2-1/2   | BALL        | Ti4-T-.2500-BN    | 400360 | \$ 48.67   |
| 1/4     | 1/4                    | 4        |         | 3/4           | 2-1/2   | SQ          | Ti4-R-.2500-SQ    | 400370 | \$ 39.01   |
| 1/4     | 1/4                    | 4        |         | 3/4           | 2-1/2   | 0.015       | Ti4-R-.2500-R.015 | 400380 | \$ 41.51   |
| 1/4     | 1/4                    | 4        |         | 3/4           | 2-1/2   | 0.030       | Ti4-R-.2500-R.030 | 400390 | \$ 41.51   |
| 1/4     | 1/4                    | 4        |         | 3/4           | 2-1/2   | 0.060       | Ti4-R-.2500-R.060 | 400400 | \$ 44.42   |
| 1/4     | 1/4                    | 4        |         | 3/4           | 2-1/2   | BALL        | Ti4-R-.2500-BN    | 400410 | \$ 49.55   |
| 1/4     | 1/4                    | 4        |         | 1-1/4         | 3       | SQ          | Ti4-L-.2500-SQ    | 400420 | \$ 47.39   |
| 1/4     | 1/4                    | 4        |         | 1-1/4         | 3       | 0.015       | Ti4-L-.2500-R.015 | 400430 | \$ 57.77   |
| 1/4     | 1/4                    | 4        |         | 1-1/4         | 3       | 0.03        | Ti4-L-.2500-R.030 | 400440 | \$ 57.77   |
| 1/4     | 1/4                    | 4        |         | 1-1/4         | 3       | 0.060       | Ti4-L-.2500-R.060 | 400450 | \$ 59.40   |

# Titanium & High Temp Alloys



| Carbide | 4 Flute Center Cutting | Variable | AITISIN | +.000 / -.002 | HRc <54 | Series: Ti4 |                        |        |            |
|---------|------------------------|----------|---------|---------------|---------|-------------|------------------------|--------|------------|
| CUT DIA | SHANK DIA              | FLUTES   | LBS     | LOC           | OAL     | CORNER      | PART NAME              | EDP    | PRICE LIST |
| 1/4     | 1/4                    | 4        |         | 1-1/4         | 3       | BALL        | Ti4-L-.2500-BN         | 400460 | \$ 61.78   |
| 5/16    | 5/16                   | 4        |         | 7/16          | 2       | SQ          | Ti4-S-.3125-SQ         | 400470 | \$ 40.88   |
| 5/16    | 5/16                   | 4        |         | 7/16          | 2       | 0.015       | Ti4-S-.3125-R.015      | 400480 | \$ 45.68   |
| 5/16    | 5/16                   | 4        |         | 7/16          | 2       | 0.03        | Ti4-S-.3125-R.030      | 400490 | \$ 45.68   |
| 5/16    | 5/16                   | 4        |         | 7/16          | 2       | 0.060       | Ti4-S-.3125-R.060      | 400500 | \$ 53.40   |
| 5/16    | 5/16                   | 4        |         | 7/16          | 2       | BALL        | Ti4-S-.3125-BN         | 400510 | \$ 54.71   |
| 5/16    | 5/16                   | 4        |         | 13/16         | 2-1/2   | SQ          | Ti4-R-.3125-SQ         | 400520 | \$ 48.54   |
| 5/16    | 5/16                   | 4        |         | 13/16         | 2-1/2   | 0.015       | Ti4-R-.3125-R.015      | 400530 | \$ 52.75   |
| 5/16    | 5/16                   | 4        |         | 13/16         | 2-1/2   | 0.030       | Ti4-R-.3125-R.030      | 400540 | \$ 52.75   |
| 5/16    | 5/16                   | 4        |         | 13/16         | 2-1/2   | 0.060       | Ti4-R-.3125-R.060      | 400550 | \$ 61.64   |
| 5/16    | 5/16                   | 4        |         | 13/16         | 2-1/2   | BALL        | Ti4-R-.3125-BN         | 400560 | \$ 65.60   |
| 5/16    | 5/16                   | 4        |         | 1             | 3       | SQ          | Ti4-M-.3125-SQ         | 400570 | \$ 56.17   |
| 5/16    | 5/16                   | 4        |         | 1             | 3       | 0.015       | Ti4-M-.3125-R.015      | 400580 | \$ 67.27   |
| 5/16    | 5/16                   | 4        |         | 1             | 3       | 0.030       | Ti4-M-.3125-R.030      | 400590 | \$ 67.27   |
| 5/16    | 5/16                   | 4        |         | 1             | 3       | 0.060       | Ti4-M-.3125-R.060      | 400600 | \$ 68.89   |
| 5/16    | 5/16                   | 4        |         | 1             | 3       | BALL        | Ti4-M-.3125-BN         | 400610 | \$ 74.74   |
| 3/8     | 3/8                    | 4        |         | 1/2           | 2       | SQ          | Ti4-S-.3750-SQ         | 400620 | \$ 54.37   |
| 3/8     | 3/8                    | 4        |         | 1/2           | 2       | 0.015       | Ti4-S-.3750-R.015      | 400630 | \$ 57.33   |
| 3/8     | 3/8                    | 4        | 1-1/8   | 1/2           | 4       | 0.015       | Ti4-S-.3750-R.015-RN1  | 400631 | \$ 89.49   |
| 3/8     | 3/8                    | 4        | 2-1/8   | 1/2           | 4       | 0.015       | Ti4-SR-.3750-R.015-RN2 | 400632 | \$ 94.83   |
| 3/8     | 3/8                    | 4        | 3-1/8   | 1/2           | 6       | 0.015       | Ti4-SM-.3750-R.015-RN3 | 400633 | \$ 126.42  |
| 3/8     | 3/8                    | 4        | 4-1/8   | 1/2           | 6       | 0.015       | Ti4-SL-.3750-R.015-RN4 | 400634 | \$ 135.52  |
| 3/8     | 3/8                    | 4        |         | 1/2           | 2       | 0.030       | Ti4-S-.3750-R.030      | 400640 | \$ 57.33   |
| 3/8     | 3/8                    | 4        |         | 1/2           | 2       | 0.060       | Ti4-S-.3750-R.060      | 400650 | \$ 61.86   |
| 3/8     | 3/8                    | 4        |         | 1/2           | 2       | BALL        | Ti4-S-.3750-BN         | 400660 | \$ 68.90   |
| 3/8     | 3/8                    | 4        |         | 1             | 2-1/2   | SQ          | Ti4-R-.3750-SQ         | 400670 | \$ 58.41   |
| 3/8     | 3/8                    | 4        |         | 1             | 2-1/2   | 0.015       | Ti4-R-.3750-R.015      | 400680 | \$ 63.18   |
| 3/8     | 3/8                    | 4        |         | 1             | 2-1/2   | 0.030       | Ti4-R-.3750-R.030      | 400690 | \$ 63.18   |
| 3/8     | 3/8                    | 4        |         | 1             | 2-1/2   | 0.060       | Ti4-R-.3750-R.060      | 400700 | \$ 65.20   |
| 3/8     | 3/8                    | 4        |         | 1             | 2-1/2   | BALL        | Ti4-R-.3750-BN         | 400710 | \$ 74.81   |
| 3/8     | 3/8                    | 4        |         | 1-1/4         | 3       | SQ          | Ti4-M-.3750-SQ         | 400720 | \$ 67.64   |
| 3/8     | 3/8                    | 4        |         | 1-1/4         | 3       | 0.015       | Ti4-M-.3750-R.015      | 400730 | \$ 75.81   |
| 3/8     | 3/8                    | 4        |         | 1-1/4         | 3       | 0.030       | Ti4-M-.3750-R.030      | 400740 | \$ 75.81   |
| 3/8     | 3/8                    | 4        |         | 1-1/4         | 3       | 0.060       | Ti4-M-.3750-R.060      | 400750 | \$ 77.75   |
| 3/8     | 3/8                    | 4        |         | 1-1/4         | 3       | BALL        | Ti4-M-.3750-BN         | 400760 | \$ 84.56   |
| 3/8     | 3/8                    | 4        |         | 1-3/4         | 4       | SQ          | Ti4-L-.3750-SQ         | 400770 | \$ 72.59   |
| 3/8     | 3/8                    | 4        |         | 1-3/4         | 4       | 0.015       | Ti4-L-.3750-R.015      | 400780 | \$ 81.12   |
| 3/8     | 3/8                    | 4        |         | 1-3/4         | 4       | 0.03        | Ti4-L-.3750-R.030      | 400790 | \$ 81.12   |
| 3/8     | 3/8                    | 4        |         | 1-3/4         | 4       | 0.060       | Ti4-L-.3750-R.060      | 400800 | \$ 82.98   |
| 3/8     | 3/8                    | 4        |         | 1-3/4         | 4       | BALL        | Ti4-L-.3750-BN         | 400810 | \$ 90.78   |
| 1/2     | 1/2                    | 4        |         | 5/8           | 2-1/2   | SQ          | Ti4-S-.5000-SQ         | 400820 | \$ 86.93   |
| 1/2     | 1/2                    | 4        | 1-1/2   | 5/8           | 4       | SQ          | Ti4-S-.5000-SQ-RN1     | 400821 | \$ 123.06  |
| 1/2     | 1/2                    | 4        | 2-1/4   | 5/8           | 4       | SQ          | Ti4-SR-.5000-SQ-RN2    | 400822 | \$ 132.31  |
| 1/2     | 1/2                    | 4        | 3-3/8   | 5/8           | 6       | SQ          | Ti4-SM-.5000-SQ-RN3    | 400823 | \$ 191.85  |
| 1/2     | 1/2                    | 4        | 4-1/8   | 5/8           | 6       | SQ          | Ti4-SL-.5000-SQ-RN4    | 400824 | \$ 198.26  |
| 1/2     | 1/2                    | 4        |         | 5/8           | 2-1/2   | 0.015       | Ti4-S-.5000-R.015      | 400830 | \$ 91.64   |

# Titanium & High Temp Alloys



| Carbide | 4 Flute Center Cutting | Variable | AITISIN | +.000 / -.002 | HRC <54 | Series: Ti4 |                        |        |            |
|---------|------------------------|----------|---------|---------------|---------|-------------|------------------------|--------|------------|
| CUT DIA | SHANK DIA              | FLUTES   | LBS     | LOC           | OAL     | CORNER      | PART NAME              | EDP    | PRICE LIST |
| 1/2     | 1/2                    | 4        | 1-1/2   | 5/8           | 4       | 0.015       | Ti4-S-.5000-R.015-RN1  | 400831 | \$ 131.76  |
| 1/2     | 1/2                    | 4        | 2-1/4   | 5/8           | 4       | 0.015       | Ti4-SR-.5000-R.015-RN2 | 400832 | \$ 141.47  |
| 1/2     | 1/2                    | 4        | 3-3/8   | 5/8           | 6       | 0.015       | Ti4-SM-.5000-R.015-RN3 | 400833 | \$ 202.76  |
| 1/2     | 1/2                    | 4        | 4-1/8   | 5/8           | 6       | 0.015       | Ti4-SL-.5000-R.015-RN4 | 400834 | \$ 209.00  |
| 1/2     | 1/2                    | 4        |         | 5/8           | 2-1/2   | 0.030       | Ti4-S-.5000-R.030      | 400840 | \$ 91.64   |
| 1/2     | 1/2                    | 4        | 1-1/2   | 5/8           | 4       | 0.030       | Ti4-S-.5000-R.030-RN1  | 400841 | \$ 131.76  |
| 1/2     | 1/2                    | 4        | 2-1/4   | 5/8           | 4       | 0.030       | Ti4-SR-.5000-R.030-RN2 | 400842 | \$ 141.47  |
| 1/2     | 1/2                    | 4        | 3-3/8   | 5/8           | 6       | 0.03        | Ti4-SM-.5000-R.030-RN3 | 400843 | \$ 202.76  |
| 1/2     | 1/2                    | 4        | 4-1/8   | 5/8           | 6       | 0.030       | Ti4-SL-.5000-R.030-RN4 | 400844 | \$ 209.00  |
| 1/2     | 1/2                    | 4        |         | 5/8           | 2-1/2   | 0.060       | Ti4-S-.5000-R.060      | 400850 | \$ 98.71   |
| 1/2     | 1/2                    | 4        | 1-1/2   | 5/8           | 4       | 0.060       | Ti4-S-.5000-R.060-RN1  | 400851 | \$ 131.76  |
| 1/2     | 1/2                    | 4        | 2-1/4   | 5/8           | 4       | 0.060       | Ti4-SR-.5000-R.060-RN2 | 400852 | \$ 141.47  |
| 1/2     | 1/2                    | 4        | 3-3/8   | 5/8           | 6       | 0.060       | Ti4-SM-.5000-R.060-RN3 | 400853 | \$ 202.76  |
| 1/2     | 1/2                    | 4        | 4-1/8   | 5/8           | 6       | 0.060       | Ti4-SL-.5000-R.060-RN4 | 400854 | \$ 209.00  |
| 1/2     | 1/2                    | 4        |         | 5/8           | 2-1/2   | BALL        | Ti4-S-.5000-BN         | 400860 | \$ 106.82  |
| 1/2     | 1/2                    | 4        | 1-1/2   | 5/8           | 4       | BALL        | Ti4-S-.5000-BN-RN1     | 400861 | \$ 155.30  |
| 1/2     | 1/2                    | 4        | 2-1/4   | 5/8           | 4       | BALL        | Ti4-SR-.5000-BN-RN2    | 400862 | \$ 164.18  |
| 1/2     | 1/2                    | 4        | 3-3/8   | 5/8           | 6       | BALL        | Ti4-SM-.5000-BN-RN3    | 400863 | \$ 221.85  |
| 1/2     | 1/2                    | 4        | 4-1/8   | 5/8           | 6       | BALL        | Ti4-SL-.5000-BN-RN4    | 400864 | \$ 229.01  |
| 1/2     | 1/2                    | 4        |         | 1             | 3       | SQ          | Ti4-T-.5000-SQ         | 400870 | \$ 91.72   |
| 1/2     | 1/2                    | 4        |         | 1             | 3       | 0.015       | Ti4-T-.5000-R.015      | 400880 | \$ 95.32   |
| 1/2     | 1/2                    | 4        |         | 1             | 3       | 0.030       | Ti4-T-.5000-R.030      | 400890 | \$ 95.32   |
| 1/2     | 1/2                    | 4        |         | 1             | 3       | 0.060       | Ti4-T-.5000-R.060      | 400900 | \$ 101.79  |
| 1/2     | 1/2                    | 4        |         | 1             | 3       | BALL        | Ti4-T-.5000-BN         | 400910 | \$ 109.99  |
| 1/2     | 1/2                    | 4        |         | 1-1/4         | 3       | SQ          | Ti4-R-.5000-SQ         | 400920 | \$ 95.05   |
| 1/2     | 1/2                    | 4        |         | 1-1/4         | 3       | 0.015       | Ti4-R-.5000-R.015      | 400930 | \$ 98.66   |
| 1/2     | 1/2                    | 4        |         | 1-1/4         | 3       | 0.030       | Ti4-R-.5000-R.030      | 400940 | \$ 98.66   |
| 1/2     | 1/2                    | 4        |         | 1-1/4         | 3       | 0.060       | Ti4-R-.5000-R.060      | 400950 | \$ 103.19  |
| 1/2     | 1/2                    | 4        |         | 1-1/4         | 3       | BALL        | Ti4-R-.5000-BN         | 400960 | \$ 112.71  |
| 1/2     | 1/2                    | 4        |         | 1-5/8         | 4       | SQ          | Ti4-M-.5000-SQ         | 400970 | \$ 117.19  |
| 1/2     | 1/2                    | 4        |         | 1-5/8         | 4       | 0.015       | Ti4-M-.5000-R.015      | 400980 | \$ 122.89  |
| 1/2     | 1/2                    | 4        |         | 1-5/8         | 4       | 0.030       | Ti4-M-.5000-R.030      | 400990 | \$ 122.89  |
| 1/2     | 1/2                    | 4        |         | 1-5/8         | 4       | 0.060       | Ti4-M-.5000-R.060      | 401000 | \$ 124.95  |
| 1/2     | 1/2                    | 4        |         | 1-5/8         | 4       | BALL        | Ti4-M-.5000-BN         | 401010 | \$ 135.47  |
| 1/2     | 1/2                    | 4        |         | 2             | 4       | SQ          | Ti4-L-.5000-SQ         | 401020 | \$ 119.31  |
| 1/2     | 1/2                    | 4        |         | 2             | 4       | 0.015       | Ti4-L-.5000-R.015      | 401030 | \$ 127.85  |
| 1/2     | 1/2                    | 4        |         | 2             | 4       | 0.030       | Ti4-L-.5000-R.030      | 401040 | \$ 127.85  |
| 1/2     | 1/2                    | 4        |         | 2             | 4       | 0.060       | Ti4-L-.5000-R.060      | 401050 | \$ 129.60  |
| 1/2     | 1/2                    | 4        |         | 2             | 4       | BALL        | Ti4-L-.5000-BN         | 401060 | \$ 137.59  |
| 5/8     | 5/8                    | 4        |         | 3/4           | 3       | SQ          | Ti4-S-.6250-SQ         | 401070 | \$ 165.69  |
| 5/8     | 5/8                    | 4        |         | 3/4           | 3       | 0.015       | Ti4-S-.6250-R.015      | 401080 | \$ 170.76  |
| 5/8     | 5/8                    | 4        |         | 3/4           | 3       | 0.030       | Ti4-S-.6250-R.030      | 401090 | \$ 170.76  |
| 5/8     | 5/8                    | 4        |         | 3/4           | 3       | 0.060       | Ti4-S-.6250-R.060      | 401100 | \$ 174.46  |
| 5/8     | 5/8                    | 4        |         | 3/4           | 3       | BALL        | Ti4-S-.6250-BN         | 401110 | \$ 192.75  |
| 5/8     | 5/8                    | 4        |         | 1-1/4         | 3-1/2   | SQ          | Ti4-T-.6250-SQ         | 401120 | \$ 167.70  |
| 5/8     | 5/8                    | 4        |         | 1-1/4         | 3-1/2   | 0.015       | Ti4-T-.6250-R.015      | 401130 | \$ 176.46  |

# Titanium & High Temp Alloys



| Carbide | 4 Flute Center Cutting | Variable | AITISIN | + .000 / -.002 | HRC <54 | Series: Ti4 |                     |        |            |
|---------|------------------------|----------|---------|----------------|---------|-------------|---------------------|--------|------------|
| CUT DIA | SHANK DIA              | FLUTES   | LBS     | LOC            | OAL     | CORNER      | PART NAME           | EDP    | PRICE LIST |
| 5/8     | 5/8                    | 4        |         | 1-1/4          | 3-1/2   | 0.030       | Ti4-T-.6250-R.030   | 401140 | \$ 176.46  |
| 5/8     | 5/8                    | 4        |         | 1-1/4          | 3-1/2   | 0.060       | Ti4-T-.6250-R.060   | 401150 | \$ 180.32  |
| 5/8     | 5/8                    | 4        |         | 1-1/4          | 3-1/2   | BALL        | Ti4-T-.6250-BN      | 401160 | \$ 196.85  |
| 5/8     | 5/8                    | 4        |         | 1-5/8          | 3-1/2   | SQ          | Ti4-R-.6250-SQ      | 401170 | \$ 182.48  |
| 5/8     | 5/8                    | 4        |         | 1-5/8          | 3-1/2   | 0.015       | Ti4-R-.6250-R.015   | 401180 | \$ 187.10  |
| 5/8     | 5/8                    | 4        |         | 1-5/8          | 3-1/2   | 0.030       | Ti4-R-.6250-R.030   | 401190 | \$ 187.10  |
| 5/8     | 5/8                    | 4        |         | 1-5/8          | 3-1/2   | 0.060       | Ti4-R-.6250-R.060   | 401200 | \$ 197.27  |
| 5/8     | 5/8                    | 4        |         | 1-5/8          | 3-1/2   | BALL        | Ti4-R-.6250-BN      | 401210 | \$ 214.40  |
| 5/8     | 5/8                    | 4        |         | 2-1/8          | 4       | SQ          | Ti4-M-.6250-SQ      | 401220 | \$ 194.64  |
| 5/8     | 5/8                    | 4        |         | 2-1/8          | 4       | 0.015       | Ti4-M-.6250-R.015   | 401230 | \$ 204.34  |
| 5/8     | 5/8                    | 4        |         | 2-1/8          | 4       | 0.030       | Ti4-M-.6250-R.030   | 401240 | \$ 204.34  |
| 5/8     | 5/8                    | 4        |         | 2-1/8          | 4       | 0.060       | Ti4-M-.6250-R.060   | 401250 | \$ 206.72  |
| 5/8     | 5/8                    | 4        |         | 2-1/8          | 4       | BALL        | Ti4-M-.6250-BN      | 401260 | \$ 222.33  |
| 5/8     | 5/8                    | 4        |         | 2-1/2          | 5       | SQ          | Ti4-L-.6250-SQ      | 401270 | \$ 230.69  |
| 5/8     | 5/8                    | 4        |         | 2-1/2          | 5       | 0.015       | Ti4-L-.6250-R.015   | 401280 | \$ 239.55  |
| 5/8     | 5/8                    | 4        |         | 2-1/2          | 5       | 0.030       | Ti4-L-.6250-R.030   | 401290 | \$ 239.55  |
| 5/8     | 5/8                    | 4        |         | 2-1/2          | 5       | 0.060       | Ti4-L-.6250-R.060   | 401300 | \$ 241.12  |
| 5/8     | 5/8                    | 4        |         | 2-1/2          | 5       | BALL        | Ti4-L-.6250-BN      | 401310 | \$ 257.04  |
| 3/4     | 3/4                    | 4        |         | 1              | 3       | SQ          | Ti4-S-.7500-SQ      | 401320 | \$ 256.51  |
| 3/4     | 3/4                    | 4        | 2       | 1              | 4       | SQ          | Ti4-S-.7500-SQ-RN1  | 401321 | \$ 274.27  |
| 3/4     | 3/4                    | 4        | 2-1/2   | 1              | 4       | SQ          | Ti4-SR-.7500-SQ-RN2 | 401322 | \$ 337.70  |
| 3/4     | 3/4                    | 4        | 3-3/8   | 1              | 6       | SQ          | Ti4-SM-.7500-SQ-RN3 | 401323 | \$ 353.75  |
| 3/4     | 3/4                    | 4        | 4-1/8   | 1              | 6       | SQ          | Ti4-SL-.7500-SQ-RN4 | 401324 | \$ 359.79  |
| 3/4     | 3/4                    | 4        |         | 1              | 3       | 0.015       | Ti4-S-.7500-R.015   | 401330 | \$ 263.47  |
| 3/4     | 3/4                    | 4        |         | 1              | 3       | 0.030       | Ti4-S-.7500-R.030   | 401340 | \$ 263.47  |
| 3/4     | 3/4                    | 4        |         | 1              | 3       | 0.06        | Ti4-S-.7500-R.060   | 401350 | \$ 267.10  |
| 3/4     | 3/4                    | 4        |         | 1              | 3       | BALL        | Ti4-S-.7500-BN      | 401360 | \$ 295.94  |
| 3/4     | 3/4                    | 4        |         | 1-5/8          | 4       | SQ          | Ti4-R-.7500-SQ      | 401370 | \$ 264.23  |
| 3/4     | 3/4                    | 4        |         | 1-5/8          | 4       | 0.015       | Ti4-R-.7500-R.015   | 401380 | \$ 271.33  |
| 3/4     | 3/4                    | 4        |         | 1-5/8          | 4       | 0.030       | Ti4-R-.7500-R.030   | 401390 | \$ 271.33  |
| 3/4     | 3/4                    | 4        |         | 1-5/8          | 4       | 0.060       | Ti4-R-.7500-R.060   | 401400 | \$ 275.78  |
| 3/4     | 3/4                    | 4        |         | 1-5/8          | 4       | BALL        | Ti4-R-.7500-BN      | 401410 | \$ 307.79  |
| 3/4     | 3/4                    | 4        |         | 2-1/4          | 5       | SQ          | Ti4-M-.7500-SQ      | 401420 | \$ 284.23  |
| 3/4     | 3/4                    | 4        |         | 2-1/4          | 5       | 0.015       | Ti4-M-.7500-R.015   | 401430 | \$ 294.55  |
| 3/4     | 3/4                    | 4        |         | 2-1/4          | 5       | 0.030       | Ti4-M-.7500-R.030   | 401440 | \$ 297.55  |
| 3/4     | 3/4                    | 4        |         | 2-1/4          | 5       | 0.06        | Ti4-M-.7500-R.060   | 401450 | \$ 302.15  |
| 3/4     | 3/4                    | 4        |         | 2-1/4          | 5       | BALL        | Ti4-M-.7500-BN      | 401460 | \$ 333.18  |
| 3/4     | 3/4                    | 4        |         | 2-3/4          | 5       | SQ          | Ti4-L-.7500-SQ      | 401470 | \$ 305.78  |
| 3/4     | 3/4                    | 4        |         | 2-3/4          | 5       | 0.015       | Ti4-L-.7500-R.015   | 401480 | \$ 314.59  |
| 3/4     | 3/4                    | 4        |         | 2-3/4          | 5       | 0.030       | Ti4-L-.7500-R.030   | 401490 | \$ 314.59  |
| 3/4     | 3/4                    | 4        |         | 2-3/4          | 5       | 0.060       | Ti4-L-.7500-R.060   | 401500 | \$ 316.52  |
| 3/4     | 3/4                    | 4        |         | 3-1/4          | 6       | SQ          | Ti4-X-.750-SQ       | 401510 | \$ 341.34  |
| 3/4     | 3/4                    | 4        |         | 3-1/4          | 6       | 0.015       | Ti4-X-.750-R015     | 401520 | \$ 350.04  |
| 3/4     | 3/4                    | 4        |         | 3-1/4          | 6       | 0.030       | Ti4-X-.750-R030     | 401530 | \$ 350.04  |
| 3/4     | 3/4                    | 4        |         | 3-1/4          | 6       | 0.060       | Ti4-X-.750-R060     | 401540 | \$ 339.72  |
| 3/4     | 3/4                    | 4        |         | 3-1/4          | 6       | 0.120       | Ti4-X-.750-R120     | 401550 | \$ 365.79  |

| Material Guide                        |                              |                              | Condition                                | SFM | FL | CHIP PER TOOTH |        |        |        |        |        |        |        |        |
|---------------------------------------|------------------------------|------------------------------|------------------------------------------|-----|----|----------------|--------|--------|--------|--------|--------|--------|--------|--------|
|                                       |                              |                              |                                          |     |    | 1/8"           | 3/16"  | 1/4"   | 5/16"  | 3/8"   | 1/2"   | 5/8"   | 3/4"   | 1"     |
| ISO-M                                 | Precipitation                | 13-8, 15-5, 17-4PH           | High Speed Profiling @ Full Length Axial | 450 | 4  | 0.0013         | 0.0018 | 0.0024 | 0.0031 | 0.0037 | 0.0049 | 0.0062 | 0.0074 | 0.0099 |
|                                       |                              |                              | Profiling @ Full Length Axial            | 325 | 4  | 0.0013         | 0.0017 | 0.0024 | 0.0031 | 0.0036 | 0.0047 | 0.0060 | 0.0071 | 0.0096 |
|                                       | Austenitic                   | 302, 303, 304L, 316L         | High Speed Profiling @ Full Length Axial | 475 | 4  | 0.0015         | 0.0020 | 0.0029 | 0.0038 | 0.0044 | 0.0060 | 0.0074 | 0.0089 | 0.0119 |
|                                       |                              |                              | Profiling @ Full Length Axial            | 325 | 4  | 0.0015         | 0.0021 | 0.0028 | 0.0037 | 0.0043 | 0.0057 | 0.0071 | 0.0085 | 0.0114 |
|                                       | Martensitic                  | 403, 410, 416                | High Speed Profiling @ Full Length Axial | 500 | 4  | 0.0014         | 0.0020 | 0.0026 | 0.0034 | 0.0040 | 0.0053 | 0.0066 | 0.0080 | 0.0106 |
|                                       |                              |                              | Profiling @ Full Length Axial            | 375 | 4  | 0.0015         | 0.0023 | 0.0030 | 0.0040 | 0.0045 | 0.0061 | 0.0076 | 0.0090 | 0.0122 |
| ISO-P                                 | High Strength Steels         | 4140, 4340, 52100            | High Speed Profiling @ Full Length Axial | 500 | 4  | 0.0014         | 0.0020 | 0.0026 | 0.0034 | 0.0040 | 0.0053 | 0.0066 | 0.0080 | 0.0106 |
|                                       |                              |                              | Profiling @ Full Length Axial            | 375 | 4  | 0.0015         | 0.0024 | 0.0030 | 0.0040 | 0.0045 | 0.0061 | 0.0076 | 0.0090 | 0.0122 |
|                                       | High Alloy Steels Mold & Die | A-2, P20, 01, 02, D2, H-13   | High Speed Profiling @ Full Length Axial | 475 | 4  | 0.0012         | 0.0017 | 0.0023 | 0.0030 | 0.0034 | 0.0044 | 0.0056 | 0.0067 | 0.0090 |
|                                       |                              |                              | Profiling @ Full Length Axial            | 350 | 4  | 0.0014         | 0.0019 | 0.0025 | 0.0033 | 0.0039 | 0.0051 | 0.0064 | 0.0077 | 0.0103 |
|                                       | Medium Alloy Steels          | 200,250, 300                 | High Speed Profiling @ Full Length Axial | 425 | 4  | 0.0014         | 0.0020 | 0.0026 | 0.0034 | 0.0040 | 0.0053 | 0.0066 | 0.0080 | 0.0106 |
|                                       |                              |                              | Profiling @ Full Length Axial            | 375 | 4  | 0.0015         | 0.0024 | 0.0030 | 0.0040 | 0.0045 | 0.0061 | 0.0076 | 0.0090 | 0.0122 |
|                                       | Low Alloy Steels-Maraging    | 10XX, 11XX, 13XX             | High Speed Profiling @ Full Length Axial | 525 | 4  | 0.0015         | 0.0024 | 0.0029 | 0.0038 | 0.0043 | 0.0058 | 0.0072 | 0.0087 | 0.0117 |
|                                       |                              |                              | Profiling @ Full Length Axial            | 400 | 4  | 0.0017         | 0.0025 | 0.0034 | 0.0044 | 0.0060 | 0.0066 | 0.0083 | 0.0100 | 0.0133 |
| ISO-K                                 | Ductile Iron                 | ASTM A536, ASTM 897          | High Speed Profiling @ Full Length Axial | 475 | 4  | 0.0011         | 0.0015 | 0.0021 | 0.0027 | 0.0032 | 0.0042 | 0.0053 | 0.0062 | 0.0083 |
|                                       |                              |                              | Profiling @ Full Length Axial            | 350 | 4  | 0.0013         | 0.0016 | 0.0024 | 0.0031 | 0.0036 | 0.0047 | 0.0060 | 0.0071 | 0.0096 |
|                                       | Cast Iron                    | SAE J431, ASTM A48           | High Speed Profiling @ Full Length Axial | 500 | 4  | 0.0013         | 0.0019 | 0.0024 | 0.0031 | 0.0037 | 0.0050 | 0.0062 | 0.0075 | 0.0100 |
|                                       |                              |                              | Profiling @ Full Length Axial            | 375 | 4  | 0.0015         | 0.0023 | 0.0028 | 0.0037 | 0.0043 | 0.0057 | 0.0071 | 0.0085 | 0.0114 |
| ISO-S                                 | Titanium Alloys              | 6AL-4V, ASTM 1, 2, 3, 6AL-2S | High Speed Profiling @ Full Length Axial | 425 | 4  | 0.0012         | 0.0017 | 0.0023 | 0.0030 | 0.0034 | 0.0045 | 0.0057 | 0.0068 | 0.0090 |
|                                       |                              |                              | Profiling @ Full Length Axial            | 300 | 4  | 0.0012         | 0.0017 | 0.0022 | 0.0029 | 0.0034 | 0.0043 | 0.0055 | 0.0065 | 0.0087 |
| For 5553, decrease SFM and IPM by 25% |                              |                              |                                          |     |    |                |        |        |        |        |        |        |        |        |

For 5553, decrease SFM and IPM by 25%

Ti4 Stepovert for Dynamic Milling shouldn't surpass 25% of Dia inside

| Material Guide |                                   |                              | Condition          | SFM | FL | CHIP PER TOOTH |        |        |        |        |        |        |        |        |
|----------------|-----------------------------------|------------------------------|--------------------|-----|----|----------------|--------|--------|--------|--------|--------|--------|--------|--------|
|                |                                   |                              |                    |     |    | 1/8"           | 3/16"  | 1/4"   | 5/16"  | 3/8"   | 1/2"   | 5/8"   | 3/4"   | 1"     |
| ISO-M          | Precipitation                     | 13-8, 15-5, 17-4PH           | Slotting @ ≤ 1 x D | 250 | 4  | 0.0008         | 0.0013 | 0.0017 | 0.0022 | 0.0024 | 0.0033 | 0.0041 | 0.0050 | 0.0067 |
|                | Austenitic                        | 302, 303, 304L, 316L         | Slotting @ ≤ 1 x D | 275 | 4  | 0.0010         | 0.0015 | 0.0019 | 0.0025 | 0.0030 | 0.0040 | 0.0050 | 0.0059 | 0.0079 |
|                | Martensitic                       | 403, 410, 416                | Slotting @ ≤ 1 x D | 300 | 4  | 0.0011         | 0.0017 | 0.0021 | 0.0027 | 0.0031 | 0.0042 | 0.0053 | 0.0063 | 0.0085 |
| ISO-P          | High Strength Steels              | 4140, 4340, 52100            | Slotting @ ≤ 1 x D | 300 | 4  | 0.0011         | 0.0016 | 0.0021 | 0.0027 | 0.0031 | 0.0042 | 0.0053 | 0.0063 | 0.0085 |
|                | High Alloy Steels Mold & Die      | A-2, P20, 01, 02, D2, H-13   | Slotting @ ≤ 1 x D | 275 | 4  | 0.0008         | 0.0013 | 0.0018 | 0.0024 | 0.0027 | 0.0035 | 0.0045 | 0.0053 | 0.0071 |
|                | Medium Alloy Steels               | 200,250, 300                 | Slotting @ ≤ 1 x D | 325 | 4  | 0.0006         | 0.0006 | 0.0018 | 0.0024 | 0.0029 | 0.0036 | 0.0048 | 0.0061 | 0.0073 |
|                | Low Alloy Steels-Maraging         | 10XX, 11XX, 13XX             | Slotting @ ≤ 1 x D | 325 | 4  | 0.0012         | 0.0018 | 0.0023 | 0.0030 | 0.0035 | 0.0046 | 0.0058 | 0.0069 | 0.0092 |
| ISO-K          | Ductile Iron<br>Ductile Cast Iron | ASTM A536, ASTM 897          | Slotting @ ≤ 1 x D | 400 | 4  | 0.0006         | 0.0010 | 0.0012 | 0.0016 | 0.0018 | 0.0024 | 0.0030 | 0.0036 | 0.0048 |
|                | Cast Iron<br>Grey Cast Iron       | SAE J431, ASTM A48           | Slotting @ ≤ 1 x D | 450 | 4  | 0.0007         | 0.0012 | 0.0015 | 0.0019 | 0.0022 | 0.0029 | 0.0036 | 0.0044 | 0.0058 |
| ISO-S          | Titanium Alloys                   | 6AL-4V, ASTM 1, 2, 3, 6AL-2S | Slotting @ ≤ 1 x D | 275 | 4  | 0.0007         | 0.0012 | 0.0016 | 0.0020 | 0.0023 | 0.0030 | 0.0038 | 0.0046 | 0.0061 |

For 5553, decrease SFM and IPM by 25%

For 5553, decrease SFM and IPM by 25%

Long and Extra Long LOC should have feed reduced by 50%

# Titanium & High Temp Alloys



| Carbide | 5 Flute Center Cutting | Variable | AlTiSiN | +.000 / -.002 | HRC <54 | Series: Ti5       |        |            |
|---------|------------------------|----------|---------|---------------|---------|-------------------|--------|------------|
| CUT DIA | SHANK DIA              | FLUTES   | LOC     | OAL           | CORNER  | PART NAME         | EDP    | PRICE LIST |
| 1/8     | 1/8                    | 5        | 1/4     | 1-1/2         | SQ      | Ti5-S-.1250-SQ    | 500000 | \$ 21.88   |
| 1/8     | 1/8                    | 5        | 1/4     | 1-1/2         | 0.010   | Ti5-S-.1250-R.010 | 500010 | \$ 22.20   |
| 1/8     | 1/8                    | 5        | 1/4     | 1-1/2         | 0.015   | Ti5-S-.1250-R.015 | 500020 | \$ 22.20   |
| 1/8     | 1/8                    | 5        | 1/4     | 1-1/2         | BALL    | Ti5-S-.1250-BN    | 500030 | \$ 29.36   |
| 1/8     | 1/8                    | 5        | 1/2     | 2             | SQ      | Ti5-R-.1250-SQ    | 500040 | \$ 22.51   |
| 1/8     | 1/8                    | 5        | 1/2     | 2             | 0.010   | Ti5-R-.1250-R.010 | 500050 | \$ 22.85   |
| 1/8     | 1/8                    | 5        | 1/2     | 2             | 0.015   | Ti5-R-.1250-R.015 | 500060 | \$ 22.85   |
| 1/8     | 1/8                    | 5        | 1/2     | 2             | BALL    | Ti5-R-.1250-BN    | 500070 | \$ 30.16   |
| 1/8     | 1/8                    | 5        | 3/4     | 2-1/2         | SQ      | Ti5-M-.1250-SQ    | 500080 | \$ 26.00   |
| 1/8     | 1/8                    | 5        | 3/4     | 2-1/2         | 0.010   | Ti5-M-.1250-R.010 | 500090 | \$ 35.11   |
| 1/8     | 1/8                    | 5        | 3/4     | 2-1/2         | 0.015   | Ti5-M-.1250-R.015 | 500100 | \$ 35.11   |
| 1/8     | 1/8                    | 5        | 3/4     | 2-1/2         | BALL    | Ti5-M-.1250-BN    | 500110 | \$ 34.59   |
| 3/16    | 3/16                   | 5        | 5/16    | 2             | SQ      | Ti5-S-.1875-SQ    | 500120 | \$ 26.17   |
| 3/16    | 3/16                   | 5        | 5/16    | 2             | 0.01    | Ti5-S-.1875-R.010 | 500130 | \$ 26.53   |
| 3/16    | 3/16                   | 5        | 5/16    | 2             | 0.015   | Ti5-S-.1875-R.015 | 500140 | \$ 26.53   |
| 3/16    | 3/16                   | 5        | 5/16    | 2             | 0.030   | Ti5-S-.1875-R.030 | 500150 | \$ 30.91   |
| 3/16    | 3/16                   | 5        | 5/16    | 2             | BALL    | Ti5-S-.1875-BN    | 500160 | \$ 34.83   |
| 3/16    | 3/16                   | 5        | 9/16    | 2             | SQ      | Ti5-R-.1875-SQ    | 500170 | \$ 28.22   |
| 3/16    | 3/16                   | 5        | 9/16    | 2             | 0.010   | Ti5-R-.1875-R.010 | 500180 | \$ 28.63   |
| 3/16    | 3/16                   | 5        | 9/16    | 2             | 0.015   | Ti5-R-.1875-R.015 | 500190 | \$ 28.63   |
| 3/16    | 3/16                   | 5        | 9/16    | 2             | 0.030   | Ti5-R-.1875-R.030 | 500200 | \$ 33.64   |
| 3/16    | 3/16                   | 5        | 9/16    | 2             | BALL    | Ti5-R-.1875-BN    | 500210 | \$ 37.45   |
| 3/16    | 3/16                   | 5        | 3/4     | 2-1/2         | SQ      | Ti5-M-.1875-SQ    | 500220 | \$ 29.19   |
| 3/16    | 3/16                   | 5        | 3/4     | 2-1/2         | 0.010   | Ti5-M-.1875-R.010 | 500230 | \$ 38.82   |
| 3/16    | 3/16                   | 5        | 3/4     | 2-1/2         | 0.015   | Ti5-M-.1875-R.015 | 500240 | \$ 38.82   |
| 3/16    | 3/16                   | 5        | 3/4     | 2-1/2         | 0.030   | Ti5-M-.1875-R.030 | 500250 | \$ 38.82   |
| 3/16    | 3/16                   | 5        | 3/4     | 2-1/2         | BALL    | Ti5-M-.1875-BN    | 500260 | \$ 39.66   |
| 1/4     | 1/4                    | 5        | 3/8     | 2             | SQ      | Ti5-S-.2500-SQ    | 500270 | \$ 32.04   |
| 1/4     | 1/4                    | 5        | 3/8     | 2             | 0.015   | Ti5-S-.2500-R.015 | 500280 | \$ 36.87   |
| 1/4     | 1/4                    | 5        | 3/8     | 2             | 0.03    | Ti5-S-.2500-R.030 | 500290 | \$ 36.87   |
| 1/4     | 1/4                    | 5        | 3/8     | 2             | 0.060   | Ti5-S-.2500-R.060 | 500300 | \$ 38.97   |
| 1/4     | 1/4                    | 5        | 3/8     | 2             | BALL    | Ti5-S-.2500-BN    | 500310 | \$ 42.49   |
| 1/4     | 1/4                    | 5        | 1/2     | 2-1/2         | SQ      | Ti5-T-.2500-SQ    | 500320 | \$ 37.14   |
| 1/4     | 1/4                    | 5        | 1/2     | 2-1/2         | 0.015   | Ti5-T-.2500-R.015 | 500330 | \$ 40.42   |
| 1/4     | 1/4                    | 5        | 1/2     | 2-1/2         | 0.030   | Ti5-T-.2500-R.030 | 500340 | \$ 40.42   |
| 1/4     | 1/4                    | 5        | 1/2     | 2-1/2         | 0.060   | Ti5-T-.2500-R.060 | 500350 | \$ 43.25   |
| 1/4     | 1/4                    | 5        | 1/2     | 2-1/2         | BALL    | Ti5-T-.2500-BN    | 500360 | \$ 48.67   |
| 1/4     | 1/4                    | 5        | 3/4     | 2-1/2         | SQ      | Ti5-R-.2500-SQ    | 500370 | \$ 39.37   |
| 1/4     | 1/4                    | 5        | 3/4     | 2-1/2         | 0.015   | Ti5-R-.2500-R.015 | 500380 | \$ 44.09   |
| 1/4     | 1/4                    | 5        | 3/4     | 2-1/2         | 0.030   | Ti5-R-.2500-R.030 | 500390 | \$ 44.09   |

# Titanium & High Temp Alloys



| Carbide | 5 Flute Center Cutting | Variable | AlTiSiN | +.000 / -.002 | HRC <54 | Series: Ti5       |        |            |
|---------|------------------------|----------|---------|---------------|---------|-------------------|--------|------------|
| CUT DIA | SHANK DIA              | FLUTES   | LOC     | OAL           | CORNER  | PART NAME         | EDP    | PRICE LIST |
| 1/4     | 1/4                    | 5        | 3/4     | 2-1/2         | 0.060   | Ti5-R-.2500-R.060 | 500400 | \$ 51.81   |
| 1/4     | 1/4                    | 5        | 3/4     | 2-1/2         | BALL    | Ti5-R-.2500-BN    | 500410 | \$ 53.54   |
| 1/4     | 1/4                    | 5        | 1-1/4   | 3             | SQ      | Ti5-L-.2500-SQ    | 500420 | \$ 47.39   |
| 1/4     | 1/4                    | 5        | 1-1/4   | 3             | 0.015   | Ti5-L-.2500-R.015 | 500430 | \$ 57.77   |
| 1/4     | 1/4                    | 5        | 1-1/4   | 3             | 0.03    | Ti5-L-.2500-R.030 | 500440 | \$ 57.77   |
| 1/4     | 1/4                    | 5        | 1-1/4   | 3             | 0.060   | Ti5-L-.2500-R.060 | 500450 | \$ 59.40   |
| 1/4     | 1/4                    | 5        | 1-1/4   | 3             | BALL    | Ti5-L-.2500-BN    | 500460 | \$ 61.78   |
| 5/16    | 5/16                   | 5        | 7/16    | 2             | SQ      | Ti5-S-.3125-SQ    | 500470 | \$ 40.88   |
| 5/16    | 5/16                   | 5        | 7/16    | 2             | 0.015   | Ti5-S-.3125-R.015 | 500480 | \$ 51.64   |
| 5/16    | 5/16                   | 5        | 7/16    | 2             | 0.03    | Ti5-S-.3125-R.030 | 500490 | \$ 51.64   |
| 5/16    | 5/16                   | 5        | 7/16    | 2             | 0.060   | Ti5-S-.3125-R.060 | 500500 | \$ 53.40   |
| 5/16    | 5/16                   | 5        | 7/16    | 2             | BALL    | Ti5-S-.3125-BN    | 500510 | \$ 54.71   |
| 5/16    | 5/16                   | 5        | 13/16   | 2-1/2         | SQ      | Ti5-R-.3125-SQ    | 500520 | \$ 48.87   |
| 5/16    | 5/16                   | 5        | 13/16   | 2-1/2         | 0.015   | Ti5-R-.3125-R.015 | 500530 | \$ 55.21   |
| 5/16    | 5/16                   | 5        | 13/16   | 2-1/2         | 0.030   | Ti5-R-.3125-R.030 | 500540 | \$ 55.21   |
| 5/16    | 5/16                   | 5        | 13/16   | 2-1/2         | 0.060   | Ti5-R-.3125-R.060 | 500550 | \$ 61.64   |
| 5/16    | 5/16                   | 5        | 13/16   | 2-1/2         | BALL    | Ti5-R-.3125-BN    | 500560 | \$ 65.60   |
| 5/16    | 5/16                   | 5        | 1       | 3             | SQ      | Ti5-M-.3125-SQ    | 500570 | \$ 56.64   |
| 5/16    | 5/16                   | 5        | 1       | 3             | 0.015   | Ti5-M-.3125-R.015 | 500580 | \$ 67.79   |
| 5/16    | 5/16                   | 5        | 1       | 3             | 0.030   | Ti5-M-.3125-R.030 | 500590 | \$ 67.79   |
| 5/16    | 5/16                   | 5        | 1       | 3             | 0.060   | Ti5-M-.3125-R.060 | 500600 | \$ 69.40   |
| 5/16    | 5/16                   | 5        | 1       | 3             | BALL    | Ti5-M-.3125-BN    | 500610 | \$ 75.26   |
| 3/8     | 3/8                    | 5        | 1/2     | 2             | SQ      | Ti5-S-.3750-SQ    | 500620 | \$ 55.87   |
| 3/8     | 3/8                    | 5        | 1/2     | 2             | 0.015   | Ti5-S-.3750-R.015 | 500630 | \$ 63.27   |
| 3/8     | 3/8                    | 5        | 1/2     | 2             | 0.030   | Ti5-S-.3750-R.030 | 500640 | \$ 63.27   |
| 3/8     | 3/8                    | 5        | 1/2     | 2             | 0.060   | Ti5-S-.3750-R.060 | 500650 | \$ 65.35   |
| 3/8     | 3/8                    | 5        | 1/2     | 2             | BALL    | Ti5-S-.3750-BN    | 500660 | \$ 69.88   |
| 3/8     | 3/8                    | 5        | 1       | 2-1/2         | SQ      | Ti5-R-.3750-SQ    | 500670 | \$ 60.67   |
| 3/8     | 3/8                    | 5        | 1       | 2-1/2         | 0.015   | Ti5-R-.3750-R.015 | 500680 | \$ 66.82   |
| 3/8     | 3/8                    | 5        | 1       | 2-1/2         | 0.030   | Ti5-R-.3750-R.030 | 500690 | \$ 66.82   |
| 3/8     | 3/8                    | 5        | 1       | 2-1/2         | 0.060   | Ti5-R-.3750-R.060 | 500700 | \$ 68.90   |
| 3/8     | 3/8                    | 5        | 1       | 2-1/2         | BALL    | Ti5-R-.3750-BN    | 500710 | \$ 75.85   |
| 3/8     | 3/8                    | 5        | 1-1/4   | 3             | SQ      | Ti5-M-.3750-SQ    | 500720 | \$ 67.64   |
| 3/8     | 3/8                    | 5        | 1-1/4   | 3             | 0.015   | Ti5-M-.3750-R.015 | 500730 | \$ 79.37   |
| 3/8     | 3/8                    | 5        | 1-1/4   | 3             | 0.030   | Ti5-M-.3750-R.030 | 500740 | \$ 79.37   |
| 3/8     | 3/8                    | 5        | 1-1/4   | 3             | 0.060   | Ti5-M-.3750-R.060 | 500750 | \$ 81.13   |
| 3/8     | 3/8                    | 5        | 1-1/4   | 3             | BALL    | Ti5-M-.3750-BN    | 500760 | \$ 84.56   |
| 3/8     | 3/8                    | 5        | 1-3/4   | 4             | SQ      | Ti5-L-.3750-SQ    | 500770 | \$ 72.59   |
| 3/8     | 3/8                    | 5        | 1-3/4   | 4             | 0.015   | Ti5-L-.3750-R.015 | 500780 | \$ 84.37   |
| 3/8     | 3/8                    | 5        | 1-3/4   | 4             | 0.030   | Ti5-L-.3750-R.030 | 500790 | \$ 84.37   |

# Titanium & High Temp Alloys



| Carbide | 5 Flute Center Cutting | Variable | AlTiSiN | +.000 / -.002 | HRC <54 | Series: Ti5       |        |            |
|---------|------------------------|----------|---------|---------------|---------|-------------------|--------|------------|
| CUT DIA | SHANK DIA              | FLUTES   | LOC     | OAL           | CORNER  | PART NAME         | EDP    | PRICE LIST |
| 3/8     | 3/8                    | 5        | 1-3/4   | 4             | 0.060   | Ti5-L-.3750-R.060 | 500800 | \$ 86.29   |
| 3/8     | 3/8                    | 5        | 1-3/4   | 4             | BALL    | Ti5-L-.3750-BN    | 500810 | \$ 90.78   |
| 1/2     | 1/2                    | 5        | 5/8     | 2-1/2         | SQ      | Ti5-S-.5000-SQ    | 500820 | \$ 88.56   |
| 1/2     | 1/2                    | 5        | 5/8     | 2-1/2         | 0.015   | Ti5-S-.5000-R.015 | 500830 | \$ 100.80  |
| 1/2     | 1/2                    | 5        | 5/8     | 2-1/2         | 0.030   | Ti5-S-.5000-R.030 | 500840 | \$ 100.80  |
| 1/2     | 1/2                    | 5        | 5/8     | 2-1/2         | 0.060   | Ti5-S-.5000-R.060 | 500850 | \$ 103.28  |
| 1/2     | 1/2                    | 5        | 5/8     | 2-1/2         | BALL    | Ti5-S-.5000-BN    | 500860 | \$ 106.82  |
| 1/2     | 1/2                    | 5        | 1       | 3             | SQ      | Ti5-T-.5000-SQ    | 500870 | \$ 92.98   |
| 1/2     | 1/2                    | 5        | 1       | 3             | 0.015   | Ti5-T-.5000-R.015 | 500880 | \$ 105.59  |
| 1/2     | 1/2                    | 5        | 1       | 3             | 0.030   | Ti5-T-.5000-R.030 | 500890 | \$ 105.59  |
| 1/2     | 1/2                    | 5        | 1       | 3             | 0.060   | Ti5-T-.5000-R.060 | 500900 | \$ 107.88  |
| 1/2     | 1/2                    | 5        | 1       | 3             | BALL    | Ti5-T-.5000-BN    | 500910 | \$ 111.25  |
| 1/2     | 1/2                    | 5        | 1-1/4   | 3             | SQ      | Ti5-R-.5000-SQ    | 500920 | \$ 96.44   |
| 1/2     | 1/2                    | 5        | 1-1/4   | 3             | 0.015   | Ti5-R-.5000-R.015 | 500930 | \$ 107.88  |
| 1/2     | 1/2                    | 5        | 1-1/4   | 3             | 0.030   | Ti5-R-.5000-R.030 | 500940 | \$ 107.88  |
| 1/2     | 1/2                    | 5        | 1-1/4   | 3             | 0.060   | Ti5-R-.5000-R.060 | 500950 | \$ 109.86  |
| 1/2     | 1/2                    | 5        | 1-1/4   | 3             | BALL    | Ti5-R-.5000-BN    | 500960 | \$ 114.73  |
| 1/2     | 1/2                    | 5        | 1-5/8   | 4             | SQ      | Ti5-M-.5000-SQ    | 500970 | \$ 121.40  |
| 1/2     | 1/2                    | 5        | 1-5/8   | 4             | 0.015   | Ti5-M-.5000-R.015 | 500980 | \$ 132.18  |
| 1/2     | 1/2                    | 5        | 1-5/8   | 4             | 0.03    | Ti5-M-.5000-R.030 | 500990 | \$ 132.18  |
| 1/2     | 1/2                    | 5        | 1-5/8   | 4             | 0.060   | Ti5-M-.5000-R.060 | 501000 | \$ 134.33  |
| 1/2     | 1/2                    | 5        | 1-5/8   | 4             | BALL    | Ti5-M-.5000-BN    | 501010 | \$ 139.66  |
| 1/2     | 1/2                    | 5        | 2       | 4             | SQ      | Ti5-L-.5000-SQ    | 501020 | \$ 122.81  |
| 1/2     | 1/2                    | 5        | 2       | 4             | 0.015   | Ti5-L-.5000-R.015 | 501030 | \$ 136.62  |
| 1/2     | 1/2                    | 5        | 2       | 4             | 0.030   | Ti5-L-.5000-R.030 | 501040 | \$ 136.62  |
| 1/2     | 1/2                    | 5        | 2       | 4             | 0.060   | Ti5-L-.5000-R.060 | 501050 | \$ 138.42  |
| 1/2     | 1/2                    | 5        | 2       | 4             | BALL    | Ti5-L-.5000-BN    | 501060 | \$ 141.07  |
| 5/8     | 5/8                    | 5        | 3/4     | 3             | SQ      | Ti5-S-.6250-SQ    | 501070 | \$ 175.50  |
| 5/8     | 5/8                    | 5        | 3/4     | 3             | 0.015   | Ti5-S-.6250-R.015 | 501080 | \$ 184.98  |
| 5/8     | 5/8                    | 5        | 3/4     | 3             | 0.03    | Ti5-S-.6250-R.030 | 501090 | \$ 184.98  |
| 5/8     | 5/8                    | 5        | 3/4     | 3             | 0.060   | Ti5-S-.6250-R.060 | 501100 | \$ 186.54  |
| 5/8     | 5/8                    | 5        | 3/4     | 3             | BALL    | Ti5-S-.6250-BN    | 501110 | \$ 201.84  |
| 5/8     | 5/8                    | 5        | 1-1/4   | 3-1/2         | SQ      | Ti5-T-.6250-SQ    | 501120 | \$ 181.97  |
| 5/8     | 5/8                    | 5        | 1-1/4   | 3-1/2         | 0.015   | Ti5-T-.6250-R.015 | 501130 | \$ 191.30  |
| 5/8     | 5/8                    | 5        | 1-1/4   | 3-1/2         | 0.030   | Ti5-T-.6250-R.030 | 501140 | \$ 191.30  |
| 5/8     | 5/8                    | 5        | 1-1/4   | 3-1/2         | 0.06    | Ti5-T-.6250-R.060 | 501150 | \$ 193.03  |
| 5/8     | 5/8                    | 5        | 1-1/4   | 3-1/2         | BALL    | Ti5-T-.6250-BN    | 501160 | \$ 208.32  |
| 5/8     | 5/8                    | 5        | 1-5/8   | 3-1/2         | SQ      | Ti5-R-.6250-SQ    | 501170 | \$ 204.74  |
| 5/8     | 5/8                    | 5        | 1-5/8   | 3-1/2         | 0.015   | Ti5-R-.6250-R.015 | 501180 | \$ 213.91  |
| 5/8     | 5/8                    | 5        | 1-5/8   | 3-1/2         | 0.030   | Ti5-R-.6250-R.030 | 501190 | \$ 213.91  |

# Titanium & High Temp Alloys



| Carbide | 5 Flute Center Cutting | Variable | AlTiSiN | +.000 / -.002 | HRC <54 | Series: Ti5       |        |            |
|---------|------------------------|----------|---------|---------------|---------|-------------------|--------|------------|
| CUT DIA | SHANK DIA              | FLUTES   | LOC     | OAL           | CORNER  | PART NAME         | EDP    | PRICE LIST |
| 5/8     | 5/8                    | 5        | 1-5/8   | 3-1/2         | 0.060   | Ti5-R-.6250-R.060 | 501200 | \$ 215.50  |
| 5/8     | 5/8                    | 5        | 1-5/8   | 3-1/2         | BALL    | Ti5-R-.6250-BN    | 501210 | \$ 231.04  |
| 5/8     | 5/8                    | 5        | 2-1/8   | 4             | SQ      | Ti5-M-.6250-SQ    | 501220 | \$ 212.97  |
| 5/8     | 5/8                    | 5        | 2-1/8   | 4             | 0.015   | Ti5-M-.6250-R.015 | 501230 | \$ 222.09  |
| 5/8     | 5/8                    | 5        | 2-1/8   | 4             | 0.030   | Ti5-M-.6250-R.030 | 501240 | \$ 222.09  |
| 5/8     | 5/8                    | 5        | 2-1/8   | 4             | 0.06    | Ti5-M-.6250-R.060 | 501250 | \$ 223.65  |
| 5/8     | 5/8                    | 5        | 2-1/8   | 4             | BALL    | Ti5-M-.6250-BN    | 501260 | \$ 239.25  |
| 5/8     | 5/8                    | 5        | 2-1/2   | 5             | SQ      | Ti5-L-.6250-SQ    | 501270 | \$ 239.77  |
| 5/8     | 5/8                    | 5        | 2-1/2   | 5             | 0.015   | Ti5-L-.6250-R.015 | 501280 | \$ 248.64  |
| 5/8     | 5/8                    | 5        | 2-1/2   | 5             | 0.030   | Ti5-L-.6250-R.030 | 501290 | \$ 248.64  |
| 5/8     | 5/8                    | 5        | 2-1/2   | 5             | 0.060   | Ti5-L-.6250-R.060 | 501300 | \$ 250.20  |
| 5/8     | 5/8                    | 5        | 2-1/2   | 5             | BALL    | Ti5-L-.6250-BN    | 501310 | \$ 266.14  |
| 3/4     | 3/4                    | 5        | 1       | 3             | SQ      | Ti5-S-.7500-SQ    | 501320 | \$ 262.39  |
| 3/4     | 3/4                    | 5        | 1       | 3             | 0.015   | Ti5-S-.7500-R.015 | 501330 | \$ 270.77  |
| 3/4     | 3/4                    | 5        | 1       | 3             | 0.030   | Ti5-S-.7500-R.030 | 501340 | \$ 270.77  |
| 3/4     | 3/4                    | 5        | 1       | 3             | 0.060   | Ti5-S-.7500-R.060 | 501350 | \$ 272.98  |
| 3/4     | 3/4                    | 5        | 1       | 3             | BALL    | Ti5-S-.7500-BN    | 501360 | \$ 301.81  |
| 3/4     | 3/4                    | 5        | 1-5/8   | 4             | SQ      | Ti5-R-.7500-SQ    | 501370 | \$ 286.91  |
| 3/4     | 3/4                    | 5        | 1-5/8   | 4             | 0.015   | Ti5-R-.7500-R.015 | 501380 | \$ 295.59  |
| 3/4     | 3/4                    | 5        | 1-5/8   | 4             | 0.030   | Ti5-R-.7500-R.030 | 501390 | \$ 295.59  |
| 3/4     | 3/4                    | 5        | 1-5/8   | 4             | 0.060   | Ti5-R-.7500-R.060 | 501400 | \$ 297.36  |
| 3/4     | 3/4                    | 5        | 1-5/8   | 4             | BALL    | Ti5-R-.7500-BN    | 501410 | \$ 326.26  |
| 3/4     | 3/4                    | 5        | 2-1/4   | 5             | SQ      | Ti5-M-.7500-SQ    | 501420 | \$ 317.67  |
| 3/4     | 3/4                    | 5        | 2-1/4   | 5             | 0.015   | Ti5-M-.7500-R.015 | 501430 | \$ 326.22  |
| 3/4     | 3/4                    | 5        | 2-1/4   | 5             | 0.030   | Ti5-M-.7500-R.030 | 501440 | \$ 326.22  |
| 3/4     | 3/4                    | 5        | 2-1/4   | 5             | 0.060   | Ti5-M-.7500-R.060 | 501450 | \$ 328.12  |
| 3/4     | 3/4                    | 5        | 2-1/4   | 5             | BALL    | Ti5-M-.7500-BN    | 501460 | \$ 357.09  |
| 3/4     | 3/4                    | 5        | 2-3/4   | 5             | SQ      | Ti5-L-.7500-SQ    | 501470 | \$ 337.13  |
| 3/4     | 3/4                    | 5        | 2-3/4   | 5             | 0.015   | Ti5-L-.7500-R.015 | 501480 | \$ 344.88  |
| 3/4     | 3/4                    | 5        | 2-3/4   | 5             | 0.030   | Ti5-L-.7500-R.030 | 501490 | \$ 344.88  |
| 3/4     | 3/4                    | 5        | 2-3/4   | 5             | 0.060   | Ti5-L-.7500-R.060 | 501500 | \$ 347.81  |
| 3/4     | 3/4                    | 5        | 3-1/4   | 6             | SQ      | Ti5-X-.750-SQ     | 501510 | \$ 372.98  |
| 3/4     | 3/4                    | 5        | 3-1/4   | 6             | 0.015   | Ti5-X-.750-R.015  | 501520 | \$ 381.93  |
| 3/4     | 3/4                    | 5        | 3-1/4   | 6             | 0.030   | Ti5-X-.750-R.030  | 501530 | \$ 381.93  |
| 3/4     | 3/4                    | 5        | 3-1/4   | 6             | 0.060   | Ti5-X-.750-R.060  | 501540 | \$ 383.90  |
| 3/4     | 3/4                    | 5        | 3-1/4   | 6             | 0.120   | Ti5-X-.750-R.120  | 501550 | \$ 390.62  |

| Material Guide |                                   |                              | Condition                                | SFM | FL | CHIP PER TOOTH |        |        |        |        |        |        |        |        |  |
|----------------|-----------------------------------|------------------------------|------------------------------------------|-----|----|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--|
|                |                                   |                              |                                          |     |    | 1/8"           | 3/16"  | 1/4"   | 5/16"  | 3/8"   | 1/2"   | 5/8"   | 3/4"   | 1"     |  |
| ISO-M          | Precipitation                     | 13-8, 15-5, 17-4PH           | High Speed Profiling @ Full Length Axial | 450 | 5  | 0.0013         | 0.0018 | 0.0024 | 0.0031 | 0.0037 | 0.0049 | 0.0062 | 0.0074 | 0.0099 |  |
|                |                                   |                              | Profiling @ Full Length Axial            | 325 | 5  | 0.0013         | 0.0017 | 0.0024 | 0.0031 | 0.0036 | 0.0047 | 0.0060 | 0.0071 | 0.0096 |  |
|                | Austenitic                        | 302, 303, 304L, 316L         | High Speed Profiling @ Full Length Axial | 475 | 5  | 0.0015         | 0.0020 | 0.0029 | 0.0038 | 0.0044 | 0.0060 | 0.0074 | 0.0089 | 0.0119 |  |
|                |                                   |                              | Profiling @ Full Length Axial            | 325 | 5  | 0.0015         | 0.0021 | 0.0028 | 0.0037 | 0.0043 | 0.0057 | 0.0071 | 0.0085 | 0.0114 |  |
|                | Martensitic                       | 403, 410, 416                | High Speed Profiling @ Full Length Axial | 500 | 5  | 0.0014         | 0.0020 | 0.0026 | 0.0034 | 0.0040 | 0.0053 | 0.0066 | 0.0080 | 0.0106 |  |
|                |                                   |                              | Profiling @ Full Length Axial            | 375 | 5  | 0.0015         | 0.0023 | 0.0030 | 0.0040 | 0.0045 | 0.0061 | 0.0076 | 0.0090 | 0.0122 |  |
| ISO-P          | High Strength Steels              | 4140, 4340, 52100            | High Speed Profiling @ Full Length Axial | 500 | 5  | 0.0014         | 0.0020 | 0.0026 | 0.0034 | 0.0040 | 0.0053 | 0.0066 | 0.0080 | 0.0106 |  |
|                |                                   |                              | Profiling @ Full Length Axial            | 375 | 5  | 0.0015         | 0.0024 | 0.0030 | 0.0040 | 0.0045 | 0.0061 | 0.0076 | 0.0090 | 0.0122 |  |
|                | High Alloy Steels Mold & Die      | A-2, P20, 01, 02, D2, H-13   | High Speed Profiling @ Full Length Axial | 475 | 5  | 0.0012         | 0.0017 | 0.0023 | 0.0030 | 0.0034 | 0.0044 | 0.0056 | 0.0067 | 0.0090 |  |
|                |                                   |                              | Profiling @ Full Length Axial            | 350 | 5  | 0.0014         | 0.0019 | 0.0025 | 0.0033 | 0.0039 | 0.0051 | 0.0064 | 0.0077 | 0.0103 |  |
|                | Medium Alloy Steels               | 200,250, 300                 | High Speed Profiling @ Full Length Axial | 425 | 5  | 0.0014         | 0.0020 | 0.0026 | 0.0034 | 0.0040 | 0.0053 | 0.0066 | 0.0080 | 0.0106 |  |
|                |                                   |                              | Profiling @ Full Length Axial            | 375 | 5  | 0.0015         | 0.0024 | 0.0030 | 0.0040 | 0.0045 | 0.0061 | 0.0076 | 0.0090 | 0.0122 |  |
|                | Low Alloy Steels-Maraging         | 10XX, 11XX, 13XX             | High Speed Profiling @ Full Length Axial | 525 | 5  | 0.0015         | 0.0024 | 0.0029 | 0.0038 | 0.0043 | 0.0058 | 0.0072 | 0.0087 | 0.0117 |  |
|                |                                   |                              | Profiling @ Full Length Axial            | 400 | 5  | 0.0017         | 0.0025 | 0.0034 | 0.0044 | 0.0060 | 0.0066 | 0.0083 | 0.0100 | 0.0133 |  |
| ISO-K          | Ductile Iron<br>Ductile Cast Iron | ASTM A536, ASTM 897          | High Speed Profiling @ Full Length Axial | 475 | 5  | 0.0011         | 0.0015 | 0.0021 | 0.0027 | 0.0032 | 0.0042 | 0.0053 | 0.0062 | 0.0083 |  |
|                |                                   |                              | Profiling @ Full Length Axial            | 350 | 5  | 0.0013         | 0.0016 | 0.0024 | 0.0031 | 0.0036 | 0.0047 | 0.0060 | 0.0071 | 0.0096 |  |
|                | Cast Iron<br>Grey Cast Iron       | SAE J431, ASTM A48           | High Speed Profiling @ Full Length Axial | 500 | 5  | 0.0013         | 0.0019 | 0.0024 | 0.0031 | 0.0037 | 0.0050 | 0.0062 | 0.0075 | 0.0100 |  |
|                |                                   |                              | Profiling @ Full Length Axial            | 375 | 5  | 0.0015         | 0.0023 | 0.0028 | 0.0037 | 0.0043 | 0.0057 | 0.0071 | 0.0085 | 0.0114 |  |
| ISO-S          | Titanium Alloys                   | 6AL-4V, ASTM 1, 2, 3, 6AL-2S | High Speed Profiling @ Full Length Axial | 425 | 5  | 0.0012         | 0.0017 | 0.0023 | 0.0030 | 0.0034 | 0.0045 | 0.0057 | 0.0068 | 0.0090 |  |
|                |                                   |                              | Profiling @ Full Length Axial            | 300 | 5  | 0.0012         | 0.0017 | 0.0022 | 0.0029 | 0.0034 | 0.0043 | 0.0055 | 0.0065 | 0.0087 |  |

For 5553, decrease SFM and IPM by 25%

T15 Stepmover for Dynamic Milling shouldn't surpass 25% of Dia. inside

| Material Guide |                                   |                              | Condition          | SFM | FL | CHIP PER TOOTH |        |        |        |        |        |        |        |        |  |
|----------------|-----------------------------------|------------------------------|--------------------|-----|----|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--|
|                |                                   |                              |                    |     |    | 1/8"           | 3/16"  | 1/4"   | 5/16"  | 3/8"   | 1/2"   | 5/8"   | 3/4"   | 1"     |  |
| ISO-M          | Precipitation                     | 13-8, 15-5, 17-4PH           | Slotting @ ≤ 1 x D | 250 | 5  | 0.0008         | 0.0013 | 0.0017 | 0.0022 | 0.0024 | 0.0033 | 0.0041 | 0.0050 | 0.0067 |  |
|                | Austenitic                        | 302, 303, 304L, 316L         | Slotting @ ≤ 1 x D | 275 | 5  | 0.0010         | 0.0015 | 0.0019 | 0.0025 | 0.0030 | 0.0040 | 0.0050 | 0.0059 | 0.0079 |  |
|                | Martensitic                       | 403, 410, 416                | Slotting @ ≤ 1 x D | 300 | 5  | 0.0011         | 0.0017 | 0.0021 | 0.0027 | 0.0031 | 0.0042 | 0.0053 | 0.0063 | 0.0085 |  |
| ISO-P          | High Strength Steels              | 4140, 4340, 52100            | Slotting @ ≤ 1 x D | 300 | 5  | 0.0011         | 0.0016 | 0.0021 | 0.0027 | 0.0031 | 0.0042 | 0.0053 | 0.0063 | 0.0085 |  |
|                | High Alloy Steels Mold & Die      | A-2, P20, 01, 02, D2, H-13   | Slotting @ ≤ 1 x D | 275 | 5  | 0.0008         | 0.0013 | 0.0018 | 0.0024 | 0.0027 | 0.0035 | 0.0045 | 0.0053 | 0.0071 |  |
|                | Medium Alloy Steels               | 200,250, 300                 | Slotting @ ≤ 1 x D | 325 | 5  | 0.0006         | 0.0006 | 0.0018 | 0.0024 | 0.0029 | 0.0036 | 0.0048 | 0.0061 | 0.0073 |  |
|                | Low Alloy Steels-Maraging         | 10XX, 11XX, 13XX             | Slotting @ ≤ 1 x D | 325 | 5  | 0.0012         | 0.0018 | 0.0023 | 0.0030 | 0.0035 | 0.0046 | 0.0058 | 0.0069 | 0.0092 |  |
| ISO-K          | Ductile Iron<br>Ductile Cast Iron | ASTM A536, ASTM 897          | Slotting @ ≤ 1 x D | 400 | 5  | 0.0006         | 0.0010 | 0.0012 | 0.0016 | 0.0018 | 0.0024 | 0.0030 | 0.0036 | 0.0048 |  |
|                | Cast Iron<br>Grey Cast Iron       | SAE J431, ASTM A48           | Slotting @ ≤ 1 x D | 450 | 5  | 0.0007         | 0.0012 | 0.0015 | 0.0019 | 0.0022 | 0.0029 | 0.0036 | 0.0044 | 0.0058 |  |
| ISO-S          | Titanium Alloys                   | 6AL-4V, ASTM 1, 2, 3, 6AL-2S | Slotting @ ≤ 1 x D | 275 | 5  | 0.0007         | 0.0012 | 0.0016 | 0.0020 | 0.0023 | 0.0030 | 0.0038 | 0.0046 | 0.0061 |  |

For 5553, decrease SFM and IPM by 25%

Long and Extra Long LOC should have feed reduced by 50%

# Titanium & High Temp Alloys



| Carbide | 7 Flute Center Cutting | Variable | AlTiSiN | +.000 / -.002 | HRC <54 | Series: Ti7       |        |            |
|---------|------------------------|----------|---------|---------------|---------|-------------------|--------|------------|
| CUT DIA | SHANK DIA              | FLUTES   | LOC     | OAL           | CORNER  | PART NAME         | EDP    | PRICE LIST |
| 3/16    | 3/16                   | 7        | 9/16    | 2-1/2         | SQ      | Ti7-R-.1875-SQ    | 700000 | \$ 28.85   |
| 3/16    | 3/16                   | 7        | 9/16    | 2-1/2         | 0.015   | Ti7-R-.1875-R.015 | 700010 | \$ 28.85   |
| 3/16    | 3/16                   | 7        | 3/4     | 2-1/2         | SQ      | Ti7-M-.1875-SQ    | 700020 | \$ 68.15   |
| 3/16    | 3/16                   | 7        | 3/4     | 2-1/2         | 0.015   | Ti7-M-.1875-R.015 | 700030 | \$ 68.15   |
| 1/4     | 1/4                    | 7        | 1/2     | 2-1/2         | SQ      | Ti7-T-.2500-SQ    | 700040 | \$ 59.34   |
| 1/4     | 1/4                    | 7        | 1/2     | 2-1/2         | 0.015   | Ti7-T-.2500-R.015 | 700050 | \$ 59.34   |
| 1/4     | 1/4                    | 7        | 1/2     | 2-1/2         | 0.030   | Ti7-T-.2500-R.030 | 700060 | \$ 59.34   |
| 1/4     | 1/4                    | 7        | 3/4     | 2-1/2         | SQ      | Ti7-R-.2500-SQ    | 700070 | \$ 60.52   |
| 1/4     | 1/4                    | 7        | 3/4     | 2-1/2         | 0.015   | Ti7-R-.2500-R.015 | 700080 | \$ 60.52   |
| 1/4     | 1/4                    | 7        | 3/4     | 2-1/2         | 0.030   | Ti7-R-.2500-R.030 | 700090 | \$ 60.52   |
| 1/4     | 1/4                    | 7        | 1-1/4   | 3             | SQ      | Ti7-L-.2500-SQ    | 700100 | \$ 83.07   |
| 1/4     | 1/4                    | 7        | 1-1/4   | 3             | 0.015   | Ti7-L-.2500-R.015 | 700110 | \$ 83.07   |
| 1/4     | 1/4                    | 7        | 1-1/4   | 3             | 0.03    | Ti7-L-.2500-R.030 | 700120 | \$ 83.07   |
| 3/8     | 3/8                    | 7        | 1/2     | 2             | SQ      | Ti7-S-.3750-SQ    | 700130 | \$ 71.21   |
| 3/8     | 3/8                    | 7        | 1/2     | 2             | 0.015   | Ti7-S-.3750-R.015 | 700140 | \$ 71.21   |
| 3/8     | 3/8                    | 7        | 1/2     | 2             | 0.030   | Ti7-S-.3750-R.030 | 700150 | \$ 71.21   |
| 3/8     | 3/8                    | 7        | 1/2     | 2             | 0.060   | Ti7-S-.3750-R.060 | 700160 | \$ 71.21   |
| 3/8     | 3/8                    | 7        | 1       | 2-1/2         | SQ      | Ti7-R-.3750-SQ    | 700170 | \$ 94.94   |
| 3/8     | 3/8                    | 7        | 1       | 2-1/2         | 0.015   | Ti7-R-.3750-R.015 | 700180 | \$ 94.94   |
| 3/8     | 3/8                    | 7        | 1       | 2-1/2         | 0.030   | Ti7-R-.3750-R.030 | 700190 | \$ 94.94   |
| 3/8     | 3/8                    | 7        | 1       | 2-1/2         | 0.060   | Ti7-R-.3750-R.060 | 700200 | \$ 94.94   |
| 3/8     | 3/8                    | 7        | 1-1/4   | 3             | SQ      | Ti7-M-.3750-SQ    | 700210 | \$ 109.39  |
| 3/8     | 3/8                    | 7        | 1-1/4   | 3             | 0.015   | Ti7-M-.3750-R.015 | 700220 | \$ 109.39  |
| 3/8     | 3/8                    | 7        | 1-1/4   | 3             | 0.030   | Ti7-M-.3750-R.030 | 700230 | \$ 109.39  |
| 3/8     | 3/8                    | 7        | 1-1/4   | 3             | 0.06    | Ti7-M-.3750-R.060 | 700240 | \$ 109.39  |
| 1/2     | 1/2                    | 7        | 5/8     | 2-1/2         | SQ      | Ti7-S-.5000-SQ    | 700250 | \$ 106.34  |
| 1/2     | 1/2                    | 7        | 5/8     | 2-1/2         | 0.015   | Ti7-S-.5000-R.015 | 700260 | \$ 106.34  |
| 1/2     | 1/2                    | 7        | 5/8     | 2-1/2         | 0.030   | Ti7-S-.5000-R.030 | 700270 | \$ 106.34  |
| 1/2     | 1/2                    | 7        | 5/8     | 2-1/2         | 0.06    | Ti7-S-.5000-R.060 | 700280 | \$ 106.34  |
| 1/2     | 1/2                    | 7        | 1       | 3             | SQ      | Ti7-T-.5000-SQ    | 700290 | \$ 142.18  |
| 1/2     | 1/2                    | 7        | 1       | 3             | 0.015   | Ti7-T-.5000-R.015 | 700300 | \$ 142.18  |
| 1/2     | 1/2                    | 7        | 1       | 3             | 0.030   | Ti7-T-.5000-R.030 | 700310 | \$ 142.18  |
| 1/2     | 1/2                    | 7        | 1       | 3             | 0.06    | Ti7-T-.5000-R.060 | 700320 | \$ 142.18  |
| 1/2     | 1/2                    | 7        | 1-1/4   | 3             | SQ      | Ti7-R-.5000-SQ    | 700330 | \$ 145.02  |
| 1/2     | 1/2                    | 7        | 1-1/4   | 3             | 0.015   | Ti7-R-.5000-R.015 | 700340 | \$ 145.02  |
| 1/2     | 1/2                    | 7        | 1-1/4   | 3             | 0.030   | Ti7-R-.5000-R.030 | 700350 | \$ 145.02  |
| 1/2     | 1/2                    | 7        | 1-1/4   | 3             | 0.06    | Ti7-R-.5000-R.060 | 700360 | \$ 145.02  |
| 1/2     | 1/2                    | 7        | 2-1/8   | 4             | SQ      | Ti7-L-.5000-SQ    | 700370 | \$ 164.03  |
| 1/2     | 1/2                    | 7        | 2-1/8   | 4             | 0.015   | Ti7-L-.5000-R.015 | 700380 | \$ 164.03  |
| 1/2     | 1/2                    | 7        | 2-1/8   | 4             | 0.030   | Ti7-L-.5000-R.030 | 700390 | \$ 164.03  |

# Titanium & High Temp Alloys



| Carbide | 7 Flute Center Cutting | Variable | AlTiSiN | +0.000 / -.002 | HRC <54 | Series: Ti7       |        |            |
|---------|------------------------|----------|---------|----------------|---------|-------------------|--------|------------|
| CUT DIA | SHANK DIA              | FLUTES   | LOC     | OAL            | CORNER  | PART NAME         | EDP    | PRICE LIST |
| 1/2     | 1/2                    | 7        | 2-1/8   | 4              | 0.060   | Ti7-L-.5000-R.060 | 700400 | \$ 164.03  |
| 5/8     | 5/8                    | 7        | 3/4     | 3              | SQ      | Ti7-S-.6250-SQ    | 700410 | \$ 172.37  |
| 5/8     | 5/8                    | 7        | 3/4     | 3              | 0.015   | Ti7-S-.6250-R.015 | 700420 | \$ 172.37  |
| 5/8     | 5/8                    | 7        | 3/4     | 3              | 0.030   | Ti7-S-.6250-R.030 | 700430 | \$ 172.37  |
| 5/8     | 5/8                    | 7        | 3/4     | 3              | 0.06    | Ti7-S-.6250-R.060 | 700440 | \$ 172.37  |
| 5/8     | 5/8                    | 7        | 1-1/4   | 3-1/2          | SQ      | Ti7-T-.6250-SQ    | 700450 | \$ 213.73  |
| 5/8     | 5/8                    | 7        | 1-1/4   | 3-1/2          | 0.015   | Ti7-T-.6250-R.015 | 700460 | \$ 213.73  |
| 5/8     | 5/8                    | 7        | 1-1/4   | 3-1/2          | 0.030   | Ti7-T-.6250-R.030 | 700470 | \$ 213.73  |
| 5/8     | 5/8                    | 7        | 1-1/4   | 3-1/2          | 0.06    | Ti7-T-.6250-R.060 | 700480 | \$ 213.73  |
| 5/8     | 5/8                    | 7        | 1-5/8   | 3-1/2          | SQ      | Ti7-R-.6250-SQ    | 700490 | \$ 218.00  |
| 5/8     | 5/8                    | 7        | 1-5/8   | 3-1/2          | 0.015   | Ti7-R-.6250-R.015 | 700500 | \$ 218.00  |
| 5/8     | 5/8                    | 7        | 1-5/8   | 3-1/2          | 0.030   | Ti7-R-.6250-R.030 | 700510 | \$ 218.00  |
| 5/8     | 5/8                    | 7        | 1-5/8   | 3-1/2          | 0.060   | Ti7-R-.6250-R.060 | 700520 | \$ 218.00  |
| 5/8     | 5/8                    | 7        | 2-1/8   | 4              | SQ      | Ti7-M-.6250-SQ    | 700530 | \$ 245.58  |
| 5/8     | 5/8                    | 7        | 2-1/8   | 4              | 0.015   | Ti7-M-.6250-R.015 | 700540 | \$ 245.58  |
| 5/8     | 5/8                    | 7        | 2-1/8   | 4              | 0.030   | Ti7-M-.6250-R.030 | 700550 | \$ 245.58  |
| 5/8     | 5/8                    | 7        | 2-1/8   | 4              | 0.060   | Ti7-M-.6250-R.060 | 700560 | \$ 245.58  |
| 3/4     | 3/4                    | 7        | 1       | 3              | SQ      | Ti7-S-.7500-SQ    | 700570 | \$ 259.99  |
| 3/4     | 3/4                    | 7        | 1       | 3              | 0.015   | Ti7-S-.7500-R.015 | 700580 | \$ 259.99  |
| 3/4     | 3/4                    | 7        | 1       | 3              | 0.030   | Ti7-S-.7500-R.030 | 700590 | \$ 259.99  |
| 3/4     | 3/4                    | 7        | 1       | 3              | 0.060   | Ti7-S-.7500-R.060 | 700600 | \$ 259.99  |
| 3/4     | 3/4                    | 7        | 1       | 3              | 0.09    | Ti7-S-.7500-R.090 | 700610 | \$ 259.99  |
| 3/4     | 3/4                    | 7        | 1       | 3              | 0.120   | Ti7-S-.7500-R.120 | 700620 | \$ 259.99  |
| 3/4     | 3/4                    | 7        | 1-5/8   | 4              | SQ      | Ti7-R-.7500-SQ    | 700630 | \$ 296.34  |
| 3/4     | 3/4                    | 7        | 1-5/8   | 4              | 0.015   | Ti7-R-.7500-R.015 | 700640 | \$ 296.34  |
| 3/4     | 3/4                    | 7        | 1-5/8   | 4              | 0.030   | Ti7-R-.7500-R.030 | 700650 | \$ 296.34  |
| 3/4     | 3/4                    | 7        | 1-5/8   | 4              | 0.060   | Ti7-R-.7500-R.060 | 700660 | \$ 296.34  |
| 3/4     | 3/4                    | 7        | 1-5/8   | 4              | 0.09    | Ti7-R-.7500-R.090 | 700670 | \$ 296.34  |
| 3/4     | 3/4                    | 7        | 1-5/8   | 4              | 0.120   | Ti7-R-.7500-R.120 | 700680 | \$ 296.34  |
| 3/4     | 3/4                    | 7        | 2-1/4   | 5              | SQ      | Ti7-M-.7500-SQ    | 700690 | \$ 340.99  |
| 3/4     | 3/4                    | 7        | 2-1/4   | 5              | 0.015   | Ti7-M-.7500-R.015 | 700700 | \$ 340.99  |
| 3/4     | 3/4                    | 7        | 2-1/4   | 5              | 0.030   | Ti7-M-.7500-R.030 | 700710 | \$ 340.99  |
| 3/4     | 3/4                    | 7        | 2-1/4   | 5              | 0.060   | Ti7-M-.7500-R.060 | 700720 | \$ 340.99  |
| 3/4     | 3/4                    | 7        | 2-1/4   | 5              | 0.090   | Ti7-M-.7500-R.090 | 700730 | \$ 340.99  |
| 3/4     | 3/4                    | 7        | 2-1/4   | 5              | 0.120   | Ti7-M-.7500-R.120 | 700740 | \$ 340.99  |
| 3/4     | 3/4                    | 7        | 3-1/4   | 6              | SQ      | Ti7-X-.750-SQ     | 700750 | \$ 393.43  |
| 3/4     | 3/4                    | 7        | 3-1/4   | 6              | 0.015   | Ti7-X-.750-R.015  | 700760 | \$ 393.43  |
| 3/4     | 3/4                    | 7        | 3-1/4   | 6              | 0.03    | Ti7-X-.750-R.030  | 700770 | \$ 393.43  |
| 3/4     | 3/4                    | 7        | 3-1/4   | 6              | 0.060   | Ti7-X-.750-R.060  | 700780 | \$ 393.43  |
| 3/4     | 3/4                    | 7        | 3-1/4   | 6              | 0.090   | Ti7-X-.750-R.090  | 700790 | \$ 393.43  |

# Titanium & High Temp Alloys



|         |                        |          |         |               |         |                  |        |            |
|---------|------------------------|----------|---------|---------------|---------|------------------|--------|------------|
| Carbide | 7 Flute Center Cutting | Variable | AlTiSiN | +.000 / -.002 | HRC <54 | Series: Ti7      |        |            |
| CUT DIA | SHANK DIA              | FLUTES   | LOC     | OAL           | CORNER  | PART NAME        | EDP    | PRICE LIST |
| 3/4     | 3/4                    | 7        | 3-1/4   | 6             | 0.120   | Ti7-X-.750-R.120 | 700800 | \$ 393.43  |

| Material Guide |                               |                              | Condition                                | SFM | FL     | CHIP PER TOOTH |        |        |        |        |        |        |        |
|----------------|-------------------------------|------------------------------|------------------------------------------|-----|--------|----------------|--------|--------|--------|--------|--------|--------|--------|
|                |                               |                              |                                          |     |        | 1/8"           | 3/16"  | 1/4"   | 3/8"   | 1/2"   | 5/8"   | 3/4"   | 1"     |
| ISO-M          | Precipitation                 | 13-8, 15-5, 17-4PH           | High Speed Profiling @ Full Length Axial | 450 | 7      | 0.0013         | 0.0018 | 0.0024 | 0.0037 | 0.0049 | 0.0062 | 0.0074 | 0.0099 |
|                |                               |                              | Profiling @ Full Length Axial            | 325 | 7      | 0.0013         | 0.0017 | 0.0024 | 0.0036 | 0.0047 | 0.0060 | 0.0071 | 0.0096 |
|                | Austenitic                    | 302, 303, 304L, 316L         | High Speed Profiling @ Full Length Axial | 475 | 7      | 0.0015         | 0.0020 | 0.0029 | 0.0044 | 0.0060 | 0.0074 | 0.0089 | 0.0119 |
|                |                               |                              | Profiling @ Full Length Axial            | 325 | 7      | 0.0015         | 0.0021 | 0.0028 | 0.0043 | 0.0057 | 0.0071 | 0.0085 | 0.0114 |
|                | Martensitic                   | 403, 410, 416                | High Speed Profiling @ Full Length Axial | 500 | 7      | 0.0014         | 0.0020 | 0.0026 | 0.0040 | 0.0053 | 0.0066 | 0.0080 | 0.0106 |
|                |                               |                              | Profiling @ Full Length Axial            | 375 | 7      | 0.0015         | 0.0023 | 0.0030 | 0.0045 | 0.0061 | 0.0076 | 0.0090 | 0.0122 |
| ISO-P          | High Strength Steels          | 4140, 4340, 52100            | High Speed Profiling @ Full Length Axial | 500 | 7      | 0.0014         | 0.0020 | 0.0026 | 0.0040 | 0.0053 | 0.0066 | 0.0080 | 0.0106 |
|                |                               |                              | Profiling @ Full Length Axial            | 375 | 7      | 0.0015         | 0.0024 | 0.0030 | 0.0045 | 0.0061 | 0.0076 | 0.0090 | 0.0122 |
|                | High Alloy Steels Mold & Die  | A-2, P20, 01, 02, D2, H-13   | High Speed Profiling @ Full Length Axial | 475 | 7      | 0.0012         | 0.0017 | 0.0023 | 0.0034 | 0.0044 | 0.0056 | 0.0067 | 0.0090 |
|                |                               |                              | Profiling @ Full Length Axial            | 350 | 7      | 0.0014         | 0.0019 | 0.0025 | 0.0039 | 0.0051 | 0.0064 | 0.0077 | 0.0103 |
|                | Medium Alloy Steels           | 200,250, 300                 | High Speed Profiling @ Full Length Axial | 425 | 7      | 0.0014         | 0.0020 | 0.0026 | 0.0040 | 0.0053 | 0.0066 | 0.0080 | 0.0106 |
|                |                               |                              | Profiling @ Full Length Axial            | 375 | 7      | 0.0015         | 0.0024 | 0.0030 | 0.0045 | 0.0061 | 0.0076 | 0.0090 | 0.0122 |
|                | Low Alloy Steels-Maraging     | 10XX, 11XX, 13XX             | High Speed Profiling @ Full Length Axial | 525 | 7      | 0.0015         | 0.0024 | 0.0029 | 0.0043 | 0.0058 | 0.0072 | 0.0087 | 0.0117 |
|                |                               |                              | Profiling @ Full Length Axial            | 400 | 7      | 0.0017         | 0.0025 | 0.0034 | 0.0060 | 0.0066 | 0.0083 | 0.0100 | 0.0133 |
| ISO-K          | Ductile Iron                  | ASTM A536, ASTM 897          | High Speed Profiling @ Full Length Axial | 475 | 7      | 0.0011         | 0.0015 | 0.0021 | 0.0032 | 0.0042 | 0.0053 | 0.0062 | 0.0083 |
|                | Profiling @ Full Length Axial |                              | 350                                      | 7   | 0.0013 | 0.0016         | 0.0024 | 0.0036 | 0.0047 | 0.0060 | 0.0071 | 0.0096 |        |
|                | Cast Iron                     | SAE J431, ASTM A48           | High Speed Profiling @ Full Length Axial | 500 | 7      | 0.0013         | 0.0019 | 0.0024 | 0.0037 | 0.0050 | 0.0062 | 0.0075 | 0.0100 |
|                | Grey Cast Iron                |                              | Profiling @ Full Length Axial            | 375 | 7      | 0.0015         | 0.0023 | 0.0028 | 0.0043 | 0.0057 | 0.0071 | 0.0085 | 0.0114 |
| ISO-S          | Titanium Alloys               | 6AL-4V, ASTM 1, 2, 3, 6AL-2S | High Speed Profiling @ Full Length Axial | 425 | 7      | 0.0012         | 0.0017 | 0.0023 | 0.0034 | 0.0045 | 0.0057 | 0.0068 | 0.0090 |
|                |                               |                              | Profiling @ Full Length Axial            | 300 | 7      | 0.0012         | 0.0017 | 0.0022 | 0.0034 | 0.0043 | 0.0055 | 0.0065 | 0.0087 |

For 5553, decrease SFM and IPM by 25%

Ti7 Steptover for Dynamic Milling shouldn't surpass 10% of Dia and Should be 7% or less

# Inconel and Nickel Based Alloys



| Carbide | 4 Flute<br>Center<br>Cutting | Variable Helix | TiCN  | +.000 / -.002 | HRC <54 | Series: Ni4       |        |            |
|---------|------------------------------|----------------|-------|---------------|---------|-------------------|--------|------------|
| CUT DIA | SHANK DIA                    | FLUTES         | LOC   | OAL           | CORNER  | PART NAME         | EDP    | PRICE LIST |
| 1/8     | 1/8                          | 4              | 1/4   | 1-1/2         | 0.015   | Ni4-S-.1250-R.015 | 430000 | \$ 21.08   |
| 1/8     | 1/8                          | 4              | 1/4   | 1-1/2         | 0.030   | Ni4-S-.1250-R.030 | 430010 | \$ 26.14   |
| 1/8     | 1/8                          | 4              | 1/4   | 1-1/2         | Ball    | Ni4-S-.1250-BN    | 430020 | \$ 27.89   |
| 1/8     | 1/8                          | 4              | 1/2   | 2             | 0.015   | Ni4-R-.1250-R.015 | 430030 | \$ 21.69   |
| 1/8     | 1/8                          | 4              | 1/2   | 2             | 0.03    | Ni4-R-.1250-R.030 | 430040 | \$ 28.59   |
| 1/8     | 1/8                          | 4              | 1/2   | 2             | Ball    | Ni4-R-.1250-BN    | 430050 | \$ 28.65   |
| 3/16    | 3/16                         | 4              | 5/16  | 2             | 0.015   | Ni4-S-.1875-R.015 | 430060 | \$ 25.22   |
| 3/16    | 3/16                         | 4              | 5/16  | 2             | 0.030   | Ni4-S-.1875-R.030 | 430070 | \$ 29.36   |
| 3/16    | 3/16                         | 4              | 5/16  | 2             | Ball    | Ni4-S-.1875-BN    | 430080 | \$ 33.06   |
| 3/16    | 3/16                         | 4              | 9/16  | 2-1/2         | 0.015   | Ni4-R-.1875-R.015 | 430090 | \$ 27.20   |
| 3/16    | 3/16                         | 4              | 9/16  | 2-1/2         | 0.030   | Ni4-R-.1875-R.030 | 430100 | \$ 31.96   |
| 3/16    | 3/16                         | 4              | 9/16  | 2-1/2         | Ball    | Ni4-R-.1875-BN    | 430110 | \$ 35.57   |
| 1/4     | 1/4                          | 4              | 3/8   | 2             | 0.015   | Ni4-S-.2500-R.015 | 430120 | \$ 35.03   |
| 1/4     | 1/4                          | 4              | 3/8   | 2             | 0.03    | Ni4-S-.2500-R.030 | 430130 | \$ 35.03   |
| 1/4     | 1/4                          | 4              | 3/8   | 2             | 0.060   | Ni4-S-.2500-R.060 | 430140 | \$ 37.01   |
| 1/4     | 1/4                          | 4              | 3/8   | 2             | Ball    | Ni4-S-.2500-BN    | 430150 | \$ 40.16   |
| 1/4     | 1/4                          | 4              | 1/2   | 2-1/2         | 0.015   | Ni4-T-.2500-R.015 | 430160 | \$ 38.40   |
| 1/4     | 1/4                          | 4              | 1/2   | 2-1/2         | 0.03    | Ni4-T-.2500-R.030 | 430170 | \$ 38.40   |
| 1/4     | 1/4                          | 4              | 1/2   | 2-1/2         | 0.060   | Ni4-T-.2500-R.060 | 430180 | \$ 46.30   |
| 1/4     | 1/4                          | 4              | 1/2   | 2-1/2         | Ball    | Ni4-T-.2500-BN    | 430190 | \$ 46.22   |
| 1/4     | 1/4                          | 4              | 3/4   | 2-1/2         | 0.015   | Ni4-R-.2500-R.015 | 430200 | \$ 50.07   |
| 1/4     | 1/4                          | 4              | 3/4   | 2-1/2         | 0.030   | Ni4-R-.2500-R.030 | 430210 | \$ 41.56   |
| 1/4     | 1/4                          | 4              | 3/4   | 2-1/2         | 0.060   | Ni4-R-.2500-R.060 | 430220 | \$ 49.21   |
| 1/4     | 1/4                          | 4              | 3/4   | 2-1/2         | Ball    | Ni4-R-.2500-BN    | 430230 | \$ 48.90   |
| 1/4     | 1/4                          | 4              | 1     | 3             | 0.015   | Ni4-M-.2500-R.015 | 430240 | \$ 56.33   |
| 1/4     | 1/4                          | 4              | 1     | 3             | 0.030   | Ni4-M-.2500-R.030 | 430250 | \$ 56.33   |
| 1/4     | 1/4                          | 4              | 1     | 3             | 0.060   | Ni4-M-.2500-R.060 | 430260 | \$ 57.90   |
| 1/4     | 1/4                          | 4              | 1     | 3             | Ball    | Ni4-M-.2500-BN    | 430270 | \$ 60.23   |
| 5/16    | 5/16                         | 4              | 7/16  | 2             | 0.015   | Ni4-S-.3125-R.015 | 430280 | \$ 49.07   |
| 5/16    | 5/16                         | 4              | 7/16  | 2             | 0.03    | Ni4-S-.3125-R.030 | 430290 | \$ 49.07   |
| 5/16    | 5/16                         | 4              | 7/16  | 2             | 0.060   | Ni4-S-.3125-R.060 | 430300 | \$ 50.75   |
| 5/16    | 5/16                         | 4              | 7/16  | 2             | Ball    | Ni4-S-.3125-BN    | 430310 | \$ 51.98   |
| 5/16    | 5/16                         | 4              | 13/16 | 2-1/2         | 0.015   | Ni4-R-.3125-R.015 | 430320 | \$ 52.43   |
| 5/16    | 5/16                         | 4              | 13/16 | 2-1/2         | 0.03    | Ni4-R-.3125-R.030 | 430330 | \$ 52.43   |
| 5/16    | 5/16                         | 4              | 13/16 | 2-1/2         | 0.060   | Ni4-R-.3125-R.060 | 430340 | \$ 58.55   |
| 5/16    | 5/16                         | 4              | 13/16 | 2-1/2         | Ball    | Ni4-R-.3125-BN    | 430350 | \$ 61.95   |
| 3/8     | 3/8                          | 4              | 1/2   | 2             | 0.015   | Ni4-S-.3750-R.015 | 430360 | \$ 57.79   |
| 3/8     | 3/8                          | 4              | 1/2   | 2             | 0.030   | Ni4-S-.3750-R.030 | 430370 | \$ 57.79   |
| 3/8     | 3/8                          | 4              | 1/2   | 2             | 0.060   | Ni4-S-.3750-R.060 | 430380 | \$ 59.69   |
| 3/8     | 3/8                          | 4              | 1/2   | 2             | Ball    | Ni4-S-.3750-BN    | 430390 | \$ 66.38   |

# Inconel and Nickel Based Alloys



| Carbide | 4 Flute<br>Center<br>Cutting | Variable Helix | TiCN  | +.000 / -.002 | HRC <54 | Series: Ni4       |        |            |
|---------|------------------------------|----------------|-------|---------------|---------|-------------------|--------|------------|
| CUT DIA | SHANK DIA                    | FLUTES         | LOC   | OAL           | CORNER  | PART NAME         | EDP    | PRICE LIST |
| 3/8     | 3/8                          | 4              | 1     | 2-1/2         | 0.015   | Ni4-R-.3750-R.015 | 430400 | \$ 61.02   |
| 3/8     | 3/8                          | 4              | 1     | 2-1/2         | 0.030   | Ni4-R-.3750-R.030 | 430410 | \$ 61.02   |
| 3/8     | 3/8                          | 4              | 1     | 2-1/2         | 0.060   | Ni4-R-.3750-R.060 | 430420 | \$ 62.93   |
| 3/8     | 3/8                          | 4              | 1     | 2-1/2         | Ball    | Ni4-R-.3750-BN    | 430430 | \$ 72.05   |
| 3/8     | 3/8                          | 4              | 1-1/4 | 3             | 0.015   | Ni4-M-.3750-R.015 | 430440 | \$ 72.49   |
| 3/8     | 3/8                          | 4              | 1-1/4 | 3             | 0.030   | Ni4-M-.3750-R.030 | 430450 | \$ 72.49   |
| 3/8     | 3/8                          | 4              | 1-1/4 | 3             | 0.060   | Ni4-M-.3750-R.060 | 430460 | \$ 74.11   |
| 3/8     | 3/8                          | 4              | 1-1/4 | 3             | Ball    | Ni4-M-.3750-BN    | 430470 | \$ 80.36   |
| 1/2     | 1/2                          | 4              | 5/8   | 2-1/2         | 0.015   | Ni4-S-.5000-R.015 | 430480 | \$ 91.38   |
| 1/2     | 1/2                          | 4              | 5/8   | 2-1/2         | 0.03    | Ni4-S-.5000-R.030 | 430490 | \$ 91.38   |
| 1/2     | 1/2                          | 4              | 5/8   | 2-1/2         | 0.060   | Ni4-S-.5000-R.060 | 430500 | \$ 93.64   |
| 1/2     | 1/2                          | 4              | 5/8   | 2-1/2         | Ball    | Ni4-S-.5000-BN    | 430510 | \$ 100.77  |
| 1/2     | 1/2                          | 4              | 1     | 3             | 0.015   | Ni4-T-.5000-R.015 | 430520 | \$ 95.75   |
| 1/2     | 1/2                          | 4              | 1     | 3             | 0.03    | Ni4-T-.5000-R.030 | 430530 | \$ 95.75   |
| 1/2     | 1/2                          | 4              | 1     | 3             | 0.060   | Ni4-T-.5000-R.060 | 430540 | \$ 97.84   |
| 1/2     | 1/2                          | 4              | 1     | 3             | Ball    | Ni4-T-.5000-BN    | 430550 | \$ 104.99  |
| 1/2     | 1/2                          | 4              | 1-1/4 | 3             | 0.015   | Ni4-R-.5000-R.015 | 430560 | \$ 99.65   |
| 1/2     | 1/2                          | 4              | 1-1/4 | 3             | 0.030   | Ni4-R-.5000-R.030 | 430570 | \$ 99.65   |
| 1/2     | 1/2                          | 4              | 1-1/4 | 3             | 0.060   | Ni4-R-.5000-R.060 | 430580 | \$ 97.84   |
| 1/2     | 1/2                          | 4              | 1-1/4 | 3             | Ball    | Ni4-R-.5000-BN    | 430590 | \$ 108.29  |
| 1/2     | 1/2                          | 4              | 1-5/8 | 4             | 0.015   | Ni4-M-.5000-R.015 | 430600 | \$ 120.05  |
| 1/2     | 1/2                          | 4              | 1-5/8 | 4             | 0.03    | Ni4-M-.5000-R.030 | 430610 | \$ 120.05  |
| 1/2     | 1/2                          | 4              | 1-5/8 | 4             | 0.060   | Ni4-M-.5000-R.060 | 430620 | \$ 121.98  |
| 1/2     | 1/2                          | 4              | 1-5/8 | 4             | Ball    | Ni4-M-.5000-BN    | 430630 | \$ 132.00  |

| Material Guide |                              |                                                                                                      | Condition                                             | SFM | CHIP PER TOOTH |        |        |        |        |        |        |        |        |        |
|----------------|------------------------------|------------------------------------------------------------------------------------------------------|-------------------------------------------------------|-----|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                |                              |                                                                                                      |                                                       |     | FL             | 1/8"   | 3/16"  | 1/4"   | 5/16"  | 3/8"   | 1/2"   | 5/8"   | 3/4"   | 1"     |
| ISO-M          | Precipitation                | 13-8, 15-5, 17-4PH                                                                                   | Slotting @ $\leq 1 \times D$                          | 225 | 4              | 0.0006 | 0.0009 | 0.0012 | 0.0014 | 0.0018 | 0.0024 | 0.0030 | 0.0036 | 0.0048 |
|                |                              |                                                                                                      | Pro filing @ $2 \times D$ Axial / $\leq .15 D$ Radial | 225 | 4              | 0.0008 | 0.0012 | 0.0016 | 0.0019 | 0.0024 | 0.0032 | 0.0040 | 0.0048 | 0.0064 |
|                | Austenitic                   | 302, 303, 304L, 316L                                                                                 | Slotting @ $\leq 1 \times D$                          | 225 | 4              | 0.0007 | 0.0010 | 0.0013 | 0.0016 | 0.0020 | 0.0026 | 0.0033 | 0.0040 | 0.0053 |
|                |                              |                                                                                                      | Pro filing @ $2 \times D$ Axial / $\leq .15 D$ Radial | 250 | 4              | 0.0009 | 0.0013 | 0.0018 | 0.0021 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0070 |
|                | Martensitic                  | 403, 410, 416                                                                                        | Slotting @ $\leq 1 \times D$                          | 300 | 4              | 0.0007 | 0.0011 | 0.0014 | 0.0017 | 0.0021 | 0.0028 | 0.0035 | 0.0042 | 0.0056 |
|                |                              |                                                                                                      | Pro filing @ $2 \times D$ Axial / $\leq .15 D$ Radial | 325 | 4              | 0.0009 | 0.0014 | 0.0018 | 0.0022 | 0.0027 | 0.0036 | 0.0045 | 0.0054 | 0.0072 |
| ISO-S          | Cobalt Base                  | Stellite, Haynes 25, 188, X-40, L-605                                                                | Slotting @ $.5 \times D$                              | 95  | 4              | 0.0006 | 0.0009 | 0.0012 | 0.0014 | 0.0018 | 0.0024 | 0.0030 | 0.0036 | 0.0048 |
|                |                              |                                                                                                      | Pro filing @ $2 \times D$ Axial / $\leq .15 D$ Radial | 150 | 4              | 0.0008 | 0.0012 | 0.0016 | 0.0019 | 0.0024 | 0.0032 | 0.0040 | 0.0048 | 0.0064 |
|                | Nickel Base                  | Inconel 600, 625, 718, Nickel 200, 270, Invar, Monel 400, 405, K-Monel, PermaNickel 300, Inconel 600 | Slotting @ $.5 \times D$                              | 95  | 4              | 0.0007 | 0.0010 | 0.0013 | 0.0016 | 0.0020 | 0.0026 | 0.0033 | 0.0040 | 0.0053 |
|                |                              |                                                                                                      | Pro filing @ $2 \times D$ Axial / $\leq .15 D$ Radial | 150 | 4              | 0.0009 | 0.0013 | 0.0018 | 0.0021 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0070 |
|                | Iron Base                    | Incoloy 800-802, Multimet N-155, Timken 16-26-6                                                      | Slotting @ $.5 \times D$                              | 95  | 4              | 0.0006 | 0.0009 | 0.0012 | 0.0014 | 0.0018 | 0.0024 | 0.0030 | 0.0036 | 0.0048 |
|                |                              |                                                                                                      | Pro filing @ $2 \times D$ Axial / $\leq .15 D$ Radial | 130 | 4              | 0.0008 | 0.0012 | 0.0016 | 0.0019 | 0.0024 | 0.0032 | 0.0040 | 0.0048 | 0.0064 |
| ISO-P          | High Strength Steels         | 4140, 4340, 52100                                                                                    | Slotting @ $\leq 1 \times D$                          | 325 | 4              | 0.0004 | 0.0006 | 0.0008 | 0.0010 | 0.0012 | 0.0016 | 0.0020 | 0.0024 | 0.0032 |
|                |                              |                                                                                                      | Pro filing @ $2 \times D$ Axial / $\leq .15 D$ Radial | 400 | 4              | 0.0006 | 0.0009 | 0.0012 | 0.0014 | 0.0018 | 0.0024 | 0.0030 | 0.0036 | 0.0048 |
|                | High Alloy Steels Mold & Die | A-2, P20, 01, 02, D2, H-13                                                                           | Slotting @ $\leq 1 \times D$                          | 275 | 4              | 0.0006 | 0.0009 | 0.0012 | 0.0014 | 0.0018 | 0.0024 | 0.0030 | 0.0036 | 0.0048 |
|                |                              |                                                                                                      | Pro filing @ $2 \times D$ Axial / $\leq .15 D$ Radial | 350 | 4              | 0.0008 | 0.0012 | 0.0016 | 0.0019 | 0.0024 | 0.0032 | 0.0040 | 0.0048 | 0.0064 |

# Inconel and Nickel Based Alloys



| Carbide | 5 Flute<br>Center<br>Cutting | Variable Helix | TiCN  | +.000 / -.002 | HRC <54 | Series: Ni5       |        |            |
|---------|------------------------------|----------------|-------|---------------|---------|-------------------|--------|------------|
| CUT DIA | SHANK DIA                    | FLUTES         | LOC   | OAL           | CORNER  | PART NAME         | EDP    | PRICE LIST |
| 1/4     | 1/4                          | 5              | 3/8   | 2             | 0.015   | Ni5-S-.2500-R.015 | 540000 | \$ 36.87   |
| 1/4     | 1/4                          | 5              | 3/8   | 2             | 0.030   | Ni5-S-.2500-R.030 | 540010 | \$ 36.87   |
| 1/4     | 1/4                          | 5              | 3/8   | 2             | 0.060   | Ni5-S-.2500-R.060 | 540020 | \$ 38.97   |
| 1/4     | 1/4                          | 5              | 3/8   | 2             | Ball    | Ni5-S-.2500-BN    | 540030 | \$ 42.29   |
| 1/4     | 1/4                          | 5              | 1/2   | 2-1/2         | 0.015   | Ni5-T-.2500-R.015 | 540040 | \$ 40.42   |
| 1/4     | 1/4                          | 5              | 1/2   | 2-1/2         | 0.030   | Ni5-T-.2500-R.030 | 540050 | \$ 40.42   |
| 1/4     | 1/4                          | 5              | 1/2   | 2-1/2         | 0.060   | Ni5-T-.2500-R.060 | 540060 | \$ 48.75   |
| 1/4     | 1/4                          | 5              | 1/2   | 2-1/2         | Ball    | Ni5-T-.2500-BN    | 540070 | \$ 48.67   |
| 1/4     | 1/4                          | 5              | 3/4   | 2-1/2         | 0.015   | Ni5-R-.2500-R.015 | 540080 | \$ 52.69   |
| 1/4     | 1/4                          | 5              | 3/4   | 2-1/2         | 0.030   | Ni5-R-.2500-R.030 | 540090 | \$ 43.73   |
| 1/4     | 1/4                          | 5              | 3/4   | 2-1/2         | 0.060   | Ni5-R-.2500-R.060 | 540100 | \$ 51.81   |
| 1/4     | 1/4                          | 5              | 3/4   | 2-1/2         | Ball    | Ni5-R-.2500-BN    | 540110 | \$ 51.48   |
| 1/4     | 1/4                          | 5              | 1     | 3             | 0.015   | Ni5-M-.2500-R.015 | 540120 | \$ 57.77   |
| 1/4     | 1/4                          | 5              | 1     | 3             | 0.03    | Ni5-M-.2500-R.030 | 540130 | \$ 57.77   |
| 1/4     | 1/4                          | 5              | 1     | 3             | 0.060   | Ni5-M-.2500-R.060 | 540140 | \$ 59.40   |
| 1/4     | 1/4                          | 5              | 1     | 3             | Ball    | Ni5-M-.2500-BN    | 540150 | \$ 61.78   |
| 5/16    | 5/16                         | 5              | 7/16  | 2             | 0.015   | Ni5-S-.3125-R.015 | 540160 | \$ 51.64   |
| 5/16    | 5/16                         | 5              | 7/16  | 2             | 0.03    | Ni5-S-.3125-R.030 | 540170 | \$ 51.64   |
| 5/16    | 5/16                         | 5              | 7/16  | 2             | 0.060   | Ni5-S-.3125-R.060 | 540180 | \$ 53.40   |
| 5/16    | 5/16                         | 5              | 7/16  | 2             | Ball    | Ni5-S-.3125-BN    | 540190 | \$ 54.71   |
| 5/16    | 5/16                         | 5              | 13/16 | 2-1/2         | 0.015   | Ni5-R-.3125-R.015 | 540200 | \$ 55.21   |
| 5/16    | 5/16                         | 5              | 13/16 | 2-1/2         | 0.030   | Ni5-R-.3125-R.030 | 540210 | \$ 55.21   |
| 5/16    | 5/16                         | 5              | 13/16 | 2-1/2         | 0.060   | Ni5-R-.3125-R.060 | 540220 | \$ 61.64   |
| 5/16    | 5/16                         | 5              | 13/16 | 2-1/2         | Ball    | Ni5-R-.3125-BN    | 540230 | \$ 65.20   |
| 3/8     | 3/8                          | 5              | 1/2   | 2             | 0.015   | Ni5-S-.3750-R.015 | 540240 | \$ 63.27   |
| 3/8     | 3/8                          | 5              | 1/2   | 2             | 0.030   | Ni5-S-.3750-R.030 | 540250 | \$ 63.27   |
| 3/8     | 3/8                          | 5              | 1/2   | 2             | 0.060   | Ni5-S-.3750-R.060 | 540260 | \$ 65.35   |
| 3/8     | 3/8                          | 5              | 1/2   | 2             | Ball    | Ni5-S-.3750-BN    | 540270 | \$ 69.88   |
| 3/8     | 3/8                          | 5              | 1     | 2-1/2         | 0.015   | Ni5-R-.3750-R.015 | 540280 | \$ 66.82   |
| 3/8     | 3/8                          | 5              | 1     | 2-1/2         | 0.03    | Ni5-R-.3750-R.030 | 540290 | \$ 66.82   |
| 3/8     | 3/8                          | 5              | 1     | 2-1/2         | 0.060   | Ni5-R-.3750-R.060 | 540300 | \$ 68.90   |
| 3/8     | 3/8                          | 5              | 1     | 2-1/2         | Ball    | Ni5-R-.3750-BN    | 540310 | \$ 75.85   |
| 3/8     | 3/8                          | 5              | 1-1/4 | 3             | 0.015   | Ni5-M-.3750-R.015 | 540320 | \$ 79.37   |
| 3/8     | 3/8                          | 5              | 1-1/4 | 3             | 0.03    | Ni5-M-.3750-R.030 | 540330 | \$ 79.37   |
| 3/8     | 3/8                          | 5              | 1-1/4 | 3             | 0.060   | Ni5-M-.3750-R.060 | 540340 | \$ 81.13   |
| 3/8     | 3/8                          | 5              | 1-1/4 | 3             | Ball    | Ni5-M-.3750-BN    | 540350 | \$ 84.56   |
| 1/2     | 1/2                          | 5              | 5/8   | 2-1/2         | 0.015   | Ni5-S-.5000-R.015 | 540360 | \$ 100.80  |
| 1/2     | 1/2                          | 5              | 5/8   | 2-1/2         | 0.030   | Ni5-S-.5000-R.030 | 540370 | \$ 100.80  |
| 1/2     | 1/2                          | 5              | 5/8   | 2-1/2         | 0.060   | Ni5-S-.5000-R.060 | 540380 | \$ 103.28  |
| 1/2     | 1/2                          | 5              | 5/8   | 2-1/2         | Ball    | Ni5-S-.5000-BN    | 540390 | \$ 106.82  |

# Inconel and Nickel Based Alloys



| Carbide | 5 Flute Center Cutting | Variable Helix | TiCN  | +.000 / -.002 | HRC <54 | Series: Ni5       |        |            |
|---------|------------------------|----------------|-------|---------------|---------|-------------------|--------|------------|
| CUT DIA | SHANK DIA              | FLUTES         | LOC   | OAL           | CORNER  | PART NAME         | EDP    | PRICE LIST |
| 1/2     | 1/2                    | 5              | 1     | 3             | 0.015   | Ni5-T-.5000-R.015 | 540400 | \$ 105.59  |
| 1/2     | 1/2                    | 5              | 1     | 3             | 0.030   | Ni5-T-.5000-R.030 | 540410 | \$ 105.59  |
| 1/2     | 1/2                    | 5              | 1     | 3             | 0.060   | Ni5-T-.5000-R.060 | 540420 | \$ 107.88  |
| 1/2     | 1/2                    | 5              | 1     | 3             | Ball    | Ni5-T-.5000-BN    | 540430 | \$ 111.25  |
| 1/2     | 1/2                    | 5              | 1-1/4 | 3             | 0.015   | Ni5-R-.5000-R.015 | 540440 | \$ 109.86  |
| 1/2     | 1/2                    | 5              | 1-1/4 | 3             | 0.030   | Ni5-R-.5000-R.030 | 540450 | \$ 109.86  |
| 1/2     | 1/2                    | 5              | 1-1/4 | 3             | 0.060   | Ni5-R-.5000-R.060 | 540460 | \$ 107.88  |
| 1/2     | 1/2                    | 5              | 1-1/4 | 3             | Ball    | Ni5-R-.5000-BN    | 540470 | \$ 114.73  |
| 1/2     | 1/2                    | 5              | 1-5/8 | 4             | 0.015   | Ni5-M-.5000-R.015 | 540480 | \$ 132.18  |
| 1/2     | 1/2                    | 5              | 1-5/8 | 4             | 0.03    | Ni5-M-.5000-R.030 | 540490 | \$ 132.18  |
| 1/2     | 1/2                    | 5              | 1-5/8 | 4             | 0.060   | Ni5-M-.5000-R.060 | 540500 | \$ 134.33  |
| 1/2     | 1/2                    | 5              | 1-5/8 | 4             | Ball    | Ni5-M-.5000-BN    | 540510 | \$ 139.66  |
| 5/8     | 5/8                    | 5              | 3/4   | 3             | 0.015   | Ni5-S-.6250-R.015 | 540520 | \$ 184.98  |
| 5/8     | 5/8                    | 5              | 3/4   | 3             | 0.03    | Ni5-S-.6250-R.030 | 540530 | \$ 184.98  |
| 5/8     | 5/8                    | 5              | 3/4   | 3             | 0.060   | Ni5-S-.6250-R.060 | 540540 | \$ 186.54  |
| 5/8     | 5/8                    | 5              | 3/4   | 3             | Ball    | Ni5-S-.6250-BN    | 540550 | \$ 201.84  |
| 5/8     | 5/8                    | 5              | 1-1/4 | 3-1/2         | 0.015   | Ni5-T-.6250-R.015 | 540560 | \$ 191.30  |
| 5/8     | 5/8                    | 5              | 1-1/4 | 3-1/2         | 0.030   | Ni5-T-.6250-R.030 | 540570 | \$ 191.30  |
| 5/8     | 5/8                    | 5              | 1-1/4 | 3-1/2         | 0.060   | Ni5-T-.6250-R.060 | 540580 | \$ 193.03  |
| 5/8     | 5/8                    | 5              | 1-1/4 | 3-1/2         | Ball    | Ni5-T-.6250-BN    | 540590 | \$ 208.32  |
| 5/8     | 5/8                    | 5              | 1-5/8 | 3-1/2         | 0.015   | Ni5-R-.6250-R.015 | 540600 | \$ 213.91  |
| 5/8     | 5/8                    | 5              | 1-5/8 | 3-1/2         | 0.03    | Ni5-R-.6250-R.030 | 540610 | \$ 213.91  |
| 5/8     | 5/8                    | 5              | 1-5/8 | 3-1/2         | 0.060   | Ni5-R-.6250-R.060 | 540620 | \$ 215.50  |
| 5/8     | 5/8                    | 5              | 1-5/8 | 3-1/2         | Ball    | Ni5-R-.6250-BN    | 540630 | \$ 231.04  |
| 3/4     | 3/4                    | 5              | 1     | 3             | 0.015   | Ni5-S-.7500-R.015 | 540640 | \$ 270.77  |
| 3/4     | 3/4                    | 5              | 1     | 3             | 0.030   | Ni5-S-.7500-R.030 | 540650 | \$ 270.77  |
| 3/4     | 3/4                    | 5              | 1     | 3             | 0.060   | Ni5-S-.7500-R.060 | 540660 | \$ 272.98  |
| 3/4     | 3/4                    | 5              | 1     | 3             | Ball    | Ni5-S-.7500-BN    | 540670 | \$ 301.81  |
| 3/4     | 3/4                    | 5              | 1-5/8 | 4             | 0.015   | Ni5-R-.7500-R.015 | 540680 | \$ 295.59  |
| 3/4     | 3/4                    | 5              | 1-5/8 | 4             | 0.030   | Ni5-R-.7500-R.030 | 540690 | \$ 295.59  |
| 3/4     | 3/4                    | 5              | 1-5/8 | 4             | 0.060   | Ni5-R-.7500-R.060 | 540700 | \$ 297.36  |
| 3/4     | 3/4                    | 5              | 1-5/8 | 4             | Ball    | Ni5-R-.7500-BN    | 540710 | \$ 326.26  |
| 3/4     | 3/4                    | 5              | 2-1/4 | 5             | 0.015   | Ni5-M-.7500-R.015 | 540720 | \$ 326.22  |
| 3/4     | 3/4                    | 5              | 2-1/4 | 5             | 0.030   | Ni5-M-.7500-R.030 | 540730 | \$ 326.22  |
| 3/4     | 3/4                    | 5              | 2-1/4 | 5             | 0.060   | Ni5-M-.7500-R.060 | 540740 | \$ 328.12  |
| 3/4     | 3/4                    | 5              | 2-1/4 | 5             | Ball    | Ni5-M-.7500-BN    | 540750 | \$ 357.09  |

| Material Guide |                              |                                                                                                      | Condition                                |  | SFM | FL | CHIP PER TOOTH |        |        |        |        |        |        |        |        |
|----------------|------------------------------|------------------------------------------------------------------------------------------------------|------------------------------------------|--|-----|----|----------------|--------|--------|--------|--------|--------|--------|--------|--------|
|                |                              |                                                                                                      |                                          |  |     |    | 1/8"           | 3/16"  | 1/4"   | 5/16"  | 3/8"   | 1/2"   | 5/8"   | 3/4"   | 1"     |
| ISO-M          | Precipitation                | 13-8, 15-5, 17-4PH                                                                                   | Slotting @ ≤ 1 x D                       |  | 225 | 5  | 0.0006         | 0.0009 | 0.0012 | 0.0014 | 0.0018 | 0.0024 | 0.0030 | 0.0036 | 0.0048 |
|                |                              |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .15 D Radial |  | 225 | 5  | 0.0008         | 0.0012 | 0.0016 | 0.0019 | 0.0024 | 0.0032 | 0.0040 | 0.0048 | 0.0064 |
|                | Austenitic                   | 302, 303, 304L, 316L                                                                                 | Slotting @ ≤ 1 x D                       |  | 225 | 5  | 0.0007         | 0.0010 | 0.0013 | 0.0016 | 0.0020 | 0.0026 | 0.0033 | 0.0040 | 0.0053 |
|                |                              |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .15 D Radial |  | 250 | 5  | 0.0009         | 0.0013 | 0.0018 | 0.0021 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0070 |
|                | Martensitic                  | 403, 410, 416                                                                                        | Slotting @ ≤ 1 x D                       |  | 300 | 5  | 0.0007         | 0.0011 | 0.0014 | 0.0017 | 0.0021 | 0.0028 | 0.0035 | 0.0042 | 0.0056 |
|                |                              |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .15 D Radial |  | 325 | 5  | 0.0009         | 0.0014 | 0.0018 | 0.0022 | 0.0027 | 0.0036 | 0.0045 | 0.0054 | 0.0072 |
| ISO-S          | Cobalt Base                  | Stellite, Haynes 25, 188, X-40, L-605                                                                | Slotting @ .5 x D                        |  | 95  | 5  | 0.0006         | 0.0009 | 0.0012 | 0.0014 | 0.0018 | 0.0024 | 0.0030 | 0.0036 | 0.0048 |
|                |                              |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .15 D Radial |  | 150 | 5  | 0.0008         | 0.0012 | 0.0016 | 0.0019 | 0.0024 | 0.0032 | 0.0040 | 0.0048 | 0.0064 |
|                | Nickel Base                  | Inconel 600, 625, 718, Nickel 200, 270, Invar, Monel 400, 405, K-Monel, PermaNickel 300, Inconel 600 | Slotting @ .5 x D                        |  | 95  | 5  | 0.0007         | 0.0010 | 0.0013 | 0.0016 | 0.0020 | 0.0026 | 0.0033 | 0.0040 | 0.0053 |
|                |                              |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .15 D Radial |  | 150 | 5  | 0.0009         | 0.0013 | 0.0018 | 0.0021 | 0.0026 | 0.0035 | 0.0044 | 0.0053 | 0.0070 |
|                | Iron Base                    | Incoloy 800-802, Multimet N-155,Timken 16-26-6                                                       | Slotting @ .5 x D                        |  | 95  | 5  | 0.0006         | 0.0009 | 0.0012 | 0.0014 | 0.0018 | 0.0024 | 0.0030 | 0.0036 | 0.0048 |
|                |                              |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .15 D Radial |  | 130 | 5  | 0.0008         | 0.0012 | 0.0016 | 0.0019 | 0.0024 | 0.0032 | 0.0040 | 0.0048 | 0.0064 |
| ISO-P          | High Strength Steels         | 4140, 4340, 52100                                                                                    | Slotting @ ≤ 1 x D                       |  | 325 | 5  | 0.0004         | 0.0006 | 0.0008 | 0.0010 | 0.0012 | 0.0016 | 0.0020 | 0.0024 | 0.0032 |
|                |                              |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .15 D Radial |  | 400 | 5  | 0.0006         | 0.0009 | 0.0012 | 0.0014 | 0.0018 | 0.0024 | 0.0030 | 0.0036 | 0.0048 |
|                | High Alloy Steels Mold & Die | A-2, P20, 01, 02, D2, H-13                                                                           | Slotting @ ≤ 1 x D                       |  | 275 | 5  | 0.0006         | 0.0009 | 0.0012 | 0.0014 | 0.0018 | 0.0024 | 0.0030 | 0.0036 | 0.0048 |
|                |                              |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .15 D Radial |  | 350 | 5  | 0.0008         | 0.0012 | 0.0016 | 0.0019 | 0.0024 | 0.0032 | 0.0040 | 0.0048 | 0.0064 |

# Stainless and Nickel Based Alloys



| Carbide | 5 Flute<br>Center<br>Cutting | 45° Helix | TiCN  | +.000 / -.002 | HRC <54 | Series: Cr5       |        |            |
|---------|------------------------------|-----------|-------|---------------|---------|-------------------|--------|------------|
| CUT DIA | SHANK DIA                    | FLUTES    | LOC   | OAL           | CORNER  | PART NAME         | EDP    | PRICE LIST |
| 1/8     | 1/8                          | 5         | 1/4   | 1-1/2         | SQ      | Cr5-S-.1250       | 530000 | \$ 19.40   |
| 1/8     | 1/8                          | 5         | 1/4   | 1-1/2         | 0.010   | Cr5-S-.1250-R.010 | 530010 | \$ 21.16   |
| 1/8     | 1/8                          | 5         | 1/2   | 1-1/2         | SQ      | Cr5-.1250         | 530020 | \$ 19.66   |
| 1/8     | 1/8                          | 5         | 1/2   | 1-1/2         | 0.010   | Cr5-.1250-R.010   | 530030 | \$ 21.38   |
| 3/16    | 3/16                         | 5         | 5/16  | 2             | SQ      | Cr5-S-.1875       | 530040 | \$ 27.24   |
| 3/16    | 3/16                         | 5         | 9/16  | 2             | SQ      | Cr5-.1875         | 530050 | \$ 27.62   |
| 3/16    | 3/16                         | 5         | 9/16  | 2             | 0.010   | Cr5-.1875-R.010   | 530060 | \$ 29.61   |
| 1/4     | 1/4                          | 5         | 3/8   | 2             | SQ      | Cr5-S-.2500       | 530070 | \$ 30.84   |
| 1/4     | 1/4                          | 5         | 3/8   | 2             | 0.015   | Cr5-S-.2500-R.015 | 530080 | \$ 34.60   |
| 1/4     | 1/4                          | 5         | 3/4   | 2-1/2         | SQ      | Cr5-.2500         | 530090 | \$ 34.55   |
| 1/4     | 1/4                          | 5         | 3/4   | 2-1/2         | 0.015   | Cr5-.2500-R.015   | 530100 | \$ 36.82   |
| 5/16    | 5/16                         | 5         | 7/16  | 2             | SQ      | Cr5-S-.3125       | 530110 | \$ 38.79   |
| 5/16    | 5/16                         | 5         | 13/16 | 2-1/2         | SQ      | Cr5-.3125         | 530120 | \$ 42.92   |
| 5/16    | 5/16                         | 5         | 13/16 | 2-1/2         | 0.015   | Cr5-.3125-R.015   | 530130 | \$ 46.52   |
| 3/8     | 3/8                          | 5         | 1/2   | 2             | SQ      | Cr5-S-.3750       | 530140 | \$ 46.36   |
| 3/8     | 3/8                          | 5         | 1/2   | 2             | 0.015   | Cr5-S-.3750-R.015 | 530150 | \$ 50.27   |
| 3/8     | 3/8                          | 5         | 1/2   | 2             | 0.030   | Cr5-S-.3750-R.030 | 530160 | \$ 50.27   |
| 3/8     | 3/8                          | 5         | 1     | 2-1/2         | SQ      | Cr5-.3750         | 530170 | \$ 53.94   |
| 3/8     | 3/8                          | 5         | 1     | 2-1/2         | 0.015   | Cr5-.3750-R.015   | 530180 | \$ 57.48   |
| 3/8     | 3/8                          | 5         | 1     | 2-1/2         | 0.030   | Cr5-.3750-R.030   | 530190 | \$ 57.48   |
| 7/16    | 7/16                         | 5         | 9/16  | 2-1/2         | SQ      | Cr5-S-.4375       | 530200 | \$ 62.30   |
| 7/16    | 7/16                         | 5         | 1     | 2-3/4         | SQ      | Cr5-.4375         | 530210 | \$ 74.49   |
| 1/2     | 1/2                          | 5         | 5/8   | 2-1/2         | SQ      | Cr5-S-.5000       | 530220 | \$ 74.22   |
| 1/2     | 1/2                          | 5         | 5/8   | 2-1/2         | 0.030   | Cr5-S-.5000-R.030 | 530230 | \$ 80.80   |
| 1/2     | 1/2                          | 5         | 5/8   | 2-1/2         | 0.06    | Cr5-S-.5000-R.060 | 530240 | \$ 80.80   |
| 1/2     | 1/2                          | 5         | 1-1/4 | 3             | SQ      | Cr5-.5000         | 530250 | \$ 89.66   |
| 1/2     | 1/2                          | 5         | 1-1/4 | 3             | 0.030   | Cr5-.5000-R.030   | 530260 | \$ 99.07   |
| 1/2     | 1/2                          | 5         | 1-1/4 | 3             | 0.060   | Cr5-.5000-R.060   | 530270 | \$ 95.39   |
| 5/8     | 5/8                          | 5         | 3/4   | 3             | SQ      | Cr5-S-.6250       | 530280 | \$ 151.82  |
| 5/8     | 5/8                          | 5         | 3/4   | 3             | 0.03    | Cr5-S-.6250-R.030 | 530290 | \$ 159.04  |
| 5/8     | 5/8                          | 5         | 3/4   | 3             | 0.060   | Cr5-S-.6250-R.060 | 530300 | \$ 159.04  |
| 5/8     | 5/8                          | 5         | 1-5/8 | 3-1/2         | SQ      | Cr5-.6250         | 530310 | \$ 159.94  |
| 5/8     | 5/8                          | 5         | 1-5/8 | 3-1/2         | 0.03    | Cr5-.6250-R.030   | 530320 | \$ 166.66  |
| 5/8     | 5/8                          | 5         | 1-5/8 | 3-1/2         | 0.06    | Cr5-.6250-R.060   | 530330 | \$ 166.66  |
| 3/4     | 3/4                          | 5         | 1     | 3             | SQ      | Cr5-S-.7500       | 530340 | \$ 206.38  |
| 3/4     | 3/4                          | 5         | 1     | 3             | 0.030   | Cr5-S-.7500-R.030 | 530350 | \$ 217.03  |
| 3/4     | 3/4                          | 5         | 1     | 3             | 0.06    | Cr5-S-.7500-R.060 | 530360 | \$ 217.03  |
| 3/4     | 3/4                          | 5         | 1-5/8 | 4             | SQ      | Cr5-.7500         | 530370 | \$ 235.38  |
| 3/4     | 3/4                          | 5         | 1-5/8 | 4             | 0.030   | Cr5-.7500-R.030   | 530380 | \$ 244.41  |
| 3/4     | 3/4                          | 5         | 1-5/8 | 4             | 0.060   | Cr5-.7500-R.060   | 530390 | \$ 244.41  |

# Stainless and Nickel Based Alloys



| Carbide | 5 Flute<br>Center<br>Cutting | 45° Helix | TiCN | + .000 / - .002 | HRC <54 | Series: Cr5   |        |            |
|---------|------------------------------|-----------|------|-----------------|---------|---------------|--------|------------|
| CUT DIA | SHANK DIA                    | FLUTES    | LOC  | OAL             | CORNER  | PART NAME     | EDP    | PRICE LIST |
| 3.0mm   | 3.0mm                        | 5         | 12mm | 38mm            | SQ      | Cr5-3mm       | 530400 | \$ 18.04   |
| 4.0mm   | 4.0mm                        | 5         | 14mm | 51mm            | SQ      | Cr5-4mm       | 530410 | \$ 24.59   |
| 5mm     | 5mm                          | 5         | 20mm | 51mm            | SQ      | Cr5-5mm       | 530420 | \$ 27.62   |
| 6mm     | 6mm                          | 5         | 20mm | 63mm            | SQ      | Cr5-6mm       | 530430 | \$ 33.22   |
| 6mm     | 6mm                          | 5         | 20mm | 63mm            | 0.50mm  | Cr5-6mm-R0.5  | 530440 | \$ 36.57   |
| 8mm     | 8mm                          | 5         | 20mm | 63mm            | SQ      | Cr5-8mm       | 530450 | \$ 40.25   |
| 8mm     | 8mm                          | 5         | 20mm | 63mm            | 0.50mm  | Cr5-8mm-R0.5  | 530460 | \$ 42.97   |
| 10mm    | 10mm                         | 5         | 25mm | 70mm            | SQ      | Cr5-10mm      | 530470 | \$ 64.03   |
| 10mm    | 10mm                         | 5         | 25mm | 70mm            | 0.50mm  | Cr5-10mm-R0.5 | 530480 | \$ 69.61   |
| 12mm    | 12mm                         | 5         | 25mm | 76mm            | SQ      | Cr5-12mm      | 530490 | \$ 79.63   |
| 12mm    | 12mm                         | 5         | 25mm | 76mm            | 1.0mm   | Cr5-12mm-R1.0 | 530500 | \$ 88.12   |
| 16mm    | 16mm                         | 5         | 32mm | 89mm            | SQ      | Cr5-16mm      | 530510 | \$ 130.90  |
| 16mm    | 16mm                         | 5         | 32mm | 89mm            | 1.0mm   | Cr5-16mm-R1.0 | 530520 | \$ 169.12  |
| 20mm    | 20mm                         | 5         | 38mm | 100mm           | SQ      | Cr5-20mm      | 530530 | \$ 283.19  |
| 20mm    | 20mm                         | 5         | 38mm | 100mm           | 1.0mm   | Cr5-20mm-R1.0 | 530540 | \$ 283.19  |

| Material Guide                           |                                          |                                                                                                      | Condition                                | SFM | FL     | CHIP PER TOOTH |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |  |
|------------------------------------------|------------------------------------------|------------------------------------------------------------------------------------------------------|------------------------------------------|-----|--------|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--|
|                                          |                                          |                                                                                                      |                                          |     |        | 1/16           | 3/32"  | 1/8"   | 5/32"  | 3/16"  | 7/32"  | 1/4"   | 5/16"  | 3/8"   | 13/32" | 7/16"  | 1/2"   | 9/16"  | 5/8"   | 3/4"   | 1"     |  |
| ISO-M                                    | Precipitation                            | 13-8, 15-5, 17-4PH                                                                                   | Slotting @ ≤ .5 x D                      | 250 | 5      | 0.0003         | 0.0005 | 0.0006 | 0.0006 | 0.0008 | 0.0010 | 0.0011 | 0.0015 | 0.0017 | 0.0018 | 0.0021 | 0.0023 | 0.0026 | 0.0029 | 0.0035 | 0.0047 |  |
|                                          |                                          |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .15 D Radial | 325 | 5      | 0.0004         | 0.0006 | 0.0008 | 0.0009 | 0.0012 | 0.0014 | 0.0016 | 0.0021 | 0.0023 | 0.0025 | 0.0028 | 0.0031 | 0.0036 | 0.0040 | 0.0048 | 0.0065 |  |
|                                          | Austenitic                               | 302, 303, 304L, 316L                                                                                 | Slotting @ ≤ .5 x D                      | 275 | 5      | 0.0004         | 0.0005 | 0.0007 | 0.0007 | 0.0010 | 0.0012 | 0.0013 | 0.0018 | 0.0020 | 0.0022 | 0.0025 | 0.0028 | 0.0031 | 0.0035 | 0.0042 | 0.0056 |  |
|                                          |                                          |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .15 D Radial | 350 | 5      | 0.0005         | 0.0007 | 0.0010 | 0.0010 | 0.0013 | 0.0016 | 0.0018 | 0.0026 | 0.0029 | 0.0031 | 0.0035 | 0.0038 | 0.0043 | 0.0048 | 0.0058 | 0.0077 |  |
|                                          | Martensitic                              | 403, 410, 416                                                                                        | Slotting @ ≤ .5 x D                      | 300 | 5      | 0.0004         | 0.0005 | 0.0007 | 0.0008 | 0.0011 | 0.0013 | 0.0014 | 0.0019 | 0.0022 | 0.0024 | 0.0027 | 0.0030 | 0.0033 | 0.0037 | 0.0044 | 0.0060 |  |
| Pro iling @ 2 x D Axial / ≤ .15 D Radial |                                          |                                                                                                      | 375                                      | 5   | 0.0005 | 0.0008         | 0.0011 | 0.0012 | 0.0016 | 0.0017 | 0.0019 | 0.0027 | 0.0030 | 0.0033 | 0.0037 | 0.0041 | 0.0046 | 0.0052 | 0.0061 | 0.0083 |        |  |
| ISO-S                                    | Cobalt Base                              | Stellite, Haynes 25, 188, X-40, L-605                                                                | Slotting @ ≤ .5 x D                      | 110 | 5      | 0.0002         | 0.0003 | 0.0004 | 0.0003 | 0.0004 | 0.0004 | 0.0005 | 0.0008 | 0.0008 | 0.0010 | 0.0011 | 0.0012 | 0.0014 | 0.0016 | 0.0018 | 0.0025 |  |
|                                          |                                          |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .15 D Radial | 150 | 5      | 0.0002         | 0.0003 | 0.0004 | 0.0003 | 0.0004 | 0.0006 | 0.0007 | 0.0006 | 0.0007 | 0.0012 | 0.0013 | 0.0014 | 0.0016 | 0.0018 | 0.0023 | 0.0030 |  |
|                                          | Nickel Base                              | Inconel 600, 625, 718, Nickel 200, 270, Invar, Monel 400, 405, K-Monel, PermaNickel 300, Inconel 600 | Slotting @ ≤ .5 x D                      | 75  | 5      | 0.0002         | 0.0004 | 0.0005 | 0.0002 | 0.0002 | 0.0006 | 0.0007 | 0.0010 | 0.0011 | 0.0016 | 0.0017 | 0.0019 | 0.0016 | 0.0018 | 0.0030 | 0.0030 |  |
|                                          |                                          |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .15 D Radial | 115 | 5      | 0.0002         | 0.0004 | 0.0005 | 0.0003 | 0.0004 | 0.0006 | 0.0007 | 0.0011 | 0.0012 | 0.0017 | 0.0018 | 0.0020 | 0.0018 | 0.0020 | 0.0025 | 0.0025 |  |
|                                          | Iron Base                                | Incoloy 800-802, Multimet N-155, Timken 16-26-6                                                      | Slotting @ ≤ .5 x D                      | 95  | 5      | 0.0002         | 0.0004 | 0.0005 | 0.0004 | 0.0005 | 0.0009 | 0.0010 | 0.0014 | 0.0016 | 0.0017 | 0.0019 | 0.0022 | 0.0024 | 0.0026 | 0.0032 | 0.0043 |  |
|                                          |                                          |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .15 D Radial | 130 | 5      | 0.0002         | 0.0004 | 0.0005 | 0.0004 | 0.0005 | 0.0010 | 0.0011 | 0.0016 | 0.0018 | 0.0019 | 0.0022 | 0.0024 | 0.0027 | 0.0030 | 0.0036 | 0.0049 |  |
| ISO-P                                    | High Strength Steels                     | 4140, 4340, 52100                                                                                    | Slotting @ ≤ .5 x D                      | 300 | 5      | 0.0004         | 0.0005 | 0.0007 | 0.0007 | 0.0010 | 0.0013 | 0.0014 | 0.0019 | 0.0022 | 0.0024 | 0.0027 | 0.0030 | 0.0033 | 0.0037 | 0.0044 | 0.0060 |  |
|                                          |                                          |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .15 D Radial | 375 | 5      | 0.0005         | 0.0008 | 0.0011 | 0.0011 | 0.0014 | 0.0017 | 0.0019 | 0.0027 | 0.0030 | 0.0033 | 0.0037 | 0.0041 | 0.0046 | 0.0052 | 0.0061 | 0.0083 |  |
|                                          | High Alloy Steels Mold & Die             | A-2, P20, 01, 02, D2, H-13                                                                           | Slotting @ ≤ .5 x D                      | 275 | 5      | 0.0003         | 0.0005 | 0.0006 | 0.0006 | 0.0008 | 0.0011 | 0.0012 | 0.0016 | 0.0018 | 0.0020 | 0.0023 | 0.0025 | 0.0028 | 0.0031 | 0.0037 | 0.0050 |  |
|                                          |                                          |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .15 D Radial | 350 | 5      | 0.0004         | 0.0006 | 0.0008 | 0.0009 | 0.0012 | 0.0015 | 0.0017 | 0.0023 | 0.0025 | 0.0027 | 0.0030 | 0.0034 | 0.0039 | 0.0043 | 0.0052 | 0.0070 |  |
|                                          | Medium Alloy Steels                      | 200, 250, 300                                                                                        | Slotting @ ≤ .5 x D                      | 325 | 5      | 0.0003         | 0.0005 | 0.0006 | 0.0004 | 0.0005 | 0.0012 | 0.0013 | 0.0021 | 0.0023 | 0.0023 | 0.0026 | 0.0029 | 0.0037 | 0.0041 | 0.0047 | 0.0059 |  |
|                                          |                                          |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .15 D Radial | 400 | 5      | 0.0003         | 0.0005 | 0.0006 | 0.0004 | 0.0005 | 0.0015 | 0.0017 | 0.0025 | 0.0028 | 0.0028 | 0.0031 | 0.0035 | 0.0042 | 0.0047 | 0.0059 | 0.0071 |  |
|                                          | Low Alloy Steels-Maraging                | 10XX, 11XX, 13XX                                                                                     | Slotting @ ≤ .5 x D                      | 325 | 5      | 0.0004         | 0.0006 | 0.0008 | 0.0008 | 0.0011 | 0.0014 | 0.0016 | 0.0022 | 0.0024 | 0.0026 | 0.0029 | 0.0032 | 0.0037 | 0.0041 | 0.0049 | 0.0066 |  |
| Pro iling @ 2 x D Axial / ≤ .15 D Radial |                                          |                                                                                                      | 400                                      | 5   | 0.0006 | 0.0009         | 0.0012 | 0.0013 | 0.0017 | 0.0019 | 0.0022 | 0.0030 | 0.0034 | 0.0036 | 0.0040 | 0.0044 | 0.0051 | 0.0056 | 0.0067 | 0.0090 |        |  |
| ISO-K                                    | Ductile Iron                             | ASTM A536, ASTM 897                                                                                  | Slotting @ ≤ .5 x D                      | 400 | 5      | 0.0003         | 0.0005 | 0.0006 | 0.0006 | 0.0008 | 0.0010 | 0.0011 | 0.0015 | 0.0017 | 0.0018 | 0.0021 | 0.0023 | 0.0026 | 0.0029 | 0.0035 | 0.0047 |  |
|                                          | Pro iling @ 2 x D Axial / ≤ .15 D Radial |                                                                                                      | 550                                      | 5   | 0.0004 | 0.0006         | 0.0008 | 0.0008 | 0.0011 | 0.0014 | 0.0016 | 0.0021 | 0.0023 | 0.0025 | 0.0028 | 0.0031 | 0.0036 | 0.0040 | 0.0048 | 0.0065 |        |  |
|                                          | Cast Iron                                | SAE J431, ASTM A48                                                                                   | Slotting @ ≤ .5 x D                      | 450 | 5      | 0.0004         | 0.0005 | 0.0007 | 0.0008 | 0.0011 | 0.0012 | 0.0013 | 0.0018 | 0.0020 | 0.0022 | 0.0025 | 0.0028 | 0.0031 | 0.0035 | 0.0042 | 0.0056 |  |
|                                          | Pro iling @ 2 x D Axial / ≤ .15 D Radial |                                                                                                      | 600                                      | 5   | 0.0005 | 0.0007         | 0.0010 | 0.0010 | 0.0013 | 0.0016 | 0.0018 | 0.0026 | 0.0029 | 0.0031 | 0.0035 | 0.0038 | 0.0043 | 0.0048 | 0.0058 | 0.0077 |        |  |
| ISO-S                                    | Titanium Alloys                          | 6AL-4V, ASTM 1, 2, 3, 6AL-2S                                                                         | Slotting @ ≤ .5 x D                      | 175 | 5      | 0.0003         | 0.0005 | 0.0006 | 0.0005 | 0.0007 | 0.0009 | 0.0010 | 0.0014 | 0.0016 | 0.0017 | 0.0018 | 0.0020 | 0.0024 | 0.0026 | 0.0032 | 0.0043 |  |
|                                          |                                          |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .15 D Radial | 275 | 5      | 0.0004         | 0.0005 | 0.0007 | 0.0008 | 0.0011 | 0.0013 | 0.0014 | 0.0019 | 0.0022 | 0.0023 | 0.0026 | 0.0029 | 0.0032 | 0.0036 | 0.0044 | 0.0059 |  |
| For 5553, decrease SFM and IPM by 25%    |                                          |                                                                                                      |                                          |     |        |                |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |  |

For 5553, decrease SFM and IPM by 25%

| Material Guide |                              |                                                                                                      | Condition                                | M/<br>MIN           | FL | CHIP PER TOOTH - METRIC |        |        |        |        |        |        |        |        |        |
|----------------|------------------------------|------------------------------------------------------------------------------------------------------|------------------------------------------|---------------------|----|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                |                              |                                                                                                      |                                          |                     |    | 3mm                     | 4mm    | 5mm    | 6mm    | 8mm    | 10mm   | 12mm   | 16mm   | 20mm   |        |
| ISO-M          | Precipitation                | 13-8, 15-5, 17-4PH                                                                                   | Slotting @ ≤ .5 x D                      | 75                  | 5  | 0.0137                  | 0.0152 | 0.0247 | 0.0275 | 0.0335 | 0.0427 | 0.0580 | 0.0732 | 0.0884 |        |
|                |                              |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .15 D Radial | 99                  | 5  | 0.0192                  | 0.0214 | 0.0356 | 0.0396 | 0.0487 | 0.0580 | 0.0792 | 0.1006 | 0.1219 |        |
|                | Austenitic                   | 302, 303, 304L, 316L                                                                                 | Slotting @ ≤ .5 x D                      | 84                  | 5  | 0.0164                  | 0.0182 | 0.0301 | 0.0335 | 0.0427 | 0.0518 | 0.0701 | 0.0884 | 0.1067 |        |
|                |                              |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .15 D Radial | 107                 | 5  | 0.0219                  | 0.0244 | 0.0411 | 0.0457 | 0.0580 | 0.0732 | 0.0976 | 0.1219 | 0.1463 |        |
| ISO-S          | Cobalt Base                  | Stellite, Haynes 25, 188, X-40, L-605                                                                | Slotting @ ≤ .5 x D                      | 91                  | 5  | 0.0164                  | 0.0182 | 0.0329 | 0.0366 | 0.0457 | 0.0548 | 0.0762 | 0.0944 | 0.1128 |        |
|                |                              |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .15 D Radial | 114                 | 5  | 0.0247                  | 0.0275 | 0.0438 | 0.0487 | 0.0610 | 0.0762 | 0.1037 | 0.1310 | 0.1554 |        |
|                | Nickel Base                  | Inconel 600, 625, 718, Nickel 200, 270, Invar, Monel 400, 405, K-Monel, PermaNickel 300, Inconel 600 | Slotting @ ≤ .5 x D                      | 34                  | 5  | 0.0082                  | 0.0091 | 0.0110 | 0.0122 | 0.0152 | 0.0214 | 0.0305 | 0.0396 | 0.0457 |        |
|                |                              |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .15 D Radial | 46                  | 5  | 0.0082                  | 0.0091 | 0.0164 | 0.0182 | 0.0182 | 0.0182 | 0.0366 | 0.0457 | 0.0580 |        |
| ISO-P          | Iron Base                    | Incoloy 800-802, Multimet N-155, Timken 16-26-6                                                      | Slotting @ ≤ .5 x D                      | 23                  | 5  | 0.0110                  | 0.0122 | 0.0164 | 0.0182 | 0.0214 | 0.0275 | 0.0487 | 0.0487 | 0.0762 |        |
|                |                              |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .15 D Radial | 35                  | 5  | 0.0110                  | 0.0122 | 0.0164 | 0.0182 | 0.0244 | 0.0305 | 0.0518 | 0.0518 | 0.0640 |        |
|                | High Strength Steels         | 4140, 4340, 52100                                                                                    | Slotting @ ≤ .5 x D                      | 29                  | 5  | 0.0110                  | 0.0122 | 0.0219 | 0.0244 | 0.0305 | 0.0396 | 0.0548 | 0.0671 | 0.0823 |        |
|                |                              |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .15 D Radial | 40                  | 5  | 0.0110                  | 0.0122 | 0.0247 | 0.0275 | 0.0366 | 0.0457 | 0.0610 | 0.0762 | 0.0914 |        |
|                | High Alloy Steels Mold & Die | A-2, P20, 01, 02, D2, H-13                                                                           | Slotting @ ≤ .5 x D                      | 91                  | 5  | 0.0164                  | 0.0182 | 0.0329 | 0.0366 | 0.0457 | 0.0548 | 0.0762 | 0.0944 | 0.1128 |        |
|                |                              |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .15 D Radial | 114                 | 5  | 0.0247                  | 0.0275 | 0.0438 | 0.0487 | 0.0610 | 0.0762 | 0.1037 | 0.1310 | 0.1554 |        |
|                | Medium Alloy Steels          | 200, 250, 300                                                                                        | Slotting @ ≤ .5 x D                      | 84                  | 5  | 0.0137                  | 0.0152 | 0.0274 | 0.0305 | 0.0366 | 0.0457 | 0.0640 | 0.0792 | 0.0944 |        |
|                |                              |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .15 D Radial | 107                 | 5  | 0.0192                  | 0.0214 | 0.0384 | 0.0427 | 0.0518 | 0.0640 | 0.0853 | 0.1097 | 0.1310 |        |
|                | Low Alloy Steels-Maraging    | 10XX, 11XX, 13XX                                                                                     | Slotting @ ≤ .5 x D                      | 99                  | 5  | 0.0137                  | 0.0152 | 0.0301 | 0.0335 | 0.0457 | 0.0580 | 0.0732 | 0.1037 | 0.1189 |        |
|                |                              |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .15 D Radial | 122                 | 5  | 0.0137                  | 0.0152 | 0.0384 | 0.0427 | 0.0548 | 0.0701 | 0.0884 | 0.1189 | 0.1494 |        |
| ISO-K          | Ductile Iron                 | ASTM A536, ASTM 897                                                                                  | Slotting @ ≤ .5 x D                      | 99                  | 5  | 0.0192                  | 0.0214 | 0.0356 | 0.0396 | 0.0487 | 0.0610 | 0.0823 | 0.1037 | 0.1249 |        |
|                |                              |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .15 D Radial | 122                 | 5  | 0.0274                  | 0.0305 | 0.0494 | 0.0548 | 0.0701 | 0.0853 | 0.1128 | 0.1433 | 0.1706 |        |
|                | Cast Iron                    | SAE J431, ASTM A48                                                                                   | Slotting @ ≤ .5 x D                      | 122                 | 5  | 0.0137                  | 0.0152 | 0.0247 | 0.0275 | 0.0366 | 0.0427 | 0.0580 | 0.0732 | 0.0884 |        |
|                |                              |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .15 D Radial | 168                 | 5  | 0.0192                  | 0.0214 | 0.0356 | 0.0396 | 0.0457 | 0.0580 | 0.0792 | 0.1006 | 0.1219 |        |
| ISO-S          | Titanium Alloys              | 6AL-4V, ASTM 1, 2, 3, 6AL-2S                                                                         | Slotting @ ≤ .5 x D                      | 140                 | 5  | 0.0164                  | 0.0182 | 0.0301 | 0.0335 | 0.0427 | 0.0518 | 0.0701 | 0.0884 | 0.1067 |        |
|                |                              |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .15 D Radial | 183                 | 5  | 0.0219                  | 0.0244 | 0.0411 | 0.0457 | 0.0580 | 0.0732 | 0.0976 | 0.1219 | 0.1463 |        |
|                |                              |                                                                                                      |                                          | Slotting @ ≤ .5 x D | 53 | 5                       | 0.0137 | 0.0152 | 0.0219 | 0.0244 | 0.0305 | 0.0396 | 0.0518 | 0.0671 | 0.0823 |
|                |                              |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .15 D Radial | 84                  | 5  | 0.0164                  | 0.0182 | 0.0329 | 0.0366 | 0.0457 | 0.0548 | 0.0732 | 0.0914 | 0.1128 |        |

For 5553, decrease SFM and IPM by 25%

# Die & Mold Steels



| Carbide | 6 Flute<br>Center<br>Cutting | 45° Helix | AlTiSiN | +.000 / -.002 | HRC >55-65 | Series: Cr6 |             |        |            |
|---------|------------------------------|-----------|---------|---------------|------------|-------------|-------------|--------|------------|
| CUT DIA | SHANK DIA                    | FLUTES    | LBS     | LOC           | OAL        | CORNER      | PART NAME   | EDP    | PRICE LIST |
| 1/8     | 1/8                          | 6         | 1/2     | 1/4           | 1-1/2      | 0.01        | Cr6-S-.1250 | 600000 | \$ 23.17   |
| 1/8     | 1/8                          | 6         |         | 1/2           | 1-1/2      | 0.010       | Cr6-.1250   | 600010 | \$ 24.15   |
| 3/16    | 3/16                         | 6         |         | 5/8           | 2          | 0.010       | Cr6-.1875   | 600020 | \$ 32.65   |
| 1/4     | 1/4                          | 6         | 3/4     | 3/8           | 2-1/2      | 0.015       | Cr6-S-.2500 | 600030 | \$ 45.38   |
| 1/4     | 1/4                          | 6         |         | 3/4           | 2-1/2      | 0.015       | Cr6-.2500   | 600040 | \$ 47.26   |
| 5/16    | 5/16                         | 6         |         | 13/16         | 2-1/2      | 0.020       | Cr6-.3125   | 600050 | \$ 59.12   |
| 3/8     | 3/8                          | 6         | 1       | 1/2           | 2-1/2      | 0.020       | Cr6-S.3750  | 600060 | \$ 64.73   |
| 3/8     | 3/8                          | 6         |         | 1             | 2-1/2      | 0.020       | Cr6-.3750   | 600070 | \$ 67.45   |
| 1/2     | 1/2                          | 6         | 1       | 5/8           | 3          | 0.025       | Cr6-S-.5000 | 600080 | \$ 106.18  |
| 1/2     | 1/2                          | 6         |         | 1             | 3          | 0.025       | Cr6-.5000   | 600090 | \$ 110.58  |
| 5/8     | 5/8                          | 6         |         | 1-1/4         | 3-1/2      | 0.030       | Cr6-.6250   | 600100 | \$ 203.80  |
| 3/4     | 3/4                          | 6         | 1-1/2   | 1             | 4          | 0.035       | Cr6-S.7500  | 600110 | \$ 299.07  |
| 3/4     | 3/4                          | 6         |         | 1-1/2         | 4          | 0.035       | Cr6-.7500   | 600120 | \$ 311.53  |
| 3mm     | 3mm                          | 6         |         | 12mm          | 38mm       | 0.25mm      | Cr6-3mm     | 600130 | \$ 26.52   |
| 4mm     | 4mm                          | 6         |         | 14mm          | 51mm       | 0.25mm      | Cr6-4mm     | 600140 | \$ 31.23   |
| 6mm     | 6mm                          | 6         |         | 20mm          | 63mm       | 0.40mm      | Cr6-6mm     | 600150 | \$ 45.06   |
| 8mm     | 8mm                          | 6         |         | 20mm          | 63mm       | 0.50 mm     | Cr6-8mm     | 600160 | \$ 54.66   |
| 10mm    | 10mm                         | 6         |         | 25mm          | 70mm       | 0.50mm      | Cr6-10mm    | 600170 | \$ 81.60   |
| 12mm    | 12mm                         | 6         |         | 25mm          | 76mm       | 0.60mm      | Cr6-12mm    | 600180 | \$ 100.89  |
| 16mm    | 16mm                         | 6         |         | 32mm          | 89mm       | 0.75mm      | Cr6-16mm    | 600190 | \$ 187.64  |
| 20mm    | 20mm                         | 6         |         | 38mm          | 100mm      | 0.90mm      | Cr6-20mm    | 600200 | \$ 349.04  |

| Material Guide |                                     | Condition                                | SFM                     |                       | CHIP PER TOOTH |        |        |        |        |        |        |        |
|----------------|-------------------------------------|------------------------------------------|-------------------------|-----------------------|----------------|--------|--------|--------|--------|--------|--------|--------|
|                |                                     |                                          | High Speed<br>Machining | Standard<br>Machining | 1/8"           | 1/4"   | 5/16"  | 3/8"   | 1/2"   | 5/8"   | 3/4"   | 1"     |
| ISO-H          | Hardened Steels<br>55-65 HRC        | Pro filing ≤ 1.5 x D doc and .02 x D woc | 180                     |                       | 0.0010         | 0.0020 | 0.0020 | 0.0030 | 0.0030 | 0.0040 | 0.0050 | 0.0060 |
|                |                                     | Pro filing ≤ 1.5 x D doc and .04 x D woc |                         | 80                    | 0.0010         | 0.0010 | 0.0020 | 0.0020 | 0.0020 | 0.0030 | 0.0030 | 0.0035 |
|                | Hardened Steels<br>65 HRC and above | Pro filing ≤ 1.5 x D doc and .02 x D woc | 130                     |                       | 0.0010         | 0.0020 | 0.0020 | 0.0030 | 0.0030 | 0.0030 | 0.0040 | 0.0045 |
|                |                                     | Pro filing ≤ 1.5 x D doc and .04 x D woc |                         | 60                    | 0.0010         | 0.0010 | 0.0020 | 0.0020 | 0.0020 | 0.0020 | 0.0030 | 0.0030 |

| Material Guide |                                     | Condition                                | M/MIN                   |                       | CHIP PER TOOTH - METRIC |        |        |        |        |        |        |  |
|----------------|-------------------------------------|------------------------------------------|-------------------------|-----------------------|-------------------------|--------|--------|--------|--------|--------|--------|--|
|                |                                     |                                          | High Speed<br>Machining | Standard<br>Machining | 3mm                     | 6mm    | 8mm    | 10mm   | 12mm   | 16mm   | 20mm   |  |
| ISO-H          | Hardened Steels<br>55-65 HRC        | Pro filing ≤ 1.5 x D doc and .02 x D woc | 60 M/MIN                |                       | 0.0254                  | 0.0508 | 0.0508 | 0.0762 | 0.0762 | 0.1016 | 0.1270 |  |
|                |                                     | Pro filing ≤ 1.5 x D doc and .04 x D woc |                         | 24 M/MIN              | 0.0254                  | 0.0254 | 0.0508 | 0.0508 | 0.0508 | 0.0762 | 0.0762 |  |
|                | Hardened Steels<br>65 HRC and above | Pro filing ≤ 1.5 x D doc and .02 x D woc | 40 M/MIN                |                       | 0.0254                  | 0.0508 | 0.0508 | 0.0762 | 0.0762 | 0.0762 | 0.1016 |  |
|                |                                     | Pro filing ≤ 1.5 x D doc and .04 x D woc |                         | 18 M/MIN              | 0.0254                  | 0.0254 | 0.0508 | 0.0508 | 0.0508 | 0.0508 | 0.0762 |  |

For light periphery pro filing ≤ .005 x D increase above pro filing chip load by 20-35%

# High Feed Mills



| Carbide | 4 Flute Center Cutting | 8° Helix | AlTiSiN | + .000 / -.002<br>3/16 and Greater | ±.0005 1/8<br>and Below | HRC <56 | Series: HF4 |        |            |
|---------|------------------------|----------|---------|------------------------------------|-------------------------|---------|-------------|--------|------------|
| CUT DIA | SHANK DIA              | FLUTES   | LBS     | LOC                                | OAL                     | CORNER  | PART NAME   | EDP    | PRICE LIST |
| 3/32    | 1/4                    | 4        | 0.500   | 0.090                              | 3                       | 0.023   | HF4-.0938   | 440000 | \$ 83.88   |
| 1/8     | 1/4                    | 4        | 0.650   | 0.095                              | 3                       | 0.031   | HF4-.1250   | 440010 | \$ 83.88   |
| 3/16    | 1/4                    | 4        | 0.750   | 0.125                              | 3                       | 0.047   | HF4-.1875   | 440020 | \$ 83.88   |
| 1/4     | 1/4                    | 4        | 1       | 0.150                              | 3                       | 0.062   | HF4-.2500   | 440030 | \$ 73.61   |
| 5/16    | 5/16                   | 4        | 1.187   | 0.155                              | 3                       | 0.078   | HF4-.3125   | 440040 | \$ 89.37   |
| 3/8     | 3/8                    | 4        | 1.250   | 0.175                              | 4                       | 0.094   | HF4-.3750   | 440050 | \$ 133.63  |
| 1/2     | 1/2                    | 4        | 1.500   | 0.200                              | 4                       | 0.125   | HF4-.5000   | 440060 | \$ 191.92  |
| 2.0mm   | 6.0mm                  | 4        | 12mm    | 2mm                                | 75mm                    | 0.5mm   | HF4-2mm     | 440070 | \$ 83.88   |
| 3.0mm   | 6.0mm                  | 4        | 16mm    | 2.8mm                              | 75mm                    | 0.75mm  | HF4-3mm     | 440080 | \$ 83.88   |
| 4.0mm   | 6.0mm                  | 4        | 20mm    | 3.5mm                              | 75mm                    | 1.0mm   | HF4-4mm     | 440090 | \$ 83.88   |
| 5.0mm   | 6.0mm                  | 4        | 20mm    | 3.5mm                              | 75mm                    | 1.25mm  | HF4-5mm     | 440100 | \$ 83.88   |
| 6.0mm   | 6.0mm                  | 4        | 25mm    | 3.8mm                              | 75mm                    | 1.5mm   | HF4-6mm     | 440110 | \$ 73.61   |
| 8.0mm   | 8mm                    | 4        | 30mm    | 4mm                                | 75mm                    | 2mm     | HF4-8mm     | 440120 | \$ 89.37   |
| 10mm    | 10mm                   | 4        | 33mm    | 4.3mm                              | 100mm                   | 2.5mm   | HF4-10mm    | 440130 | \$ 140.31  |
| 12mm    | 12mm                   | 4        | 38mm    | 4.6mm                              | 100mm                   | 3.0mm   | HF4-12mm    | 440140 | \$ 171.18  |

| Material Guide |                                      |                                | Condition                           | FL | CHIP PER TOOTH |        |        |        |        | SFM  | FL | CHIP PER TOOTH |           |           |           |           |
|----------------|--------------------------------------|--------------------------------|-------------------------------------|----|----------------|--------|--------|--------|--------|------|----|----------------|-----------|-----------|-----------|-----------|
|                |                                      |                                |                                     |    | 1/8"           | 1/4"   | 3/8"   | 1/2"   | 5/8"   |      |    | 1/8"           | 1/4"      | 3/8"      | 1/2"      | 5/8"      |
| ISO-M          | Precipitation <35 HRc                | 13-8, 15-5, 17-4PH             | Axial Depth Max & 75% Cutting Width | 2  | 0.0070         | 0.0110 | 0.0180 | 0.0220 | 0.0260 | 725  | 4  | 0.0070         | 0.0110    | 0.0180    | 0.0220    | 0.0260    |
|                | Precipitation >35 HRc                | 13-8, 15-5, 17-4PH             | Axial Depth Max & 75% Cutting Width | 2  | 0.0060         | 0.0090 | 0.0140 | 0.0170 | 0.0220 | 525  | 4  | 0.0060         | 0.0090    | 0.0140    | 0.0170    | 0.0220    |
|                | Austenitic <28 HRc                   | 302, 303, 304L, 316L           | Axial Depth Max & 75% Cutting Width | 2  | 0.0070         | 0.0100 | 0.0150 | 0.0220 | 0.0260 | 350  | 4  | 0.0070         | 0.0100    | 0.0150    | 0.0220    | 0.0260    |
| ISO-P          | High Strength Steels                 | 4140, 4340, 52100              | Axial Depth Max & 75% Cutting Width | 2  | 0.0070         | 0.0110 | 0.0180 | 0.0220 | 0.0260 | 1050 | 4  | 0.0070         | 0.0110    | 0.0180    | 0.0220    | 0.0260    |
|                | High Alloy Steels Mold & Die <50 HRc | A-2, P20, 01, 02, 06, D2, H-13 | Axial Depth Max & 75% Cutting Width | 2  | 0.0070         | 0.0100 | 0.0170 | 0.0200 | 0.0220 | 1200 | 4  | 0.0070         | 0.0100    | 0.0170    | 0.0200    | 0.0220    |
|                | High Alloy Steels Mold & Die >50 HRc | A-2, P20, 01, 02, 06, D2, H-13 | Axial Depth Max & 75% Cutting Width | 2  | 0.0060         | 0.0090 | 0.0130 | 0.0180 | 0.0200 | 600  | 4  | 0.0060         | 0.0090    | 0.0130    | 0.0180    | 0.0200    |
|                | Medium Alloy Steels                  | 200, 250, 300                  | Axial Depth Max & 75% Cutting Width | 2  | 0.0080         | 0.0120 | 0.0190 | 0.0250 | 0.0280 | 1350 | 4  | 0.0080         | 0.0120    | 0.0190    | 0.0250    | 0.0280    |
| ISO-K          | Cast Iron <40 HRc Grey Cast Iron     | SAE J431, ASTM A48             | Axial Depth Max & 75% Cutting Width | 2  | 0.0060         | 0.0100 | 0.0160 | 0.0200 | 0.0220 | 2650 | 4  | 0.0060         | 0.0100    | 0.0160    | 0.0200    | 0.0220    |
|                | Cast Iron >40 HRc Grey Cast Iron     | SAE J431, ASTM A48             | Axial Depth Max & 75% Cutting Width | 2  | 0.0060         | 0.0100 | 0.0160 | 0.0200 | 0.0220 | 1200 | 4  | 0.0060         | 0.0100    | 0.0160    | 0.0200    | 0.0220    |
| ISO-S          | Titanium Alloys                      | 6AL-4V, ASTM 1, 2, 3, 6AL-2S   | Axial Depth Max & 75% Cutting Width | 2  | 0.0060         | 0.0100 | 0.0160 | 0.0200 | 0.0220 | 450  | 4  | .003-.006      | .006-.011 | .009-.016 | .012-.022 | .012-.024 |

| Material Guide |                                      |                                | Condition                           | FL | CHIP PER TOOTH - METRIC |        |        |        |        | M/ MIN | FL | CHIP PER TOOTH - METRIC |        |        |        |        |
|----------------|--------------------------------------|--------------------------------|-------------------------------------|----|-------------------------|--------|--------|--------|--------|--------|----|-------------------------|--------|--------|--------|--------|
|                |                                      |                                |                                     |    | 3mm                     | 6mm    | 8mm    | 10mm   | 12mm   |        |    | 3mm                     | 6mm    | 8mm    | 10mm   | 12mm   |
| ISO-M          | Precipitation <35 HRc                | 13-8, 15-5, 17-4PH             | Axial Depth Max & 75% Cutting Width | 2  | 0.1700                  | 0.2600 | 0.3700 | 0.4800 | 0.5300 | 225    | 4  | 0.1700                  | 0.2600 | 0.3700 | 0.4800 | 0.5300 |
|                | Precipitation >35 HRc                | 13-8, 15-5, 17-4PH             | Axial Depth Max & 75% Cutting Width | 2  | 0.1400                  | 0.2100 | 0.2900 | 0.3700 | 0.4100 | 160    | 4  | 0.1400                  | 0.2100 | 0.2900 | 0.3700 | 0.4100 |
|                | Austenitic <28 HRc                   | 302, 303, 304L, 316L           | Axial Depth Max & 75% Cutting Width | 2  | 0.1700                  | 0.2400 | 0.3200 | 0.4000 | 0.5300 | 100    | 4  | 0.1700                  | 0.2400 | 0.3200 | 0.4000 | 0.5300 |
| ISO-P          | High Strength Steels                 | 4140, 4340, 52100              | Axial Depth Max & 75% Cutting Width | 2  | 0.1700                  | 0.2600 | 0.3700 | 0.4800 | 0.5300 | 300    | 4  | 0.1700                  | 0.2600 | 0.3700 | 0.4800 | 0.5300 |
|                | High Alloy Steels Mold & Die <50 HRc | A-2, P20, 01, 02, 06, D2, H-13 | Axial Depth Max & 75% Cutting Width | 2  | 0.1900                  | 0.2900 | 0.4000 | 0.5100 | 0.6000 | 385    | 4  | 0.1900                  | 0.2900 | 0.4000 | 0.5100 | 0.6000 |
|                | High Alloy Steels Mold & Die >50 HRc | A-2, P20, 01, 02, 06, D2, H-13 | Axial Depth Max & 75% Cutting Width | 2  | 0.1700                  | 0.2400 | 0.3500 | 0.4500 | 0.4800 | 320    | 4  | 0.1700                  | 0.2400 | 0.3500 | 0.4500 | 0.4800 |
|                | Medium Alloy Steels                  | 200, 250, 300                  | Axial Depth Max & 75% Cutting Width | 2  | 0.1400                  | 0.2100 | 0.2800 | 0.3500 | 0.4300 | 165    | 4  | 0.1400                  | 0.2100 | 0.2800 | 0.3500 | 0.4300 |
| ISO-K          | Cast Iron <40 HRc Grey Cast Iron     | SAE J431, ASTM A48             | Axial Depth Max & 75% Cutting Width | 2  | 0.1400                  | 0.2400 | 0.3300 | 0.4300 | 0.4800 | 700    | 4  | 0.1400                  | 0.2400 | 0.3300 | 0.4300 | 0.4800 |
|                | Cast Iron >40 HRc Grey Cast Iron     | SAE J431, ASTM A48             | Axial Depth Max & 75% Cutting Width | 2  | 0.1400                  | 0.2400 | 0.3300 | 0.4300 | 0.4800 | 325    | 4  | 0.1400                  | 0.2400 | 0.3300 | 0.4300 | 0.4800 |
| ISO-S          | Titanium Alloys                      | 6AL-4V, ASTM 1, 2, 3, 6AL-2S   | Axial Depth Max & 75% Cutting Width | 2  | 0.1400                  | 0.2400 | 0.3300 | 0.4300 | 0.4800 | 155    | 4  | 0.1400                  | 0.2400 | 0.3300 | 0.4300 | 0.4800 |

# Ferrous Alloys



| Carbide | 4 Flute<br>Center<br>Cutting | 37° Helix | TiAIN | +.000 / -.002 | HRC <54 | Series: AP4        |        |            |
|---------|------------------------------|-----------|-------|---------------|---------|--------------------|--------|------------|
| CUT DIA | SHANK DIA                    | FLUTES    | LOC   | OAL           | CORNER  | PART NAME          | EDP    | PRICE LIST |
| 1/8     | 1/8                          | 4         | 1/4   | 1-1/2         | SQ      | AP4-S-.1250-SQ     | 420000 | \$ 15.44   |
| 1/8     | 1/8                          | 4         | 1/4   | 1-1/2         | 0.010   | AP4-S-.1250-R.010  | 420010 | \$ 19.07   |
| 1/8     | 1/8                          | 4         | 1/4   | 1-1/2         | BALL    | AP4-S-.1250-BN     | 420020 | \$ 18.94   |
| 1/8     | 1/8                          | 4         | 1/2   | 1-1/2         | SQ      | AP4-.1250-SQ       | 420030 | \$ 16.13   |
| 1/8     | 1/8                          | 4         | 1/2   | 1-1/2         | 0.010   | AP4-.1250-R.010    | 420040 | \$ 19.79   |
| 1/8     | 1/8                          | 4         | 1/2   | 1-1/2         | 0.015   | AP4-.1250-R.015    | 420050 | \$ 19.79   |
| 1/8     | 1/8                          | 4         | 1/2   | 1-1/2         | 0.020   | AP4-.1250-R.020    | 420060 | \$ 19.79   |
| 1/8     | 1/8                          | 4         | 1/2   | 1-1/2         | 0.030   | AP4-.1250-R.030    | 420070 | \$ 19.79   |
| 1/8     | 1/8                          | 4         | 1/2   | 1-1/2         | BALL    | AP4-.1250-BN       | 420080 | \$ 19.79   |
| 1/8     | 1/8                          | 4         | 3/4   | 2-1/4         | SQ      | AP4-L-.1250-SQ     | 420090 | \$ 23.86   |
| 1/8     | 1/8                          | 4         | 3/4   | 2-1/4         | 0.015   | AP4-L-.1250-R.015  | 420100 | \$ 28.00   |
| 1/8     | 1/8                          | 4         | 3/4   | 2-1/4         | BALL    | AP4-L-.1250-BN     | 420110 | \$ 29.25   |
| 1/8     | 1/8                          | 4         | 1     | 3             | SQ      | AP4-XL-.1250-SQ    | 420120 | \$ 28.82   |
| 1/8     | 1/8                          | 4         | 1     | 3             | 0.015   | AP4-XL-.1250-R.015 | 420130 | \$ 32.04   |
| 3/16    | 3/16                         | 4         | 3/8   | 2             | SQ      | AP4-S-.1875-SQ     | 420140 | \$ 21.21   |
| 3/16    | 3/16                         | 4         | 3/8   | 2             | 0.010   | AP4-S-.1875-R.010  | 420150 | \$ 25.59   |
| 3/16    | 3/16                         | 4         | 3/8   | 2             | BALL    | AP4-S-.1875-BN     | 420160 | \$ 26.01   |
| 3/16    | 3/16                         | 4         | 5/8   | 2             | SQ      | AP4-.1875-SQ       | 420170 | \$ 22.07   |
| 3/16    | 3/16                         | 4         | 5/8   | 2             | 0.010   | AP4-.1875-R.010    | 420180 | \$ 26.50   |
| 3/16    | 3/16                         | 4         | 5/8   | 2             | 0.015   | AP4-.1875-R.015    | 420190 | \$ 26.50   |
| 3/16    | 3/16                         | 4         | 5/8   | 2             | 0.020   | AP4-.1875-R.020    | 420200 | \$ 26.50   |
| 3/16    | 3/16                         | 4         | 5/8   | 2             | 0.030   | AP4-.1875-R.030    | 420210 | \$ 26.50   |
| 3/16    | 3/16                         | 4         | 5/8   | 2             | BALL    | AP4-.1875-BN       | 420220 | \$ 27.06   |
| 3/16    | 3/16                         | 4         | 3/4   | 2-1/2         | SQ      | AP4-L-.1875-SQ     | 420230 | \$ 28.96   |
| 3/16    | 3/16                         | 4         | 3/4   | 2-1/2         | 0.015   | AP4-L-.1875-R.015  | 420240 | \$ 33.83   |
| 3/16    | 3/16                         | 4         | 3/4   | 2-1/2         | BALL    | AP4-L-.1875-BN     | 420250 | \$ 35.51   |
| 3/16    | 3/16                         | 4         | 1-1/8 | 3             | SQ      | AP4-XL-.1875-SQ    | 420260 | \$ 33.51   |
| 3/16    | 3/16                         | 4         | 1-1/8 | 3             | 0.015   | AP4-XL-.1875-R.015 | 420270 | \$ 37.41   |
| 1/4     | 1/4                          | 4         | 7/16  | 2             | SQ      | AP4-S-.2500-SQ     | 420280 | \$ 22.61   |
| 1/4     | 1/4                          | 4         | 7/16  | 2             | 0.015   | AP4-S-.2500-R.015  | 420290 | \$ 27.22   |
| 1/4     | 1/4                          | 4         | 7/16  | 2             | BALL    | AP4-S-.2500-BN     | 420300 | \$ 27.22   |
| 1/4     | 1/4                          | 4         | 3/4   | 2-1/2         | SQ      | AP4-.2500-SQ       | 420310 | \$ 28.70   |
| 1/4     | 1/4                          | 4         | 3/4   | 2-1/2         | 0.015   | AP4-.2500-R.015    | 420320 | \$ 33.68   |
| 1/4     | 1/4                          | 4         | 3/4   | 2-1/2         | 0.030   | AP4-.2500-R.030    | 420330 | \$ 33.68   |
| 1/4     | 1/4                          | 4         | 3/4   | 2-1/2         | 0.060   | AP4-.2500-R.060    | 420340 | \$ 33.68   |
| 1/4     | 1/4                          | 4         | 3/4   | 2-1/2         | BALL    | AP4-.2500-BN       | 420350 | \$ 34.55   |
| 1/4     | 1/4                          | 4         | 1-1/8 | 3             | SQ      | AP4-L-.2500-SQ     | 420360 | \$ 37.66   |
| 1/4     | 1/4                          | 4         | 1-1/8 | 3             | 0.015   | AP4-L-.2500-R.015  | 420370 | \$ 42.71   |
| 1/4     | 1/4                          | 4         | 1-1/8 | 3             | 0.030   | AP4-L-.2500-R.030  | 420380 | \$ 42.71   |
| 1/4     | 1/4                          | 4         | 1-1/8 | 3             | BALL    | AP4-L-.2500-BN     | 420390 | \$ 45.35   |

# Ferrous Alloys



| Carbide | 4 Flute<br>Center<br>Cutting | 37° Helix | TiAIN | +.000 / -.002 | HRC <54 | Series: AP4        |        |            |
|---------|------------------------------|-----------|-------|---------------|---------|--------------------|--------|------------|
| CUT DIA | SHANK DIA                    | FLUTES    | LOC   | OAL           | CORNER  | PART NAME          | EDP    | PRICE LIST |
| 1/4     | 1/4                          | 4         | 1-1/2 | 4             | SQ      | AP4-XL-.2500-SQ    | 420400 | \$ 45.52   |
| 1/4     | 1/4                          | 4         | 1-1/2 | 4             | 0.015   | AP4-XL-.2500-R.015 | 420410 | \$ 50.56   |
| 1/4     | 1/4                          | 4         | 1-1/2 | 4             | 0.030   | AP4-XL-.2500-R.030 | 420420 | \$ 50.56   |
| 1/4     | 1/4                          | 4         | 1-1/2 | 4             | BALL    | AP4-XL-.2500-BN    | 420430 | \$ 54.55   |
| 5/16    | 5/16                         | 4         | 1/2   | 2             | SQ      | AP4-S-.3125-SQ     | 420440 | \$ 35.59   |
| 5/16    | 5/16                         | 4         | 1/2   | 2             | 0.015   | AP4-S-.3125-R.015  | 420450 | \$ 40.40   |
| 5/16    | 5/16                         | 4         | 13/16 | 2-1/2         | SQ      | AP4-.3125-SQ       | 420460 | \$ 37.52   |
| 5/16    | 5/16                         | 4         | 13/16 | 2-1/2         | 0.015   | AP4-.3125-R.015    | 420470 | \$ 42.43   |
| 5/16    | 5/16                         | 4         | 13/16 | 2-1/2         | 0.030   | AP4-.3125-R.030    | 420480 | \$ 42.43   |
| 5/16    | 5/16                         | 4         | 13/16 | 2-1/2         | 0.060   | AP4-.3125-R.060    | 420490 | \$ 42.43   |
| 5/16    | 5/16                         | 4         | 13/16 | 2-1/2         | BALL    | AP4-.3125-BN       | 420500 | \$ 45.16   |
| 5/16    | 5/16                         | 4         | 1-1/8 | 3             | SQ      | AP4-L-.3125-SQ     | 420510 | \$ 41.92   |
| 5/16    | 5/16                         | 4         | 1-1/8 | 3             | 0.015   | AP4-L-.3125-R.015  | 420520 | \$ 47.15   |
| 5/16    | 5/16                         | 4         | 1-1/8 | 3             | 0.030   | AP4-L.3125-R.030   | 420530 | \$ 47.15   |
| 5/16    | 5/16                         | 4         | 1-5/8 | 4             | SQ      | AP4-XL-.3125-SQ    | 420540 | \$ 56.28   |
| 5/16    | 5/16                         | 4         | 1-5/8 | 4             | 0.015   | AP4-XL-.3125-R.015 | 420550 | \$ 62.39   |
| 5/16    | 5/16                         | 4         | 1-5/8 | 4             | 0.030   | AP4-XL.3125-R.030  | 420560 | \$ 62.39   |
| 3/8     | 3/8                          | 4         | 5/8   | 2             | SQ      | AP4-S-.3750-SQ     | 420570 | \$ 43.59   |
| 3/8     | 3/8                          | 4         | 5/8   | 2             | 0.015   | AP4-S-.3750-R.015  | 420580 | \$ 49.30   |
| 3/8     | 3/8                          | 4         | 5/8   | 2             | BALL    | AP4-S-.3750-BN     | 420590 | \$ 52.49   |
| 3/8     | 3/8                          | 4         | 1     | 2-1/2         | SQ      | AP4-.3750-SQ       | 420600 | \$ 42.34   |
| 3/8     | 3/8                          | 4         | 1     | 2-1/2         | 0.015   | AP4-.3750-R.015    | 420610 | \$ 47.98   |
| 3/8     | 3/8                          | 4         | 1     | 2-1/2         | 0.030   | AP4-.3750-R.030    | 420620 | \$ 47.98   |
| 3/8     | 3/8                          | 4         | 1     | 2-1/2         | 0.060   | AP4-.3750-R.060    | 420630 | \$ 47.98   |
| 3/8     | 3/8                          | 4         | 1     | 2-1/2         | BALL    | AP4-.3750-BN       | 420640 | \$ 50.98   |
| 3/8     | 3/8                          | 4         | 1-1/8 | 3             | SQ      | AP4-L-.3750-SQ     | 420650 | \$ 58.91   |
| 3/8     | 3/8                          | 4         | 1-1/8 | 3             | 0.015   | AP4-L-.3750-R.015  | 420660 | \$ 65.57   |
| 3/8     | 3/8                          | 4         | 1-1/8 | 3             | 0.030   | AP4-L-.3750-R.030  | 420670 | \$ 65.57   |
| 3/8     | 3/8                          | 4         | 1-1/8 | 3             | 0.060   | AP4-L-.3750-R.060  | 420680 | \$ 65.57   |
| 3/8     | 3/8                          | 4         | 1-1/8 | 3             | BALL    | AP4-L-.3750-BN     | 420690 | \$ 70.93   |
| 3/8     | 3/8                          | 4         | 1-3/4 | 4             | SQ      | AP4-XL-.3750-SQ    | 420700 | \$ 68.58   |
| 3/8     | 3/8                          | 4         | 1-3/4 | 4             | 0.015   | AP4-XL-.3750-R.015 | 420710 | \$ 75.83   |
| 3/8     | 3/8                          | 4         | 1-3/4 | 4             | 0.030   | AP4-XL-.3750-R.030 | 420720 | \$ 75.83   |
| 7/16    | 7/16                         | 4         | 1     | 2-3/4         | SQ      | AP4-.4375-SQ       | 420730 | \$ 58.08   |
| 7/16    | 7/16                         | 4         | 1     | 2-3/4         | .030    | AP4-.4375-R.030    | 420740 | \$ 65.15   |
| 7/16    | 7/16                         | 4         | 1     | 2-3/4         | .060    | AP4-.4375-R.060    | 420750 | \$ 65.15   |
| 7/16    | 7/16                         | 4         | 2     | 4             | SQ      | AP4-L-.4375-SQ     | 420760 | \$ 93.95   |
| 7/16    | 7/16                         | 4         | 3     | 6             | SQ      | AP4-XL-.4375-SQ    | 420770 | \$ 128.85  |
| 1/2     | 1/2                          | 4         | 5/8   | 2-1/2         | SQ      | AP4-S-.5000-SQ     | 420780 | \$ 70.60   |
| 1/2     | 1/2                          | 4         | 5/8   | 2-1/2         | 0.030   | AP4-S-.5000-R.030  | 420790 | \$ 78.85   |

# Ferrous Alloys



| Carbide | 4 Flute<br>Center<br>Cutting | 37° Helix | TiAIN | +.000 / -.002 | HRC <54 | Series: AP4        |        |            |
|---------|------------------------------|-----------|-------|---------------|---------|--------------------|--------|------------|
| CUT DIA | SHANK DIA                    | FLUTES    | LOC   | OAL           | CORNER  | PART NAME          | EDP    | PRICE LIST |
| 1/2     | 1/2                          | 4         | 1     | 3             | SQ      | AP4-.5000-SQ       | 420800 | \$ 72.02   |
| 1/2     | 1/2                          | 4         | 1     | 3             | 0.015   | AP4-.5000-R.015    | 420810 | \$ 80.35   |
| 1/2     | 1/2                          | 4         | 1     | 3             | 0.030   | AP4-.5000-R.030    | 420820 | \$ 80.35   |
| 1/2     | 1/2                          | 4         | 1     | 3             | 0.060   | AP4-.5000-R.060    | 420830 | \$ 80.35   |
| 1/2     | 1/2                          | 4         | 1     | 3             | BALL    | AP4-.5000-BN       | 420840 | \$ 84.34   |
| 1/2     | 1/2                          | 4         | 1-1/4 | 3             | SQ      | AP4-M-.5000-SQ     | 420850 | \$ 76.22   |
| 1/2     | 1/2                          | 4         | 1-1/4 | 3             | 0.015   | AP4-M-.5000-R.015  | 420860 | \$ 85.06   |
| 1/2     | 1/2                          | 4         | 1-1/4 | 3             | 0.030   | AP4-M-.5000-R.030  | 420870 | \$ 85.06   |
| 1/2     | 1/2                          | 4         | 1-1/4 | 3             | 0.060   | AP4-M-.5000-R.060  | 420880 | \$ 85.06   |
| 1/2     | 1/2                          | 4         | 1-1/4 | 3             | BALL    | AP4-M-.5000-BN     | 420890 | \$ 89.27   |
| 1/2     | 1/2                          | 4         | 2     | 4             | SQ      | AP4-L-.5000-SQ     | 420900 | \$ 90.58   |
| 1/2     | 1/2                          | 4         | 2     | 4             | 0.030   | AP4-L-.5000-R.030  | 420910 | \$ 100.08  |
| 1/2     | 1/2                          | 4         | 2     | 4             | 0.060   | AP4-L-.5000-R.060  | 420920 | \$ 100.08  |
| 1/2     | 1/2                          | 4         | 2     | 4             | BALL    | AP4-L-.5000-BN     | 420930 | \$ 106.06  |
| 1/2     | 1/2                          | 4         | 3     | 6             | SQ      | AP4-XL-.5000-SQ    | 420940 | \$ 140.11  |
| 1/2     | 1/2                          | 4         | 3     | 6             | 0.030   | AP4-XL-.5000-R.030 | 420950 | \$ 152.70  |
| 1/2     | 1/2                          | 4         | 3     | 6             | 0.060   | AP4-XL-.5000-R.060 | 420960 | \$ 152.70  |
| 5/8     | 5/8                          | 4         | 3/4   | 3             | SQ      | AP4-S-.6250-SQ     | 420970 | \$ 120.84  |
| 5/8     | 5/8                          | 4         | 3/4   | 3             | 0.030   | AP4-S-.6250-R.030  | 420980 | \$ 133.02  |
| 5/8     | 5/8                          | 4         | 1-1/4 | 3-1/2         | SQ      | AP4-.6250-SQ       | 420990 | \$ 134.76  |
| 5/8     | 5/8                          | 4         | 1-1/4 | 3-1/2         | 0.030   | AP4-.6250-R.030    | 421000 | \$ 147.81  |
| 5/8     | 5/8                          | 4         | 1-1/4 | 3-1/2         | 0.060   | AP4-.6250-R.060    | 421010 | \$ 147.81  |
| 5/8     | 5/8                          | 4         | 1-1/4 | 3-1/2         | BALL    | AP4-.6250-BN       | 421020 | \$ 157.80  |
| 5/8     | 5/8                          | 4         | 2-1/4 | 5             | SQ      | AP4-L-.6250-SQ     | 421030 | \$ 179.09  |
| 5/8     | 5/8                          | 4         | 2-1/4 | 5             | BALL    | AP4-L-.6250-BN     | 421040 | \$ 209.71  |
| 5/8     | 5/8                          | 4         | 2-1/4 | 5             | 0.030   | AP4-L-.6250-R.030  | 421050 | \$ 194.91  |
| 5/8     | 5/8                          | 4         | 2-1/4 | 5             | 0.060   | AP4-L-.6250-R.060  | 421060 | \$ 194.91  |
| 5/8     | 5/8                          | 4         | 3     | 6             | SQ      | AP4-XL-.6250-SQ    | 421070 | \$ 205.81  |
| 5/8     | 5/8                          | 4         | 3     | 6             | 0.030   | AP4-XL-.6250-R.030 | 421080 | \$ 223.30  |
| 5/8     | 5/8                          | 4         | 3     | 6             | 0.060   | AP4-XL-.6250-R.060 | 421090 | \$ 223.30  |
| 3/4     | 3/4                          | 4         | 1     | 3             | SQ      | AP4-S-.7500-SQ     | 421100 | \$ 174.67  |
| 3/4     | 3/4                          | 4         | 1     | 3             | 0.030   | AP4-S-.7500-R.030  | 421110 | \$ 191.00  |
| 3/4     | 3/4                          | 4         | 1-1/2 | 4             | SQ      | AP4-.7500-SQ       | 421120 | \$ 197.30  |
| 3/4     | 3/4                          | 4         | 1-1/2 | 4             | 0.030   | AP4-.7500-R.030    | 421130 | \$ 215.06  |
| 3/4     | 3/4                          | 4         | 1-1/2 | 4             | 0.060   | AP4-.7500-R.060    | 421140 | \$ 215.06  |
| 3/4     | 3/4                          | 4         | 1-1/2 | 4             | BALL    | AP4-.7500-BN       | 421150 | \$ 228.85  |
| 3/4     | 3/4                          | 4         | 2-1/4 | 5             | SQ      | AP4-L-.7500-SQ     | 421160 | \$ 247.54  |
| 3/4     | 3/4                          | 4         | 2-1/4 | 5             | 0.030   | AP4-L-.7500-R.030  | 421170 | \$ 268.44  |
| 3/4     | 3/4                          | 4         | 2-1/4 | 5             | 0.060   | AP4-L-.7500-R.060  | 421180 | \$ 268.44  |
| 3/4     | 3/4                          | 4         | 2-1/4 | 5             | BALL    | AP4-L-.7500-BN     | 421190 | \$ 287.13  |

# Ferrous Alloys



| Carbide | 4 Flute<br>Center<br>Cutting | 37° Helix | TiAIN | +.000 / -.002 | HRC <54 | Series: AP4        |        |            |
|---------|------------------------------|-----------|-------|---------------|---------|--------------------|--------|------------|
| CUT DIA | SHANK DIA                    | FLUTES    | LOC   | OAL           | CORNER  | PART NAME          | EDP    | PRICE LIST |
| 3/4     | 3/4                          | 4         | 3     | 6             | SQ      | AP4-XL-.7500-SQ    | 421200 | \$ 313.56  |
| 3/4     | 3/4                          | 4         | 3     | 6             | 0.030   | AP4-XL-.7500-R.030 | 421210 | \$ 338.60  |
| 3/4     | 3/4                          | 4         | 3     | 6             | 0.060   | AP4-XL.7500-R.060  | 421220 | \$ 338.60  |

| Material Guide |                              |                                                                                                      | Condition                               |  | SFM | FL | CHIP PER TOOTH |        |        |        |        |        |        |        |        |        |
|----------------|------------------------------|------------------------------------------------------------------------------------------------------|-----------------------------------------|--|-----|----|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| ISO-M          | Precipitation                | 13-8, 15-5, 17-4PH                                                                                   | Slotting @ ≤ .5 x D                     |  | 250 | 4  | 0.0007         | 0.0012 | 0.0014 | 0.0019 | 0.0022 | 0.0026 | 0.0029 | 0.0036 | 0.0043 | 0.0058 |
|                |                              |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .3 D Radial |  | 325 | 4  | 0.0010         | 0.0016 | 0.0020 | 0.0026 | 0.0029 | 0.0035 | 0.0039 | 0.0049 | 0.0059 | 0.0079 |
|                | Austenitic                   | 302, 303, 304L, 316L                                                                                 | Slotting @ ≤ .5 x D                     |  | 275 | 4  | 0.0009         | 0.0013 | 0.0017 | 0.0023 | 0.0026 | 0.0031 | 0.0035 | 0.0043 | 0.0052 | 0.0069 |
|                |                              |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .3 D Radial |  | 350 | 4  | 0.0012         | 0.0017 | 0.0023 | 0.0030 | 0.0036 | 0.0043 | 0.0048 | 0.0059 | 0.0071 | 0.0094 |
|                | Martensitic                  | 403, 410, 416                                                                                        | Slotting @ ≤ .5 x D                     |  | 300 | 4  | 0.0009         | 0.0014 | 0.0019 | 0.0024 | 0.0027 | 0.0033 | 0.0038 | 0.0046 | 0.0055 | 0.0074 |
|                |                              |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .3 D Radial |  | 375 | 4  | 0.0013         | 0.0020 | 0.0025 | 0.0032 | 0.0038 | 0.0045 | 0.0051 | 0.0064 | 0.0075 | 0.0101 |
| ISO-S          | Cobalt Base                  | Stellite, Haynes 25, 188, X-40, L-605                                                                | Slotting @ ≤ .5 x D                     |  | 110 | 4  | 0.0004         | 0.0006 | 0.0007 | 0.0009 | 0.0012 | 0.0014 | 0.0016 | 0.0020 | 0.0023 | 0.0032 |
|                |                              |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .3 D Radial |  | 150 | 4  | 0.0004         | 0.0006 | 0.0010 | 0.0013 | 0.0010 | 0.0012 | 0.0019 | 0.0023 | 0.0029 | 0.0038 |
|                | Nickel Base                  | Inconel 600, 625, 718, Nickel 200, 270, Invar, Monel 400, 405, K-Monel, PermaNickel 300, Inconel 600 | Slotting @ ≤ .5 x D                     |  | 75  | 4  | 0.0006         | 0.0004 | 0.0010 | 0.0013 | 0.0014 | 0.0017 | 0.0025 | 0.0023 | 0.0038 | 0.0038 |
|                |                              |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .3 D Radial |  | 115 | 4  | 0.0006         | 0.0006 | 0.0010 | 0.0013 | 0.0016 | 0.0019 | 0.0026 | 0.0026 | 0.0032 | 0.0032 |
|                | Iron Base                    | Inconel 800-802, Multimet N-155,Timken 16-26-6                                                       | Slotting @ ≤ .5 x D                     |  | 95  | 4  | 0.0006         | 0.0007 | 0.0013 | 0.0017 | 0.0020 | 0.0024 | 0.0027 | 0.0033 | 0.0040 | 0.0053 |
|                |                              |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .3 D Radial |  | 130 | 4  | 0.0006         | 0.0007 | 0.0014 | 0.0019 | 0.0023 | 0.0028 | 0.0030 | 0.0038 | 0.0045 | 0.0061 |
| ISO-P          | High Strength Steels         | 4140, 4340, 52100                                                                                    | Slotting @ ≤ .5 x D                     |  | 300 | 4  | 0.0009         | 0.0013 | 0.0019 | 0.0024 | 0.0027 | 0.0033 | 0.0038 | 0.0046 | 0.0055 | 0.0074 |
|                |                              |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .3 D Radial |  | 375 | 4  | 0.0013         | 0.0019 | 0.0025 | 0.0032 | 0.0038 | 0.0045 | 0.0051 | 0.0064 | 0.0075 | 0.0101 |
|                | High Alloy Steels Mold & Die | A-2, P20, 01, 02, D2, H-13                                                                           | Slotting @ ≤ .5 x D                     |  | 275 | 4  | 0.0007         | 0.0012 | 0.0016 | 0.0021 | 0.0023 | 0.0028 | 0.0032 | 0.0039 | 0.0046 | 0.0062 |
|                |                              |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .3 D Radial |  | 350 | 4  | 0.0010         | 0.0016 | 0.0022 | 0.0028 | 0.0032 | 0.0038 | 0.0042 | 0.0053 | 0.0064 | 0.0085 |
|                | Medium Alloy Steels          | 200, 250, 300                                                                                        | Slotting @ ≤ .75 x D                    |  | 325 | 4  | 0.0007         | 0.0007 | 0.0017 | 0.0023 | 0.0029 | 0.0035 | 0.0036 | 0.0051 | 0.0058 | 0.0072 |
|                |                              |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .3 D Radial |  | 400 | 4  | 0.0007         | 0.0007 | 0.0022 | 0.0028 | 0.0035 | 0.0042 | 0.0043 | 0.0058 | 0.0072 | 0.0087 |
|                | Low Alloy Steels-Maraging    | 10XX, 11XX, 13XX                                                                                     | Slotting @ ≤ .75 x D                    |  | 325 | 4  | 0.0010         | 0.0014 | 0.0020 | 0.0026 | 0.0030 | 0.0036 | 0.0040 | 0.0051 | 0.0061 | 0.0081 |
|                |                              |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .3 D Radial |  | 400 | 4  | 0.0014         | 0.0022 | 0.0027 | 0.0036 | 0.0042 | 0.0050 | 0.0055 | 0.0069 | 0.0082 | 0.0110 |
| ISO-K          | Ductile Iron                 | ASTM A536, ASTM 897                                                                                  | Slotting @ 1 x D                        |  | 400 | 4  | 0.0007         | 0.0012 | 0.0014 | 0.0019 | 0.0022 | 0.0026 | 0.0029 | 0.0036 | 0.0043 | 0.0058 |
|                |                              |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .3 D Radial |  | 550 | 4  | 0.0010         | 0.0014 | 0.0020 | 0.0026 | 0.0029 | 0.0035 | 0.0039 | 0.0049 | 0.0059 | 0.0079 |
|                | Cast Iron                    | SAE J431, ASTM A48                                                                                   | Slotting @ 1 x D                        |  | 450 | 4  | 0.0009         | 0.0014 | 0.0017 | 0.0023 | 0.0026 | 0.0031 | 0.0035 | 0.0043 | 0.0052 | 0.0069 |
|                |                              |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .3 D Radial |  | 600 | 4  | 0.0012         | 0.0017 | 0.0023 | 0.0030 | 0.0036 | 0.0043 | 0.0048 | 0.0059 | 0.0071 | 0.0094 |
| ISO-S          | Titanium Alloys              | 6AL-4V, ASTM 1, 2, 3, 6AL-2S                                                                         | Slotting @ ≤ .5 x D                     |  | 175 | 4  | 0.0007         | 0.0010 | 0.0013 | 0.0017 | 0.0020 | 0.0024 | 0.0026 | 0.0033 | 0.0040 | 0.0053 |
|                |                              |                                                                                                      | Pro iling @ 2 x D Axial / ≤ .3 D Radial |  | 275 | 4  | 0.0009         | 0.0014 | 0.0019 | 0.0024 | 0.0027 | 0.0033 | 0.0036 | 0.0045 | 0.0055 | 0.0072 |

For 5553, decrease SFM and IPM by 25%

# Ferrous Alloys



| Carbide | 5 Flute<br>Center<br>Cutting | 37° Helix | TiAIN | +.000 / -.002 | HRC <54 | Series: AP5        |        |            |
|---------|------------------------------|-----------|-------|---------------|---------|--------------------|--------|------------|
| CUT DIA | SHANK DIA                    | FLUTES    | LOC   | OAL           | CORNER  | PART NAME          | EDP    | PRICE LIST |
| 1/8     | 1/8                          | 5         | 1/4   | 1-1/2         | SQ      | AP5-S-.1250-SQ     | 520000 | \$ 16.90   |
| 1/8     | 1/8                          | 5         | 1/4   | 1-1/2         | 0.010   | AP5-S-.1250-R.010  | 520010 | \$ 20.89   |
| 1/8     | 1/8                          | 5         | 1/4   | 1-1/2         | BALL    | AP5-S-.1250-BN     | 520020 | \$ 20.89   |
| 1/8     | 1/8                          | 5         | 1/2   | 1-1/2         | SQ      | AP5-.1250-SQ       | 520030 | \$ 17.67   |
| 1/8     | 1/8                          | 5         | 1/2   | 1-1/2         | 0.010   | AP5-.1250-R.010    | 520040 | \$ 21.67   |
| 1/8     | 1/8                          | 5         | 1/2   | 1-1/2         | 0.015   | AP5-.1250-R.015    | 520050 | \$ 21.67   |
| 1/8     | 1/8                          | 5         | 1/2   | 1-1/2         | 0.020   | AP5-.1250-R.020    | 520060 | \$ 21.67   |
| 1/8     | 1/8                          | 5         | 1/2   | 1-1/2         | 0.030   | AP5-.1250-R.030    | 520070 | \$ 21.67   |
| 1/8     | 1/8                          | 5         | 1/2   | 1-1/2         | BALL    | AP5-.1250-BN       | 520080 | \$ 21.85   |
| 1/8     | 1/8                          | 5         | 3/4   | 2-1/4         | SQ      | AP5-L-.1250-SQ     | 520090 | \$ 26.12   |
| 1/8     | 1/8                          | 5         | 3/4   | 2-1/4         | 0.015   | AP5-L-.1250-R.015  | 520100 | \$ 30.67   |
| 1/8     | 1/8                          | 5         | 3/4   | 2-1/4         | BALL    | AP5-L-.1250-BN     | 520110 | \$ 32.26   |
| 1/8     | 1/8                          | 5         | 1     | 3             | SQ      | AP5-XL-.1250-SQ    | 520120 | \$ 31.56   |
| 1/8     | 1/8                          | 5         | 1     | 3             | 0.015   | AP5-XL-.1250-R.015 | 520130 | \$ 35.09   |
| 3/16    | 3/16                         | 5         | 3/8   | 2             | SQ      | AP5-S-.1875-SQ     | 520140 | \$ 23.24   |
| 3/16    | 3/16                         | 5         | 3/8   | 2             | 0.010   | AP5-S-.1875-R.010  | 520150 | \$ 28.02   |
| 3/16    | 3/16                         | 5         | 3/8   | 2             | BALL    | AP5-S-.1875-BN     | 520160 | \$ 28.48   |
| 3/16    | 3/16                         | 5         | 5/8   | 2             | SQ      | AP5-.1875-SQ       | 520170 | \$ 24.17   |
| 3/16    | 3/16                         | 5         | 5/8   | 2             | 0.010   | AP5-.1875-R.010    | 520180 | \$ 29.01   |
| 3/16    | 3/16                         | 5         | 5/8   | 2             | 0.015   | AP5-.1875-R.015    | 520190 | \$ 29.01   |
| 3/16    | 3/16                         | 5         | 5/8   | 2             | 0.020   | AP5-.1875-R.020    | 520200 | \$ 29.01   |
| 3/16    | 3/16                         | 5         | 5/8   | 2             | 0.030   | AP5-.1875-R.030    | 520210 | \$ 29.01   |
| 3/16    | 3/16                         | 5         | 5/8   | 2             | BALL    | AP5-.1875-BN       | 520220 | \$ 29.61   |
| 3/16    | 3/16                         | 5         | 3/4   | 2-1/2         | SQ      | AP5-L-.1875-SQ     | 520230 | \$ 31.71   |
| 3/16    | 3/16                         | 5         | 3/4   | 2-1/2         | 0.015   | AP5-L-.1875-R.015  | 520240 | \$ 37.04   |
| 3/16    | 3/16                         | 5         | 3/4   | 2-1/2         | BALL    | AP5-L-.1875-BN     | 520250 | \$ 38.96   |
| 3/16    | 3/16                         | 5         | 1-1/8 | 3             | SQ      | AP5-XL-.1875       | 520260 | \$ 36.69   |
| 3/16    | 3/16                         | 5         | 1-1/8 | 3             | 0.015   | AP5-XL-.1875-R.015 | 520270 | \$ 40.97   |
| 1/4     | 1/4                          | 5         | 7/16  | 2             | SQ      | AP5-S-.2500-SQ     | 520280 | \$ 24.31   |
| 1/4     | 1/4                          | 5         | 7/16  | 2             | 0.015   | AP5-S-.2500-R.015  | 520290 | \$ 29.27   |
| 1/4     | 1/4                          | 5         | 7/16  | 2             | BALL    | AP5-S-.2500-BN     | 520300 | \$ 29.39   |
| 1/4     | 1/4                          | 5         | 3/4   | 2-1/2         | SQ      | AP5-.2500-SQ       | 520310 | \$ 30.84   |
| 1/4     | 1/4                          | 5         | 3/4   | 2-1/2         | 0.015   | AP5-.2500-R.015    | 520320 | \$ 36.21   |
| 1/4     | 1/4                          | 5         | 3/4   | 2-1/2         | 0.030   | AP5-.2500-R.030    | 520330 | \$ 36.21   |
| 1/4     | 1/4                          | 5         | 3/4   | 2-1/2         | 0.060   | AP5-.2500-R.060    | 520340 | \$ 36.21   |
| 1/4     | 1/4                          | 5         | 3/4   | 2-1/2         | BALL    | AP5-.2500-BN       | 520350 | \$ 37.52   |
| 1/4     | 1/4                          | 5         | 1-1/8 | 3             | SQ      | AP5-L-.2500-SQ     | 520360 | \$ 40.48   |
| 1/4     | 1/4                          | 5         | 1-1/8 | 3             | 0.015   | AP5-L-.2500-R.015  | 520370 | \$ 45.91   |
| 1/4     | 1/4                          | 5         | 1-1/8 | 3             | 0.030   | AP5-L-.2500-R.030  | 520380 | \$ 45.91   |
| 1/4     | 1/4                          | 5         | 1-1/8 | 3             | BALL    | AP5-L-.2500-BN     | 520390 | \$ 49.41   |

# Ferrous Alloys



| Carbide | 5 Flute<br>Center<br>Cutting | 37° Helix | TiAIN | +.000 / -.002 | HRC <54 | Series: AP5        |        |            |
|---------|------------------------------|-----------|-------|---------------|---------|--------------------|--------|------------|
| CUT DIA | SHANK DIA                    | FLUTES    | LOC   | OAL           | CORNER  | PART NAME          | EDP    | PRICE LIST |
| 1/4     | 1/4                          | 5         | 1-1/2 | 4             | SQ      | AP5-XL-.2500-SQ    | 520400 | \$ 48.95   |
| 1/4     | 1/4                          | 5         | 1-1/2 | 4             | 0.015   | AP5-XL-.2500-R.015 | 520410 | \$ 54.35   |
| 1/4     | 1/4                          | 5         | 1-1/2 | 4             | 0.030   | AP5-XL-.2500-R.030 | 520420 | \$ 54.35   |
| 1/4     | 1/4                          | 5         | 1-1/2 | 4             | BALL    | AP5-XL-.2500-BN    | 520430 | \$ 58.34   |
| 5/16    | 5/16                         | 5         | 1/2   | 2             | SQ      | AP5-S-.3125-SQ     | 520440 | \$ 38.25   |
| 5/16    | 5/16                         | 5         | 1/2   | 2             | 0.015   | AP5-S-.3125-R.015  | 520450 | \$ 43.42   |
| 5/16    | 5/16                         | 5         | 13/16 | 2-1/2         | SQ      | AP5-.3125-SQ       | 520460 | \$ 40.33   |
| 5/16    | 5/16                         | 5         | 13/16 | 2-1/2         | 0.015   | AP5-.3125-R.015    | 520470 | \$ 45.63   |
| 5/16    | 5/16                         | 5         | 13/16 | 2-1/2         | 0.030   | AP5-.3125-R.030    | 520480 | \$ 45.63   |
| 5/16    | 5/16                         | 5         | 13/16 | 2-1/2         | 0.060   | AP5-.3125-R.060    | 520490 | \$ 45.63   |
| 5/16    | 5/16                         | 5         | 13/16 | 2-1/2         | BALL    | AP5-.3125-BN       | 520500 | \$ 48.87   |
| 5/16    | 5/16                         | 5         | 1-1/8 | 3             | SQ      | AP5-L-.3125-SQ     | 520510 | \$ 45.07   |
| 5/16    | 5/16                         | 5         | 1-1/8 | 3             | 0.015   | AP5-L-.3125-R.015  | 520520 | \$ 50.68   |
| 5/16    | 5/16                         | 5         | 1-1/8 | 3             | 0.030   | AP5-L-.3125-R.030  | 520530 | \$ 50.68   |
| 5/16    | 5/16                         | 5         | 1-5/8 | 4             | SQ      | AP5-XL-.3125-SQ    | 520540 | \$ 60.52   |
| 5/16    | 5/16                         | 5         | 1-5/8 | 4             | 0.015   | AP5-XL-.3125-R.015 | 520550 | \$ 67.07   |
| 5/16    | 5/16                         | 5         | 1-5/8 | 4             | 0.030   | AP5-XL-.3125-R.030 | 520560 | \$ 67.07   |
| 3/8     | 3/8                          | 5         | 5/8   | 2             | SQ      | AP5-S-.3750-SQ     | 520570 | \$ 46.85   |
| 3/8     | 3/8                          | 5         | 5/8   | 2             | 0.015   | AP5-S-.3750-R.015  | 520580 | \$ 53.01   |
| 3/8     | 3/8                          | 5         | 5/8   | 2             | BALL    | AP5-S-.3750-BN     | 520590 | \$ 56.82   |
| 3/8     | 3/8                          | 5         | 1     | 2-1/2         | SQ      | AP5-.3750-SQ       | 520600 | \$ 45.51   |
| 3/8     | 3/8                          | 5         | 1     | 2-1/2         | 0.015   | AP5-.3750-R.015    | 520610 | \$ 51.59   |
| 3/8     | 3/8                          | 5         | 1     | 2-1/2         | 0.030   | AP5-.3750-R.030    | 520620 | \$ 51.59   |
| 3/8     | 3/8                          | 5         | 1     | 2-1/2         | 0.060   | AP5-.3750-R.060    | 520630 | \$ 51.59   |
| 3/8     | 3/8                          | 5         | 1     | 2-1/2         | BALL    | AP5-.3750-BN       | 520640 | \$ 54.82   |
| 3/8     | 3/8                          | 5         | 1-1/8 | 3             | SQ      | AP5-L-.3750-SQ     | 520650 | \$ 63.33   |
| 3/8     | 3/8                          | 5         | 1-1/8 | 3             | 0.015   | AP5-L-.3750-R.015  | 520660 | \$ 70.49   |
| 3/8     | 3/8                          | 5         | 1-1/8 | 3             | 0.030   | AP5-L-.3750-R.030  | 520670 | \$ 70.49   |
| 3/8     | 3/8                          | 5         | 1-1/8 | 3             | 0.060   | AP5-L-.3750-R.060  | 520680 | \$ 70.49   |
| 3/8     | 3/8                          | 5         | 1-1/8 | 3             | BALL    | AP5-L-.3750-BN     | 520690 | \$ 76.69   |
| 3/8     | 3/8                          | 5         | 1-3/4 | 4             | SQ      | AP5-XL-.3750-SQ    | 520700 | \$ 73.71   |
| 3/8     | 3/8                          | 5         | 1-3/4 | 4             | 0.015   | AP5-XL-.3750-R.015 | 520710 | \$ 81.52   |
| 3/8     | 3/8                          | 5         | 1-3/4 | 4             | 0.030   | AP5-XL-.3750-R.030 | 520720 | \$ 81.52   |
| 7/16    | 7/16                         | 5         | 1     | 2-3/4         | SQ      | AP5-.4375-SQ       | 520730 | \$ 61.27   |
| 7/16    | 7/16                         | 5         | 1     | 2-3/4         | .030    | AP5-.4375-R.030    | 520740 | \$ 68.74   |
| 7/16    | 7/16                         | 5         | 1     | 2-3/4         | .060    | AP5-.4375-R.060    | 520750 | \$ 68.74   |
| 7/16    | 7/16                         | 5         | 2     | 4             | SQ      | AP5-L-.4375-SQ     | 520760 | \$ 99.13   |
| 7/16    | 7/16                         | 5         | 3     | 6             | SQ      | AP5-XL-.4375-SQ    | 520770 | \$ 135.95  |
| 1/2     | 1/2                          | 5         | 5/8   | 2-1/2         | SQ      | AP5-S-.5000-SQ     | 520780 | \$ 74.48   |
| 1/2     | 1/2                          | 5         | 5/8   | 2-1/2         | 0.030   | AP5-S-.5000-R.030  | 520790 | \$ 83.19   |

# Ferrous Alloys



| Carbide | 5 Flute<br>Center<br>Cutting | 37° Helix | TiAIN | +.000 / -.002 | HRC <54 | Series: AP5        |        |            |
|---------|------------------------------|-----------|-------|---------------|---------|--------------------|--------|------------|
| CUT DIA | SHANK DIA                    | FLUTES    | LOC   | OAL           | CORNER  | PART NAME          | EDP    | PRICE LIST |
| 1/2     | 1/2                          | 5         | 1     | 3             | SQ      | AP5-.5000-SQ       | 520800 | \$ 75.97   |
| 1/2     | 1/2                          | 5         | 1     | 3             | 0.015   | AP5-.5000-R.015    | 520810 | \$ 84.77   |
| 1/2     | 1/2                          | 5         | 1     | 3             | 0.030   | AP5-.5000-R.030    | 520820 | \$ 84.77   |
| 1/2     | 1/2                          | 5         | 1     | 3             | 0.060   | AP5-.5000-R.060    | 520830 | \$ 84.77   |
| 1/2     | 1/2                          | 5         | 1     | 3             | BALL    | AP5-.5000-BN       | 520840 | \$ 90.17   |
| 1/2     | 1/2                          | 5         | 1-1/4 | 3             | SQ      | AP5-M-.5000-SQ     | 520850 | \$ 80.42   |
| 1/2     | 1/2                          | 5         | 1-1/4 | 3             | 0.015   | AP5-M-.5000-R.015  | 520860 | \$ 89.74   |
| 1/2     | 1/2                          | 5         | 1-1/4 | 3             | 0.030   | AP5-M-.5000-R.030  | 520870 | \$ 89.74   |
| 1/2     | 1/2                          | 5         | 1-1/4 | 3             | 0.060   | AP5-M-.5000-R.060  | 520880 | \$ 89.74   |
| 1/2     | 1/2                          | 5         | 1-1/4 | 3             | BALL    | AP5-M-.5000-BN     | 520890 | \$ 95.70   |
| 1/2     | 1/2                          | 5         | 2     | 4             | SQ      | AP5-L-.5000-SQ     | 520900 | \$ 95.55   |
| 1/2     | 1/2                          | 5         | 2     | 4             | 0.030   | AP5-L-.5000-R.030  | 520910 | \$ 105.59  |
| 1/2     | 1/2                          | 5         | 2     | 4             | 0.060   | AP5-L-.5000-R.060  | 520920 | \$ 105.59  |
| 1/2     | 1/2                          | 5         | 2     | 4             | BALL    | AP5-L-.5000-BN     | 520930 | \$ 112.97  |
| 1/2     | 1/2                          | 5         | 3     | 6             | SQ      | AP5-XL.5000-SQ     | 520940 | \$ 147.81  |
| 1/2     | 1/2                          | 5         | 3     | 6             | 0.030   | AP5-XL-.5000-R.030 | 520950 | \$ 161.09  |
| 1/2     | 1/2                          | 5         | 3     | 6             | 0.060   | AP5-XL.5000-R.060  | 520960 | \$ 161.09  |
| 5/8     | 5/8                          | 5         | 3/4   | 3             | SQ      | AP5-S-.6250-SQ     | 520970 | \$ 127.49  |
| 5/8     | 5/8                          | 5         | 3/4   | 3             | 0.030   | AP5-S-.6250-R.030  | 520980 | \$ 140.35  |
| 5/8     | 5/8                          | 5         | 1-1/4 | 3-1/2         | SQ      | AP5-.6250-SQ       | 520990 | \$ 142.17  |
| 5/8     | 5/8                          | 5         | 1-1/4 | 3-1/2         | 0.030   | AP5-.6250-R.030    | 521000 | \$ 155.95  |
| 5/8     | 5/8                          | 5         | 1-1/4 | 3-1/2         | 0.060   | AP5-.6250-R.060    | 521010 | \$ 155.95  |
| 5/8     | 5/8                          | 5         | 1-1/4 | 3-1/2         | BALL    | AP5-.6250-BN       | 521020 | \$ 169.43  |
| 5/8     | 5/8                          | 5         | 2-1/4 | 5             | SQ      | AP5-L-.6250-SQ     | 521030 | \$ 188.92  |
| 5/8     | 5/8                          | 5         | 2-1/4 | 5             | 0.030   | AP5-L-.6250-R.030  | 521040 | \$ 205.63  |
| 5/8     | 5/8                          | 5         | 2-1/4 | 5             | 0.060   | AP5-L-.6250-R.060  | 521050 | \$ 205.63  |
| 5/8     | 5/8                          | 5         | 2-1/4 | 5             | BALL    | AP5-L-.6250-BN     | 521060 | \$ 223.40  |
| 5/8     | 5/8                          | 5         | 3     | 6             | SQ      | AP5-XL.6250-SQ     | 521070 | \$ 217.12  |
| 5/8     | 5/8                          | 5         | 3     | 6             | 0.030   | AP5-XL-.6250-R.030 | 521080 | \$ 235.59  |
| 5/8     | 5/8                          | 5         | 3     | 6             | 0.060   | AP5-XL-.6250-R.060 | 521090 | \$ 235.59  |
| 3/4     | 3/4                          | 5         | 1     | 3             | SQ      | AP5-S-.7500-SQ     | 521100 | \$ 182.52  |
| 3/4     | 3/4                          | 5         | 1     | 3             | 0.030   | AP5-S-.7500-R.030  | 521110 | \$ 199.61  |
| 3/4     | 3/4                          | 5         | 1-1/2 | 4             | SQ      | AP5-.7500-SQ       | 521120 | \$ 206.18  |
| 3/4     | 3/4                          | 5         | 1-1/2 | 4             | 0.030   | AP5-.7500-R.030    | 521130 | \$ 224.74  |
| 3/4     | 3/4                          | 5         | 1-1/2 | 4             | 0.060   | AP5-.7500-R.060    | 521140 | \$ 224.74  |
| 3/4     | 3/4                          | 5         | 1-1/2 | 4             | BALL    | AP5-.7500-BN       | 521150 | \$ 244.84  |
| 3/4     | 3/4                          | 5         | 2-1/4 | 5             | SQ      | AP5-L-.7500-SQ     | 521160 | \$ 258.68  |
| 3/4     | 3/4                          | 5         | 2-1/4 | 5             | 0.030   | AP5-L-.7500-R.030  | 521170 | \$ 280.51  |
| 3/4     | 3/4                          | 5         | 2-1/4 | 5             | 0.060   | AP5-L-.7500-R.060  | 521180 | \$ 280.51  |
| 3/4     | 3/4                          | 5         | 2-1/4 | 5             | BALL    | AP5-L-.7500-BN     | 521190 | \$ 304.84  |

# Ferrous Alloys



|         |                              |           |       |               |         |                    |        |            |
|---------|------------------------------|-----------|-------|---------------|---------|--------------------|--------|------------|
| Carbide | 5 Flute<br>Center<br>Cutting | 37° Helix | TiAIN | +.000 / -.002 | HRC <54 | Series: AP5        |        |            |
| CUT DIA | SHANK DIA                    | FLUTES    | LOC   | OAL           | CORNER  | PART NAME          | EDP    | PRICE LIST |
| 3/4     | 3/4                          | 5         | 3     | 6             | SQ      | AP5-XL-.7500-SQ    | 521200 | \$ 327.67  |
| 3/4     | 3/4                          | 5         | 3     | 6             | 0.030   | AP5-XL-.7500-R.030 | 521210 | \$ 353.84  |
| 3/4     | 3/4                          | 5         | 3     | 6             | 0.060   | AP5-XL-.7500-R.060 | 521220 | \$ 353.84  |

| Material Guide |                              |                                                                                                      | Condition                                |     | SFM | FL     | CHIP PER TOOTH |        |        |        |        |        |        |        |        |    |
|----------------|------------------------------|------------------------------------------------------------------------------------------------------|------------------------------------------|-----|-----|--------|----------------|--------|--------|--------|--------|--------|--------|--------|--------|----|
|                |                              |                                                                                                      |                                          |     |     |        | 1/8"           | 3/16"  | 1/4"   | 5/16"  | 3/8"   | 7/16"  | 1/2"   | 5/8"   | 3/4"   | 1" |
| ISO-M          | Precipitation                | 13-8, 15-5, 17-4PH                                                                                   | Slotting @ ≤ .5 x D                      | 250 | 5   | 0.0007 | 0.0012         | 0.0014 | 0.0019 | 0.0022 | 0.0026 | 0.0029 | 0.0036 | 0.0043 | 0.0058 |    |
|                |                              |                                                                                                      | Pro filing @ 2 x D Axial / ≤ .3 D Radial | 325 | 5   | 0.0010 | 0.0016         | 0.0020 | 0.0026 | 0.0029 | 0.0035 | 0.0039 | 0.0049 | 0.0059 | 0.0079 |    |
|                | Austenitic                   | 302, 303, 304L, 316L                                                                                 | Slotting @ ≤ .5 x D                      | 275 | 5   | 0.0009 | 0.0013         | 0.0017 | 0.0023 | 0.0026 | 0.0031 | 0.0035 | 0.0043 | 0.0052 | 0.0069 |    |
|                |                              |                                                                                                      | Pro filing @ 2 x D Axial / ≤ .3 D Radial | 350 | 5   | 0.0012 | 0.0017         | 0.0023 | 0.0030 | 0.0036 | 0.0043 | 0.0048 | 0.0059 | 0.0071 | 0.0094 |    |
|                | Martensitic                  | 403, 410, 416                                                                                        | Slotting @ ≤ .5 x D                      | 300 | 5   | 0.0009 | 0.0014         | 0.0019 | 0.0024 | 0.0027 | 0.0033 | 0.0038 | 0.0046 | 0.0055 | 0.0074 |    |
|                |                              |                                                                                                      | Pro filing @ 2 x D Axial / ≤ .3 D Radial | 375 | 5   | 0.0013 | 0.0020         | 0.0025 | 0.0032 | 0.0038 | 0.0045 | 0.0051 | 0.0064 | 0.0075 | 0.0101 |    |
| ISO-S          | Cobalt Base                  | Stellite, Haynes 25, 188, X-40, L-605                                                                | Slotting @ ≤ .5 x D                      | 110 | 5   | 0.0004 | 0.0006         | 0.0007 | 0.0009 | 0.0012 | 0.0014 | 0.0016 | 0.0020 | 0.0023 | 0.0032 |    |
|                |                              |                                                                                                      | Pro filing @ 2 x D Axial / ≤ .3 D Radial | 150 | 5   | 0.0004 | 0.0006         | 0.0010 | 0.0013 | 0.0010 | 0.0012 | 0.0019 | 0.0023 | 0.0029 | 0.0038 |    |
|                | Nickel Base                  | Inconel 600, 625, 718, Nickel 200, 270, Invar, Monel 400, 405, K-Monel, PermaNickel 300, Inconel 600 | Slotting @ ≤ .5 x D                      | 75  | 5   | 0.0006 | 0.0004         | 0.0010 | 0.0013 | 0.0014 | 0.0017 | 0.0025 | 0.0023 | 0.0038 | 0.0038 |    |
|                |                              |                                                                                                      | Pro filing @ 2 x D Axial / ≤ .3 D Radial | 115 | 5   | 0.0006 | 0.0006         | 0.0010 | 0.0013 | 0.0016 | 0.0019 | 0.0026 | 0.0026 | 0.0032 | 0.0032 |    |
|                | Iron Base                    | Inconel 800-802, Multimet N-155,Timken 16-26-6                                                       | Slotting @ ≤ .5 x D                      | 95  | 5   | 0.0006 | 0.0007         | 0.0013 | 0.0017 | 0.0020 | 0.0024 | 0.0027 | 0.0033 | 0.0040 | 0.0053 |    |
|                |                              |                                                                                                      | Pro filing @ 2 x D Axial / ≤ .3 D Radial | 130 | 5   | 0.0006 | 0.0007         | 0.0014 | 0.0019 | 0.0023 | 0.0028 | 0.0030 | 0.0038 | 0.0045 | 0.0061 |    |
| ISO-P          | High Strength Steels         | 4140, 4340, 52100                                                                                    | Slotting @ ≤ .5 x D                      | 300 | 5   | 0.0009 | 0.0013         | 0.0019 | 0.0024 | 0.0027 | 0.0033 | 0.0038 | 0.0046 | 0.0055 | 0.0074 |    |
|                |                              |                                                                                                      | Pro filing @ 2 x D Axial / ≤ .3 D Radial | 375 | 5   | 0.0013 | 0.0019         | 0.0025 | 0.0032 | 0.0038 | 0.0045 | 0.0051 | 0.0064 | 0.0075 | 0.0101 |    |
|                | High Alloy Steels Mold & Die | A-2, P20, 01, 02, D2, H-13                                                                           | Slotting @ ≤ .5 x D                      | 275 | 5   | 0.0007 | 0.0012         | 0.0016 | 0.0021 | 0.0023 | 0.0028 | 0.0032 | 0.0039 | 0.0046 | 0.0062 |    |
|                |                              |                                                                                                      | Pro filing @ 2 x D Axial / ≤ .3 D Radial | 350 | 5   | 0.0010 | 0.0016         | 0.0022 | 0.0028 | 0.0032 | 0.0038 | 0.0042 | 0.0053 | 0.0064 | 0.0085 |    |
|                | Medium Alloy Steels          | 200, 250, 300                                                                                        | Slotting @ ≤ .75 x D                     | 325 | 5   | 0.0007 | 0.0007         | 0.0017 | 0.0023 | 0.0029 | 0.0035 | 0.0036 | 0.0051 | 0.0058 | 0.0072 |    |
|                |                              |                                                                                                      | Pro filing @ 2 x D Axial / ≤ .3 D Radial | 400 | 5   | 0.0007 | 0.0007         | 0.0022 | 0.0028 | 0.0035 | 0.0042 | 0.0043 | 0.0058 | 0.0072 | 0.0087 |    |
| ISO-K          | Ductile Iron                 | ASTM A536, ASTM 897                                                                                  | Slotting @ 1 x D                         | 400 | 5   | 0.0007 | 0.0012         | 0.0014 | 0.0019 | 0.0022 | 0.0026 | 0.0029 | 0.0036 | 0.0043 | 0.0058 |    |
|                |                              |                                                                                                      | Pro filing @ 2 x D Axial / ≤ .3 D Radial | 550 | 5   | 0.0010 | 0.0014         | 0.0020 | 0.0026 | 0.0029 | 0.0035 | 0.0039 | 0.0049 | 0.0059 | 0.0079 |    |
|                | Cast Iron                    | SAE J431, ASTM A48                                                                                   | Slotting @ 1 x D                         | 450 | 5   | 0.0009 | 0.0014         | 0.0017 | 0.0023 | 0.0026 | 0.0031 | 0.0035 | 0.0043 | 0.0052 | 0.0069 |    |
|                |                              |                                                                                                      | Pro filing @ 2 x D Axial / ≤ .3 D Radial | 600 | 5   | 0.0012 | 0.0017         | 0.0023 | 0.0030 | 0.0036 | 0.0043 | 0.0048 | 0.0059 | 0.0071 | 0.0094 |    |
|                | Titanium Alloys              | 6AL-4V, ASTM 1, 2, 3, 6AL-2S                                                                         | Slotting @ ≤ .5 x D                      | 175 | 5   | 0.0007 | 0.0010         | 0.0013 | 0.0017 | 0.0020 | 0.0024 | 0.0026 | 0.0033 | 0.0040 | 0.0053 |    |
|                |                              |                                                                                                      | Pro filing @ 2 x D Axial / ≤ .3 D Radial | 275 | 5   | 0.0009 | 0.0014         | 0.0019 | 0.0024 | 0.0027 | 0.0033 | 0.0036 | 0.0045 | 0.0055 | 0.0072 |    |

For 5553, decrease SFM and IPM by 25%

# Ferrous Alloys



| Carbide | 4 Flute Center Cutting | Variable | TiAlN | +.000 / -.002 | HRC <54 | Series: Fe4 |                     |        |            |
|---------|------------------------|----------|-------|---------------|---------|-------------|---------------------|--------|------------|
| CUT DIA | SHANK DIA              | FLUTES   | LBS   | LOC           | OAL     | CORNER      | PART NAME           | EDP    | PRICE LIST |
| 1/16    | 1/8                    | 4        |       | 1/8           | 1-1/2   | SQ          | Fe4-.0625-SQ        | 410000 | \$ 25.30   |
| 1/16    | 1/8                    | 4        |       | 1/8           | 1-1/2   | 0.010       | Fe4-.0625-R.010     | 410010 | \$ 25.82   |
| 3/32    | 1/8                    | 4        |       | 3/16          | 1-1/2   | SQ          | Fe4-.0938-SQ        | 410020 | \$ 25.30   |
| 3/32    | 1/8                    | 4        |       | 3/16          | 1-1/2   | 0.010       | Fe4-.0938-R.010     | 410030 | \$ 25.82   |
| 1/8     | 1/8                    | 4        | 7/8   | 3/16          | 2       | 0.015       | Fe4-.1250-R.015-RN  | 410040 | \$ 27.71   |
| 1/8     | 1/8                    | 4        |       | 1/4           | 1-1/2   | SQ          | Fe4-.1250-S-SQ      | 410050 | \$ 19.79   |
| 1/8     | 1/8                    | 4        |       | 1/4           | 1-1/2   | 0.015       | Fe4-.1250-S-R.015   | 410060 | \$ 20.19   |
| 1/8     | 1/8                    | 4        |       | 1/2           | 1-1/2   | SQ          | Fe4-.1250-SQ        | 410070 | \$ 21.13   |
| 1/8     | 1/8                    | 4        |       | 1/2           | 1-1/2   | 0.015       | Fe4-.1250-R.015     | 410080 | \$ 21.56   |
| 3/16    | 3/16                   | 4        |       | 1/4           | 1-1/2   | SQ          | Fe4-.1875-S-SQ      | 410090 | \$ 22.86   |
| 3/16    | 3/16                   | 4        |       | 1/4           | 1-1/2   | 0.015       | Fe4-.1875-S-R.015   | 410100 | \$ 23.32   |
| 3/16    | 3/16                   | 4        | 3/4   | 1/4           | 3       | 0.015       | Fe4-.1875-R.015-RN  | 410110 | \$ 33.80   |
| 3/16    | 3/16                   | 4        |       | 5/8           | 2       | SQ          | Fe4-.1875-SQ        | 410120 | \$ 25.50   |
| 3/16    | 3/16                   | 4        |       | 5/8           | 2       | 0.015       | Fe4-.1875-R.015     | 410130 | \$ 26.02   |
| 1/4     | 1/4                    | 4        |       | 3/8           | 2       | SQ          | Fe4-.2500-S-SQ      | 410140 | \$ 28.48   |
| 1/4     | 1/4                    | 4        |       | 3/8           | 2       | 0.015       | Fe4-.2500-S-R.015   | 410150 | \$ 29.06   |
| 1/4     | 1/4                    | 4        | 3/4   | 3/8           | 3       | 0.015       | Fe4-.2500-R.015-RN  | 410160 | \$ 47.50   |
| 1/4     | 1/4                    | 4        | 1-1/8 | 3/8           | 3       | 0.015       | Fe4-.2500-R.015-RN1 | 410170 | \$ 47.50   |
| 1/4     | 1/4                    | 4        | 2-1/8 | 3/8           | 4       | 0.015       | Fe4-.2500-R.015-RN2 | 410180 | \$ 54.64   |
| 1/4     | 1/4                    | 4        |       | 3/8           | 2       | 0.030       | Fe4-.2500-S-R.030   | 410190 | \$ 29.06   |
| 1/4     | 1/4                    | 4        | 3/4   | 3/8           | 3       | 0.030       | Fe4-.2500-R.030-RN  | 410200 | \$ 47.50   |
| 1/4     | 1/4                    | 4        | 1-1/8 | 3/8           | 3       | 0.030       | Fe4-.2500-R.030-RN1 | 410210 | \$ 47.50   |
| 1/4     | 1/4                    | 4        | 2-1/8 | 3/8           | 4       | 0.030       | Fe4-.2500-R.030-RN2 | 410220 | \$ 54.64   |
| 1/4     | 1/4                    | 4        |       | 1/2           | 2       | SQ          | Fe4-.2500-T-SQ      | 410225 | \$ 31.39   |
| 1/4     | 1/4                    | 4        |       | 3/4           | 2-1/2   | SQ          | Fe4-.2500-SQ        | 410230 | \$ 33.21   |
| 1/4     | 1/4                    | 4        |       | 3/4           | 2-1/2   | 0.015       | Fe4-.2500-R.015     | 410240 | \$ 33.89   |
| 1/4     | 1/4                    | 4        |       | 3/4           | 2-1/2   | 0.030       | Fe4-.2500-R.030     | 410250 | \$ 33.89   |
| 1/4     | 1/4                    | 4        |       | 1-1/8         | 3       | SQ          | Fe4-.2500-L-SQ      | 410260 | \$ 38.79   |
| 1/4     | 1/4                    | 4        |       | 1-1/8         | 3       | 0.015       | Fe4-.2500-L-R.015   | 410270 | \$ 39.58   |
| 1/4     | 1/4                    | 4        |       | 1-1/8         | 3       | 0.03        | Fe4-.2500-L-R.030   | 410280 | \$ 39.58   |
| 5/16    | 5/16                   | 4        |       | 1/2           | 2       | SQ          | Fe4-.3125-S-SQ      | 410290 | \$ 42.00   |
| 5/16    | 5/16                   | 4        |       | 1/2           | 2       | 0.015       | Fe4-.3125-S-R.015   | 410300 | \$ 42.86   |
| 5/16    | 5/16                   | 4        |       | 1/2           | 2       | 0.03        | Fe4-.3125-S-R.030   | 410310 | \$ 42.86   |
| 5/16    | 5/16                   | 4        |       | 13/16         | 2-1/2   | SQ          | Fe4-.3125-SQ        | 410320 | \$ 43.70   |
| 5/16    | 5/16                   | 4        |       | 13/16         | 2-1/2   | 0.015       | Fe4-.3125-R.015     | 410330 | \$ 44.59   |
| 5/16    | 5/16                   | 4        |       | 13/16         | 2-1/2   | 0.030       | Fe4-.3125-R.030     | 410340 | \$ 44.59   |
| 5/16    | 5/16                   | 4        |       | 1-1/8         | 3       | SQ          | Fe4-.3125-L-SQ      | 410350 | \$ 50.38   |
| 5/16    | 5/16                   | 4        |       | 1-1/8         | 3       | 0.015       | Fe4-.3125-L-R.015   | 410360 | \$ 51.42   |
| 5/16    | 5/16                   | 4        |       | 1-1/8         | 3       | 0.030       | Fe4-.3125-L-R.030   | 410370 | \$ 51.42   |
| 3/8     | 3/8                    | 4        |       | 1/2           | 2       | SQ          | Fe4-.3750-S-SQ      | 410380 | \$ 48.66   |
| 3/8     | 3/8                    | 4        |       | 1/2           | 2       | 0.015       | Fe4-.3750-S-R.015   | 410390 | \$ 49.65   |
| 3/8     | 3/8                    | 4        | 1-1/8 | 1/2           | 3       | 0.015       | Fe4-.3750-R.015-RN1 | 410400 | \$ 67.04   |
| 3/8     | 3/8                    | 4        | 2-1/8 | 1/2           | 4       | 0.015       | Fe4-.3750-R.015-RN2 | 410410 | \$ 77.06   |
| 3/8     | 3/8                    | 4        | 3-1/8 | 1/2           | 6       | 0.015       | Fe4-.3750-R.015-RN3 | 410420 | \$ 95.99   |
| 3/8     | 3/8                    | 4        |       | 1/2           | 2       | 0.03        | Fe4-.3750-S-R.030   | 410430 | \$ 49.65   |

# Ferrous Alloys



| Carbide | 4 Flute Center Cutting | Variable | TiAlN | +.000 / -.002 | HRC <54 | Series: Fe4 |                     |        |            |
|---------|------------------------|----------|-------|---------------|---------|-------------|---------------------|--------|------------|
| CUT DIA | SHANK DIA              | FLUTES   | LBS   | LOC           | OAL     | CORNER      | PART NAME           | EDP    | PRICE LIST |
| 3/8     | 3/8                    | 4        | 1-1/8 | 1/2           | 3       | 0.030       | Fe4-.3750-R.030-RN1 | 410440 | \$ 67.04   |
| 3/8     | 3/8                    | 4        | 2-1/8 | 1/2           | 4       | 0.030       | Fe4-.3750-R.030-RN2 | 410450 | \$ 77.06   |
| 3/8     | 3/8                    | 4        | 3-1/8 | 1/2           | 6       | 0.030       | Fe4-.3750-R.030-RN3 | 410460 | \$ 95.99   |
| 3/8     | 3/8                    | 4        |       | 1             | 2-1/2   | SQ          | Fe4-.3750-SQ        | 410470 | \$ 51.67   |
| 3/8     | 3/8                    | 4        |       | 1             | 2-1/2   | 0.015       | Fe4-.3750-R.015     | 410480 | \$ 52.73   |
| 3/8     | 3/8                    | 4        |       | 1             | 2-1/2   | 0.030       | Fe4-.3750-R.030     | 410490 | \$ 52.73   |
| 3/8     | 3/8                    | 4        |       | 1-1/8         | 3       | SQ          | Fe4-.3750-L-SQ      | 410500 | \$ 61.65   |
| 3/8     | 3/8                    | 4        |       | 1-1/8         | 3       | 0.015       | Fe4-.3750-L-R.015   | 410510 | \$ 62.90   |
| 3/8     | 3/8                    | 4        |       | 1-1/8         | 3       | 0.03        | Fe4-.3750-L-R.030   | 410520 | \$ 62.90   |
| 1/2     | 1/2                    | 4        |       | 5/8           | 2-1/2   | SQ          | Fe4-.5000-S-SQ      | 410530 | \$ 77.21   |
| 1/2     | 1/2                    | 4        |       | 5/8           | 2-1/2   | 0.015       | Fe4-.5000-S-R.015   | 410540 | \$ 78.78   |
| 1/2     | 1/2                    | 4        | 1-1/2 | 5/8           | 4       | 0.015       | Fe4-.5000-R.015-RN1 | 410550 | \$ 143.65  |
| 1/2     | 1/2                    | 4        | 2-1/4 | 5/8           | 4       | 0.015       | Fe4-.5000-R.015-RN2 | 410560 | \$ 160.38  |
| 1/2     | 1/2                    | 4        | 3-3/8 | 5/8           | 6       | 0.015       | Fe4-.5000-R.015-RN3 | 410570 | \$ 177.10  |
| 1/2     | 1/2                    | 4        |       | 5/8           | 2-1/2   | 0.030       | Fe4-.5000-S-R.030   | 410580 | \$ 78.78   |
| 1/2     | 1/2                    | 4        | 1-1/2 | 5/8           | 4       | 0.030       | Fe4-.5000-R.030-RN1 | 410590 | \$ 143.65  |
| 1/2     | 1/2                    | 4        | 2-1/4 | 5/8           | 4       | 0.03        | Fe4-.5000-R.030-RN2 | 410600 | \$ 160.38  |
| 1/2     | 1/2                    | 4        | 3-3/8 | 5/8           | 6       | 0.030       | Fe4-.5000-R.030-RN3 | 410610 | \$ 177.10  |
| 1/2     | 1/2                    | 4        |       | 5/8           | 2-1/2   | 0.060       | Fe4-.5000-S-R.060   | 410620 | \$ 78.78   |
| 1/2     | 1/2                    | 4        | 3-3/8 | 5/8           | 6       | 0.060       | Fe4-.5000-R.060-RN3 | 410630 | \$ 177.10  |
| 1/2     | 1/2                    | 4        |       | 1             | 3       | SQ          | Fe4-.5000-SQ        | 410640 | \$ 84.76   |
| 1/2     | 1/2                    | 4        |       | 1             | 3       | 0.015       | Fe4-.5000-R.015     | 410650 | \$ 86.49   |
| 1/2     | 1/2                    | 4        |       | 1             | 3       | 0.03        | Fe4-.5000-R.030     | 410660 | \$ 86.49   |
| 1/2     | 1/2                    | 4        |       | 1             | 3       | 0.060       | Fe4-.5000-R.060     | 410670 | \$ 86.49   |
| 1/2     | 1/2                    | 4        |       | 1-1/4         | 3       | SQ          | Fe4-.5000-M-SQ      | 410680 | \$ 96.40   |
| 1/2     | 1/2                    | 4        |       | 1-1/4         | 3       | 0.015       | Fe4-.5000-M-R.015   | 410690 | \$ 98.37   |
| 1/2     | 1/2                    | 4        |       | 1-1/4         | 3       | 0.030       | Fe4-.5000-M-R.030   | 410700 | \$ 98.37   |
| 1/2     | 1/2                    | 4        |       | 1-1/4         | 3       | 0.060       | Fe4-.5000-M-R.060   | 410710 | \$ 98.37   |
| 1/2     | 1/2                    | 4        |       | 1-1/2         | 4       | SQ          | Fe4-.5000-T-SQ      | 410720 | \$ 108.03  |
| 1/2     | 1/2                    | 4        |       | 1-1/2         | 4       | 0.015       | Fe4-.5000-T-R.015   | 410730 | \$ 110.24  |
| 1/2     | 1/2                    | 4        |       | 1-1/2         | 4       | 0.030       | Fe4-.5000-T-R.030   | 410740 | \$ 110.24  |
| 1/2     | 1/2                    | 4        |       | 1-1/2         | 4       | 0.060       | Fe4-.5000-T-R.060   | 410750 | \$ 110.24  |
| 1/2     | 1/2                    | 4        |       | 2             | 4       | SQ          | Fe4-.5000-L-SQ      | 410760 | \$ 135.05  |
| 1/2     | 1/2                    | 4        |       | 2             | 4       | 0.015       | Fe4-.5000-L-R.015   | 410770 | \$ 137.80  |
| 1/2     | 1/2                    | 4        |       | 2             | 4       | 0.030       | Fe4-.5000-L-R.030   | 410780 | \$ 137.80  |
| 1/2     | 1/2                    | 4        |       | 2             | 4       | 0.060       | Fe4-.5000-L-R.060   | 410790 | \$ 137.80  |
| 5/8     | 5/8                    | 4        |       | 3/4           | 3       | SQ          | Fe4-.6250-S-SQ      | 410800 | \$ 139.98  |
| 5/8     | 5/8                    | 4        |       | 3/4           | 3       | 0.030       | Fe4-.6250-S-R.030   | 410810 | \$ 142.84  |
| 5/8     | 5/8                    | 4        | 1-5/8 | 3/4           | 5       | 0.03        | Fe4-.6250-R.030-RN1 | 410820 | \$ 246.22  |
| 5/8     | 5/8                    | 4        |       | 3/4           | 3       | 0.060       | Fe4-.6250-S-R.060   | 410830 | \$ 142.84  |
| 5/8     | 5/8                    | 4        |       | 1-1/4         | 3-1/2   | SQ          | Fe4-.6250-SQ        | 410840 | \$ 147.70  |
| 5/8     | 5/8                    | 4        |       | 1-1/4         | 3-1/2   | 0.030       | Fe4-.6250-R.030     | 410850 | \$ 150.72  |
| 5/8     | 5/8                    | 4        |       | 1-1/4         | 3-1/2   | 0.060       | Fe4-.6250-R.060     | 410860 | \$ 150.72  |
| 5/8     | 5/8                    | 4        |       | 2-1/4         | 5       | SQ          | Fe4-.6250-L-SQ      | 410870 | \$ 186.04  |
| 5/8     | 5/8                    | 4        |       | 2-1/4         | 5       | 0.030       | Fe4-.6250-L-R.030   | 410880 | \$ 189.84  |

# Ferrous Alloys



| Carbide | 4 Flute Center Cutting | Variable | TiAIN | +.000 / -.002 | HRC <54 | Series: Fe4 |                     |        |            |
|---------|------------------------|----------|-------|---------------|---------|-------------|---------------------|--------|------------|
| CUT DIA | SHANK DIA              | FLUTES   | LBS   | LOC           | OAL     | CORNER      | PART NAME           | EDP    | PRICE LIST |
| 5/8     | 5/8                    | 4        |       | 2-1/4         | 5       | 0.060       | Fe4-.6250-L-R.060   | 410890 | \$ 189.84  |
| 3/4     | 3/4                    | 4        |       | 7/8           | 3       | SQ          | Fe4-.7500-S-SQ      | 410900 | \$ 207.05  |
| 3/4     | 3/4                    | 4        |       | 7/8           | 3       | 0.030       | Fe4-.7500-S-R.030   | 410910 | \$ 211.27  |
| 3/4     | 3/4                    | 4        | 2     | 7/8           | 5       | 0.03        | Fe4-.7500-R.030-RN2 | 410920 | \$ 288.29  |
| 3/4     | 3/4                    | 4        |       | 7/8           | 3       | 0.060       | Fe4-.7500-S-R.060   | 410930 | \$ 211.27  |
| 3/4     | 3/4                    | 4        |       | 1-1/2         | 4       | SQ          | Fe4-.7500-SQ        | 410940 | \$ 222.28  |
| 3/4     | 3/4                    | 4        |       | 1-1/2         | 4       | 0.030       | Fe4-.7500-R.030     | 410950 | \$ 226.82  |
| 3/4     | 3/4                    | 4        |       | 1-1/2         | 4       | 0.060       | Fe4-.7500-R.060     | 410960 | \$ 226.82  |
| 3/4     | 3/4                    | 4        |       | 1-1/2         | 4       | 0.120       | Fe4-.7500-R.120     | 410970 | \$ 226.82  |
| 3/4     | 3/4                    | 4        |       | 2-1/4         | 5       | SQ          | Fe4-.7500-L-SQ      | 410980 | \$ 263.90  |
| 3/4     | 3/4                    | 4        |       | 2-1/4         | 5       | 0.030       | Fe4-.7500-L-R.030   | 410990 | \$ 269.29  |
| 3/4     | 3/4                    | 4        |       | 2-1/4         | 5       | 0.060       | Fe4-.7500-L-R.060   | 411000 | \$ 269.29  |
| 3/4     | 3/4                    | 4        |       | 2-1/4         | 5       | 0.120       | Fe4-.7500-L-R.120   | 411010 | \$ 269.29  |

| Material Guide |                                      |                                | Condition                           | FL | CHIP PER TOOTH |        |        |        |        | SFM  | FL | CHIP PER TOOTH |           |           |           |           |
|----------------|--------------------------------------|--------------------------------|-------------------------------------|----|----------------|--------|--------|--------|--------|------|----|----------------|-----------|-----------|-----------|-----------|
|                |                                      |                                |                                     |    | 1/8"           | 1/4"   | 3/8"   | 1/2"   | 5/8"   |      |    | 1/8"           | 1/4"      | 3/8"      | 1/2"      | 5/8"      |
| ISO-M          | Precipitation <35 HRc                | 13-8, 15-5, 17-4PH             | Axial Depth Max & 75% Cutting Width | 2  | 0.0070         | 0.0110 | 0.0180 | 0.0220 | 0.0260 | 725  | 4  | 0.0070         | 0.0110    | 0.0180    | 0.0220    | 0.0260    |
|                | Precipitation >35 HRc                | 13-8, 15-5, 17-4PH             | Axial Depth Max & 75% Cutting Width | 2  | 0.0060         | 0.0090 | 0.0140 | 0.0170 | 0.0220 | 525  | 4  | 0.0060         | 0.0090    | 0.0140    | 0.0170    | 0.0220    |
|                | Austenitic <28 HRc                   | 302, 303, 304L, 316L           | Axial Depth Max & 75% Cutting Width | 2  | 0.0070         | 0.0100 | 0.0150 | 0.0220 | 0.0260 | 350  | 4  | 0.0070         | 0.0100    | 0.0150    | 0.0220    | 0.0260    |
| ISO-P          | High Strength Steels                 | 4140, 4340, 52100              | Axial Depth Max & 75% Cutting Width | 2  | 0.0070         | 0.0110 | 0.0180 | 0.0220 | 0.0260 | 1050 | 4  | 0.0070         | 0.0110    | 0.0180    | 0.0220    | 0.0260    |
|                | High Alloy Steels Mold & Die <50 HRc | A-2, P20, 01, 02, 06, D2, H-13 | Axial Depth Max & 75% Cutting Width | 2  | 0.0070         | 0.0100 | 0.0170 | 0.0200 | 0.0220 | 1200 | 4  | 0.0070         | 0.0100    | 0.0170    | 0.0200    | 0.0220    |
|                | High Alloy Steels Mold & Die >50 HRc | A-2, P20, 01, 02, 06, D2, H-13 | Axial Depth Max & 75% Cutting Width | 2  | 0.0060         | 0.0090 | 0.0130 | 0.0180 | 0.0200 | 600  | 4  | 0.0060         | 0.0090    | 0.0130    | 0.0180    | 0.0200    |
|                | Medium Alloy Steels                  | 200, 250, 300                  | Axial Depth Max & 75% Cutting Width | 2  | 0.0080         | 0.0120 | 0.0190 | 0.0250 | 0.0280 | 1350 | 4  | 0.0080         | 0.0120    | 0.0190    | 0.0250    | 0.0280    |
| ISO-K          | Cast Iron <40 HRc Grey Cast Iron     | SAE J431, ASTM A48             | Axial Depth Max & 75% Cutting Width | 2  | 0.0060         | 0.0100 | 0.0160 | 0.0200 | 0.0220 | 2650 | 4  | 0.0060         | 0.0100    | 0.0160    | 0.0200    | 0.0220    |
|                | Cast Iron >40 HRc Grey Cast Iron     | SAE J431, ASTM A48             | Axial Depth Max & 75% Cutting Width | 2  | 0.0060         | 0.0100 | 0.0160 | 0.0200 | 0.0220 | 1200 | 4  | 0.0060         | 0.0100    | 0.0160    | 0.0200    | 0.0220    |
| ISO-S          | Titanium Alloys                      | 6AL-4V, ASTM 1, 2, 3, 6AL-2S   | Axial Depth Max & 75% Cutting Width | 2  | 0.0060         | 0.0100 | 0.0160 | 0.0200 | 0.0220 | 450  | 4  | .003-.006      | .006-.011 | .009-.016 | .012-.022 | .012-.024 |

| Material Guide |                                      |                                | Condition                           | FL | CHIP PER TOOTH - METRIC |        |        |        |        | M/ MIN | FL | CHIP PER TOOTH - METRIC |        |        |        |        |
|----------------|--------------------------------------|--------------------------------|-------------------------------------|----|-------------------------|--------|--------|--------|--------|--------|----|-------------------------|--------|--------|--------|--------|
|                |                                      |                                |                                     |    | 3mm                     | 6mm    | 8mm    | 10mm   | 12mm   |        |    | 3mm                     | 6mm    | 8mm    | 10mm   | 12mm   |
| ISO-M          | Precipitation <35 HRc                | 13-8, 15-5, 17-4PH             | Axial Depth Max & 75% Cutting Width | 2  | 0.1700                  | 0.2600 | 0.3700 | 0.4800 | 0.5300 | 225    | 4  | 0.1700                  | 0.2600 | 0.3700 | 0.4800 | 0.5300 |
|                | Precipitation >35 HRc                | 13-8, 15-5, 17-4PH             | Axial Depth Max & 75% Cutting Width | 2  | 0.1400                  | 0.2100 | 0.2900 | 0.3700 | 0.4100 | 160    | 4  | 0.1400                  | 0.2100 | 0.2900 | 0.3700 | 0.4100 |
|                | Austenitic <28 HRc                   | 302, 303, 304L, 316L           | Axial Depth Max & 75% Cutting Width | 2  | 0.1700                  | 0.2400 | 0.3200 | 0.4000 | 0.5300 | 100    | 4  | 0.1700                  | 0.2400 | 0.3200 | 0.4000 | 0.5300 |
| ISO-P          | High Strength Steels                 | 4140, 4340, 52100              | Axial Depth Max & 75% Cutting Width | 2  | 0.1700                  | 0.2600 | 0.3700 | 0.4800 | 0.5300 | 300    | 4  | 0.1700                  | 0.2600 | 0.3700 | 0.4800 | 0.5300 |
|                | High Alloy Steels Mold & Die <50 HRc | A-2, P20, 01, 02, 06, D2, H-13 | Axial Depth Max & 75% Cutting Width | 2  | 0.1900                  | 0.2900 | 0.4000 | 0.5100 | 0.6000 | 385    | 4  | 0.1900                  | 0.2900 | 0.4000 | 0.5100 | 0.6000 |
|                | High Alloy Steels Mold & Die >50 HRc | A-2, P20, 01, 02, 06, D2, H-13 | Axial Depth Max & 75% Cutting Width | 2  | 0.1700                  | 0.2400 | 0.3500 | 0.4500 | 0.4800 | 320    | 4  | 0.1700                  | 0.2400 | 0.3500 | 0.4500 | 0.4800 |
|                | Medium Alloy Steels                  | 200, 250, 300                  | Axial Depth Max & 75% Cutting Width | 2  | 0.1400                  | 0.2100 | 0.2800 | 0.3500 | 0.4300 | 165    | 4  | 0.1400                  | 0.2100 | 0.2800 | 0.3500 | 0.4300 |
| ISO-K          | Cast Iron <40 HRc Grey Cast Iron     | SAE J431, ASTM A48             | Axial Depth Max & 75% Cutting Width | 2  | 0.1400                  | 0.2400 | 0.3300 | 0.4300 | 0.4800 | 700    | 4  | 0.1400                  | 0.2400 | 0.3300 | 0.4300 | 0.4800 |
|                | Cast Iron >40 HRc Grey Cast Iron     | SAE J431, ASTM A48             | Axial Depth Max & 75% Cutting Width | 2  | 0.1400                  | 0.2400 | 0.3300 | 0.4300 | 0.4800 | 325    | 4  | 0.1400                  | 0.2400 | 0.3300 | 0.4300 | 0.4800 |
| ISO-S          | Titanium Alloys                      | 6AL-4V, ASTM 1, 2, 3, 6AL-2S   | Axial Depth Max & 75% Cutting Width | 2  | 0.1400                  | 0.2400 | 0.3300 | 0.4300 | 0.4800 | 155    | 4  | 0.1400                  | 0.2400 | 0.3300 | 0.4300 | 0.4800 |

# Ferrous Alloys



| Carbide | 5 Flute Non-Center Cutting | Variable | TiAlN | +.000 / -.002 | HRC <54 | Series: Fe5 |                     |        |            |
|---------|----------------------------|----------|-------|---------------|---------|-------------|---------------------|--------|------------|
| CUT DIA | SHANK DIA                  | FLUTES   | LBS   | LOC           | OAL     | CORNER      | PART NAME           | EDP    | PRICE LIST |
| 3/32    | 1/8                        | 5        |       | 3/16          | 1-1/2   | SQ          | Fe5-.0938-SQ        | 510000 | \$ 25.30   |
| 1/8     | 1/8                        | 5        |       | 1/4           | 1-1/2   | SQ          | Fe5-.1250-S-SQ      | 510010 | \$ 19.79   |
| 1/8     | 1/8                        | 5        |       | 1/4           | 1-1/2   | 0.015       | Fe5-.1250-S-R.015   | 510020 | \$ 20.19   |
| 1/8     | 1/8                        | 5        |       | 1/2           | 2       | SQ          | Fe5-.1250-SQ        | 510030 | \$ 21.13   |
| 1/8     | 1/8                        | 5        |       | 1/2           | 2       | 0.015       | Fe5-.1250-R.015     | 510040 | \$ 21.56   |
| 3/16    | 3/16                       | 5        |       | 1/4           | 1-1/2   | SQ          | Fe5-.1875-S-SQ      | 510050 | \$ 22.86   |
| 3/16    | 3/16                       | 5        |       | 1/4           | 1-1/2   | 0.015       | Fe5-.1875-S-R.015   | 510060 | \$ 23.32   |
| 3/16    | 3/16                       | 5        |       | 5/8           | 2       | SQ          | Fe5-.1875-SQ        | 510070 | \$ 25.50   |
| 3/16    | 3/16                       | 5        |       | 5/8           | 2       | 0.015       | Fe5-.1875-R.015     | 510080 | \$ 26.02   |
| 1/4     | 1/4                        | 5        |       | 3/8           | 2       | SQ          | Fe5-.2500-S-SQ      | 510090 | \$ 28.48   |
| 1/4     | 1/4                        | 5        |       | 3/8           | 2       | 0.015       | Fe5-.2500-S-R.015   | 510100 | \$ 29.06   |
| 1/4     | 1/4                        | 5        |       | 3/8           | 2       | 0.030       | Fe5-.2500-S-R.030   | 510110 | \$ 29.06   |
| 1/4     | 1/4                        | 5        |       | 3/4           | 2-1/2   | SQ          | Fe5-.2500-SQ        | 510120 | \$ 33.21   |
| 1/4     | 1/4                        | 5        |       | 3/4           | 2-1/2   | 0.015       | Fe5-.2500-R.015     | 510130 | \$ 33.89   |
| 1/4     | 1/4                        | 5        |       | 3/4           | 2-1/2   | 0.030       | Fe5-.2500-R.030     | 510140 | \$ 33.89   |
| 5/16    | 5/16                       | 5        |       | 1/2           | 2       | SQ          | Fe5-.3125-S-SQ      | 510150 | \$ 42.00   |
| 5/16    | 5/16                       | 5        |       | 1/2           | 2       | 0.015       | Fe5-.3125-S-R.015   | 510160 | \$ 42.86   |
| 5/16    | 5/16                       | 5        |       | 1/2           | 2       | 0.03        | Fe5-.3125-S-R.030   | 510170 | \$ 42.86   |
| 5/16    | 5/16                       | 5        |       | 13/16         | 2-1/2   | SQ          | Fe5-.3125-SQ        | 510180 | \$ 43.70   |
| 5/16    | 5/16                       | 5        |       | 13/16         | 2-1/2   | 0.015       | Fe5-.3125-R.015     | 510190 | \$ 44.59   |
| 5/16    | 5/16                       | 5        |       | 13/16         | 2-1/2   | 0.030       | Fe5-.3125-R.030     | 510200 | \$ 44.59   |
| 3/8     | 3/8                        | 5        |       | 1/2           | 2       | SQ          | Fe5-.3750-S-SQ      | 510210 | \$ 48.66   |
| 3/8     | 3/8                        | 5        | 1-7/8 | 1/2           | 3       | SQ          | Fe5-.3750-SQ-RN1    | 510220 | \$ 65.70   |
| 3/8     | 3/8                        | 5        |       | 1/2           | 2       | 0.015       | Fe5-.3750-S-R.015   | 510230 | \$ 49.65   |
| 3/8     | 3/8                        | 5        | 1-7/8 | 1/2           | 3       | 0.015       | Fe5-.3750-R.015-RN1 | 510240 | \$ 67.04   |
| 3/8     | 3/8                        | 5        |       | 1/2           | 2       | 0.030       | Fe5-.3750-S-R.030   | 510250 | \$ 49.65   |
| 3/8     | 3/8                        | 5        | 1-7/8 | 1/2           | 3       | 0.030       | Fe5-.3750-R.030-RN1 | 510260 | \$ 67.04   |
| 3/8     | 3/8                        | 5        |       | 1             | 2-1/2   | SQ          | Fe5-.3750-SQ        | 510270 | \$ 52.73   |
| 3/8     | 3/8                        | 5        |       | 1             | 2-1/2   | 0.015       | Fe5-.3750-R.015     | 510280 | \$ 52.73   |
| 3/8     | 3/8                        | 5        |       | 1             | 2-1/2   | 0.03        | Fe5-.3750-R.030     | 510290 | \$ 52.73   |
| 1/2     | 1/2                        | 5        |       | 5/8           | 2-1/2   | SQ          | Fe5-.5000-S-SQ      | 510300 | \$ 77.21   |
| 1/2     | 1/2                        | 5        |       | 5/8           | 2-1/2   | 0.015       | Fe5-.5000-S-R.015   | 510310 | \$ 78.78   |
| 1/2     | 1/2                        | 5        | 1-1/2 | 5/8           | 4       | 0.015       | Fe5-.5000-R.015-RN1 | 510320 | \$ 143.65  |
| 1/2     | 1/2                        | 5        | 2-1/4 | 5/8           | 4       | 0.015       | Fe5-.5000-R.015-RN2 | 510330 | \$ 160.38  |
| 1/2     | 1/2                        | 5        |       | 5/8           | 2-1/2   | 0.030       | Fe5-.5000-S-R.030   | 510340 | \$ 78.78   |
| 1/2     | 1/2                        | 5        | 1-1/2 | 5/8           | 4       | 0.030       | Fe5-.5000-R.030-RN1 | 510350 | \$ 143.65  |
| 1/2     | 1/2                        | 5        | 2-1/4 | 5/8           | 4       | 0.03        | Fe5-.5000-R.030-RN2 | 510360 | \$ 160.38  |
| 1/2     | 1/2                        | 5        |       | 5/8           | 2-1/2   | 0.060       | Fe5-.5000-S-R.060   | 510370 | \$ 78.78   |
| 1/2     | 1/2                        | 5        | 1-1/2 | 5/8           | 4       | 0.060       | Fe5-.5000-R.060-RN1 | 510380 | \$ 143.65  |
| 1/2     | 1/2                        | 5        | 2-1/4 | 5/8           | 4       | 0.060       | Fe5-.5000-R.060-RN2 | 510390 | \$ 160.38  |
| 1/2     | 1/2                        | 5        |       | 1             | 3       | SQ          | Fe5-.5000-SQ        | 510400 | \$ 84.76   |
| 1/2     | 1/2                        | 5        |       | 1             | 3       | 0.015       | Fe5-.5000-R.015     | 510410 | \$ 86.49   |
| 1/2     | 1/2                        | 5        |       | 1             | 3       | 0.030       | Fe5-.5000-R.030     | 510420 | \$ 86.49   |
| 1/2     | 1/2                        | 5        |       | 1             | 3       | 0.060       | Fe5-.5000-R.060     | 510430 | \$ 86.49   |
| 1/2     | 1/2                        | 5        |       | 1-1/4         | 3       | SQ          | Fe5-.5000-M-SQ      | 510440 | \$ 96.40   |

# Ferrous Alloys



| Carbide | 5 Flute Non-Center Cutting | Variable | TiAlN | +.000 / -.002 | HRC <54 | Series: Fe5 |                     |        |            |
|---------|----------------------------|----------|-------|---------------|---------|-------------|---------------------|--------|------------|
| CUT DIA | SHANK DIA                  | FLUTES   | LBS   | LOC           | OAL     | CORNER      | PART NAME           | EDP    | PRICE LIST |
| 1/2     | 1/2                        | 5        |       | 1-1/4         | 3       | 0.015       | Fe5-.5000-M-R.015   | 510450 | \$ 98.37   |
| 1/2     | 1/2                        | 5        |       | 1-1/4         | 3       | 0.030       | Fe5-.5000-M-R.030   | 510460 | \$ 98.37   |
| 1/2     | 1/2                        | 5        |       | 1-1/4         | 3       | 0.060       | Fe5-.5000-M-R.060   | 510470 | \$ 98.37   |
| 5/8     | 5/8                        | 5        | 1-5/8 | 3/4           | 5       | 0.03        | Fe5-.6250-R.030-RN1 | 510480 | \$ 246.22  |
| 5/8     | 5/8                        | 5        | 2-3/8 | 3/4           | 5       | 0.06        | Fe5-.6250-R.060-RN2 | 510490 | \$ 270.84  |
| 5/8     | 5/8                        | 5        |       | 1-1/4         | 3-1/2   | SQ          | Fe5-.6250-SQ        | 510500 | \$ 150.72  |
| 5/8     | 5/8                        | 5        |       | 1-1/4         | 3-1/2   | 0.030       | Fe5-.6250-R.030     | 510510 | \$ 150.72  |
| 5/8     | 5/8                        | 5        |       | 1-1/4         | 3-1/2   | 0.060       | Fe5-.6250-R.060     | 510520 | \$ 150.72  |
| 3/4     | 3/4                        | 5        |       | 7/8           | 3       | SQ          | Fe5-.7500-S-SQ      | 510530 | \$ 222.28  |
| 3/4     | 3/4                        | 5        |       | 7/8           | 3       | 0.030       | Fe5-.7500-S-R.030   | 510540 | \$ 226.82  |
| 3/4     | 3/4                        | 5        |       | 7/8           | 3       | 0.060       | Fe5-.7500-S-R.060   | 510550 | \$ 226.82  |
| 3/4     | 3/4                        | 5        |       | 1-1/2         | 4       | SQ          | Fe5-.7500-SQ        | 510560 | \$ 244.50  |
| 3/4     | 3/4                        | 5        |       | 1-1/2         | 4       | 0.030       | Fe5-.7500-R.030     | 510570 | \$ 249.50  |
| 3/4     | 3/4                        | 5        |       | 1-1/2         | 4       | 0.060       | Fe5-.7500-R.060     | 510580 | \$ 249.50  |

| Material Guide |                              |                                                                                                      | Condition                               | SFM | FL | CHIP PER TOOTH |        |        |        |        |        |        |        |        |        |        |        |  |  |
|----------------|------------------------------|------------------------------------------------------------------------------------------------------|-----------------------------------------|-----|----|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--|--|
|                |                              |                                                                                                      |                                         |     |    | 1/16"          | 3/32"  | 1/8"   | 3/16"  | 1/4"   | 5/16"  | 3/8"   | 7/16"  | 1/2"   | 5/8"   | 3/4"   | 1"     |  |  |
| ISO-M          | Precipitation                | 13-8, 15-5, 17-4PH                                                                                   | Slotting @ ≤ 1 x D                      | 250 | 5  | 0.0003         | 0.0003 | 0.0006 | 0.0009 | 0.0011 | 0.0014 | 0.0017 | 0.0020 | 0.0022 | 0.0028 | 0.0033 | 0.0044 |  |  |
|                |                              |                                                                                                      | Profiling @ 2 x D Axial / ≤ .1 D Radial | 325 | 5  | 0.0004         | 0.0005 | 0.0008 | 0.0012 | 0.0015 | 0.0020 | 0.0022 | 0.0026 | 0.0030 | 0.0037 | 0.0045 | 0.0061 |  |  |
|                | Austenitic                   | 302, 303, 304L, 316L                                                                                 | Slotting @ ≤ 1 x D                      | 275 | 5  | 0.0003         | 0.0004 | 0.0007 | 0.0010 | 0.0013 | 0.0017 | 0.0020 | 0.0024 | 0.0026 | 0.0033 | 0.0040 | 0.0053 |  |  |
|                |                              |                                                                                                      | Profiling @ 2 x D Axial / ≤ .1 D Radial | 350 | 5  | 0.0004         | 0.0005 | 0.0009 | 0.0013 | 0.0018 | 0.0023 | 0.0028 | 0.0033 | 0.0036 | 0.0045 | 0.0054 | 0.0072 |  |  |
|                | Martensitic                  | 403, 410, 416                                                                                        | Slotting @ ≤ 1 x D                      | 300 | 5  | 0.0003         | 0.0004 | 0.0007 | 0.0011 | 0.0014 | 0.0019 | 0.0021 | 0.0025 | 0.0029 | 0.0035 | 0.0042 | 0.0056 |  |  |
|                |                              |                                                                                                      | Profiling @ 2 x D Axial / ≤ .1 D Radial | 375 | 5  | 0.0005         | 0.0006 | 0.0010 | 0.0015 | 0.0019 | 0.0024 | 0.0029 | 0.0034 | 0.0039 | 0.0048 | 0.0057 | 0.0077 |  |  |
| ISO-S          | Cobalt Base                  | Stellite, Haynes 25, 188, X-40, L-605                                                                | Slotting @ .5 x D                       | 110 | 5  | 0.0002         | 0.0002 | 0.0003 | 0.0004 | 0.0006 | 0.0007 | 0.0009 | 0.0011 | 0.0012 | 0.0015 | 0.0018 | 0.0024 |  |  |
|                |                              |                                                                                                      | Profiling @ 2 x D Axial / ≤ .1 D Radial | 150 | 5  | 0.0002         | 0.0002 | 0.0003 | 0.0004 | 0.0008 | 0.0010 | 0.0008 | 0.0009 | 0.0014 | 0.0018 | 0.0022 | 0.0029 |  |  |
|                | Nickel Base                  | Inconel 600, 625, 718, Nickel 200, 270, Invar, Monel 400, 405, K-Monel, PermaNickel 300, Inconel 600 | Slotting @ .5 x D                       | 75  | 5  | 0.0002         | 0.0003 | 0.0004 | 0.0003 | 0.0008 | 0.0010 | 0.0011 | 0.0013 | 0.0019 | 0.0018 | 0.0029 | 0.0029 |  |  |
|                |                              |                                                                                                      | Profiling @ 2 x D Axial / ≤ .1 D Radial | 115 | 5  | 0.0002         | 0.0003 | 0.0004 | 0.0004 | 0.0008 | 0.0010 | 0.0012 | 0.0015 | 0.0020 | 0.0020 | 0.0024 | 0.0024 |  |  |
|                | Iron Base                    | Inconel 800-802, Multimet N-155,Timken 16-26-6                                                       | Slotting @ .5 x D                       | 95  | 5  | 0.0002         | 0.0003 | 0.0004 | 0.0006 | 0.0010 | 0.0013 | 0.0015 | 0.0018 | 0.0021 | 0.0025 | 0.0031 | 0.0041 |  |  |
|                |                              |                                                                                                      | Profiling @ 2 x D Axial / ≤ .1 D Radial | 130 | 5  | 0.0002         | 0.0003 | 0.0004 | 0.0006 | 0.0011 | 0.0014 | 0.0018 | 0.0021 | 0.0023 | 0.0029 | 0.0034 | 0.0046 |  |  |
| ISO-P          | High Strength Steels         | 4140, 4340, 52100                                                                                    | Slotting @ ≤ 1 x D                      | 300 | 5  | 0.0003         | 0.0004 | 0.0007 | 0.0010 | 0.0014 | 0.0019 | 0.0021 | 0.0025 | 0.0029 | 0.0035 | 0.0042 | 0.0056 |  |  |
|                |                              |                                                                                                      | Profiling @ 2 x D Axial / ≤ .1 D Radial | 375 | 5  | 0.0005         | 0.0006 | 0.0010 | 0.0014 | 0.0019 | 0.0024 | 0.0029 | 0.0034 | 0.0039 | 0.0048 | 0.0057 | 0.0077 |  |  |
|                | High Alloy Steels Mold & Die | A-2, P20, 01, 02, 06, D2, H-13                                                                       | Slotting @ ≤ 1 x D                      | 275 | 5  | 0.0003         | 0.0003 | 0.0006 | 0.0009 | 0.0012 | 0.0016 | 0.0018 | 0.0021 | 0.0024 | 0.0030 | 0.0035 | 0.0047 |  |  |
|                |                              |                                                                                                      | Profiling @ 2 x D Axial / ≤ .1 D Radial | 350 | 5  | 0.0004         | 0.0005 | 0.0008 | 0.0012 | 0.0017 | 0.0021 | 0.0024 | 0.0029 | 0.0032 | 0.0041 | 0.0048 | 0.0065 |  |  |
|                | Medium Alloy Steels          | 200, 250, 300                                                                                        | Slotting @ ≤ 1 x D                      | 325 | 5  | 0.0003         | 0.0003 | 0.0006 | 0.0006 | 0.0013 | 0.0017 | 0.0022 | 0.0026 | 0.0028 | 0.0039 | 0.0044 | 0.0055 |  |  |
|                |                              |                                                                                                      | Profiling @ 2 x D Axial / ≤ .1 D Radial | 400 | 5  | 0.0003         | 0.0003 | 0.0006 | 0.0006 | 0.0017 | 0.0021 | 0.0026 | 0.0032 | 0.0033 | 0.0044 | 0.0055 | 0.0066 |  |  |
| ISO-K          | Low Alloy Steels-Maraging    | 10XX, 11XX, 13XX                                                                                     | Slotting @ ≤ 1 x D                      | 325 | 5  | 0.0004         | 0.0005 | 0.0008 | 0.0011 | 0.0015 | 0.0020 | 0.0023 | 0.0028 | 0.0031 | 0.0039 | 0.0046 | 0.0062 |  |  |
|                |                              |                                                                                                      | Profiling @ 2 x D Axial / ≤ .1 D Radial | 400 | 5  | 0.0006         | 0.0007 | 0.0011 | 0.0017 | 0.0021 | 0.0027 | 0.0032 | 0.0038 | 0.0042 | 0.0053 | 0.0063 | 0.0084 |  |  |
|                | Ductile Iron                 | ASTM A536, ASTM 897                                                                                  | Slotting @ ≤ 1 x D                      | 400 | 5  | 0.0003         | 0.0003 | 0.0006 | 0.0009 | 0.0011 | 0.0014 | 0.0017 | 0.0020 | 0.0022 | 0.0028 | 0.0033 | 0.0044 |  |  |
|                |                              |                                                                                                      | Profiling @ 2 x D Axial / ≤ .1 D Radial | 550 | 5  | 0.0004         | 0.0005 | 0.0008 | 0.0011 | 0.0015 | 0.0020 | 0.0022 | 0.0026 | 0.0030 | 0.0037 | 0.0045 | 0.0061 |  |  |
|                | Cast Iron                    | SAE J431, ASTM A48                                                                                   | Slotting @ ≤ 1 x D                      | 450 | 5  | 0.0003         | 0.0004 | 0.0007 | 0.0011 | 0.0013 | 0.0017 | 0.0020 | 0.0024 | 0.0026 | 0.0033 | 0.0040 | 0.0053 |  |  |
|                |                              |                                                                                                      | Profiling @ 2 x D Axial / ≤ .1 D Radial | 600 | 5  | 0.0004         | 0.0005 | 0.0009 | 0.0013 | 0.0018 | 0.0023 | 0.0028 | 0.0033 | 0.0036 | 0.0045 | 0.0054 | 0.0072 |  |  |
| ISO-S          | Titanium Alloys              | 6AL-4V, ASTM 1, 2, 3, 6AL-2S                                                                         | Slotting @ ≤ 1 x D                      | 175 | 5  | 0.0003         | 0.0003 | 0.0006 | 0.0008 | 0.0010 | 0.0013 | 0.0015 | 0.0018 | 0.0020 | 0.0025 | 0.0031 | 0.0041 |  |  |
|                |                              |                                                                                                      | Profiling @ 2 x D Axial / ≤ .1 D Radial | 275 | 5  | 0.0003         | 0.0004 | 0.0007 | 0.0011 | 0.0014 | 0.0019 | 0.0021 | 0.0025 | 0.0028 | 0.0034 | 0.0042 | 0.0055 |  |  |

For 5553, decrease SFM and IPM by 25%

| Material Guide            |                                         |                                                                                                      | Condition                               | M/<br>MIN | FL     | CHIP PER TOOTH - METRIC |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
|---------------------------|-----------------------------------------|------------------------------------------------------------------------------------------------------|-----------------------------------------|-----------|--------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                           |                                         |                                                                                                      |                                         |           |        | 1.5mm                   | 2mm    | 2.5mm  | 3mm    | 4mm    | 5mm    | 6mm    | 8mm    | 10mm   | 12mm   | 14mm   | 16mm   | 18mm   | 20mm   | 25mm   |
| ISO-M                     | Precipitation                           | 13-8, 15-5, 17-4PH                                                                                   | Slotting @ ≤ 1 x D                      | 76        | 5      | 0.0064                  | 0.0076 | 0.0099 | 0.0127 | 0.0163 | 0.0203 | 0.0254 | 0.0325 | 0.0381 | 0.0508 | 0.0544 | 0.0635 | 0.0711 | 0.0762 | 0.1016 |
|                           |                                         |                                                                                                      | Profiling @ 2 x D Axial / ≤ .1 D Radial | 100       | 5      | 0.0089                  | 0.0107 | 0.0139 | 0.0178 | 0.0228 | 0.0279 | 0.0356 | 0.0456 | 0.0508 | 0.0685 | 0.0736 | 0.0864 | 0.0971 | 0.1041 | 0.1397 |
|                           | Austenitic                              | 302, 303, 304L, 316L                                                                                 | Slotting @ ≤ 1 x D                      | 83        | 5      | 0.0076                  | 0.0091 | 0.0119 | 0.0152 | 0.0195 | 0.0229 | 0.0305 | 0.0389 | 0.0457 | 0.0610 | 0.0652 | 0.0762 | 0.0853 | 0.0914 | 0.1219 |
|                           |                                         |                                                                                                      | Profiling @ 2 x D Axial / ≤ .1 D Radial | 110       | 5      | 0.0102                  | 0.0122 | 0.0158 | 0.0203 | 0.0260 | 0.0305 | 0.0406 | 0.0520 | 0.0635 | 0.0838 | 0.0895 | 0.1041 | 0.1163 | 0.1214 | 0.1651 |
|                           | Martensitic                             | 403, 410, 416                                                                                        | Slotting @ ≤ 1 x D                      | 90        | 5      | 0.0076                  | 0.0091 | 0.0119 | 0.0152 | 0.0195 | 0.0254 | 0.0330 | 0.0389 | 0.0482 | 0.0660 | 0.0677 | 0.0812 | 0.0903 | 0.0965 | 0.1295 |
|                           |                                         |                                                                                                      | Profiling @ 2 x D Axial / ≤ .1 D Radial | 115       | 5      | 0.0115                  | 0.0137 | 0.0179 | 0.0229 | 0.0293 | 0.0355 | 0.0431 | 0.0586 | 0.0660 | 0.0889 | 0.0953 | 0.1117 | 0.1254 | 0.1320 | 0.1778 |
| ISO-S                     | Cobalt Base                             | Stellite, Haynes 25, 188, X-40, L-605                                                                | Slotting @ .5 x D                       | 34        | 5      | 0.0038                  | 0.0046 | 0.0059 | 0.0076 | 0.0097 | 0.0102 | 0.0127 | 0.0195 | 0.0203 | 0.0279 | 0.0300 | 0.0355 | 0.0401 | 0.0406 | 0.0558 |
|                           |                                         |                                                                                                      | Profiling @ 2 x D Axial / ≤.1 D Radial  | 45        | 5      | 0.0038                  | 0.0046 | 0.0059 | 0.0076 | 0.0097 | 0.0102 | 0.0178 | 0.0195 | 0.0178 | 0.0330 | 0.0275 | 0.0406 | 0.0452 | 0.0508 | 0.0660 |
|                           | Nickel Base                             | Inconel 600, 625, 718, Nickel 200, 270, Invar, Monel 400, 405, K-Monel, PermaNickel 300, Inconel 600 | Slotting @ .5 x D                       | 23        | 5      | 0.0051                  | 0.0061 | 0.0080 | 0.0102 | 0.0131 | 0.0102 | 0.0178 | 0.0261 | 0.0254 | 0.0431 | 0.0385 | 0.0406 | 0.0467 | 0.0660 | 0.0660 |
|                           |                                         |                                                                                                      | Profiling @ 2 x D Axial / ≤.1 D Radial  | 35        | 5      | 0.0053                  | 0.0064 | 0.0083 | 0.0106 | 0.0136 | 0.0102 | 0.0178 | 0.0271 | 0.0279 | 0.0457 | 0.0415 | 0.0457 | 0.0521 | 0.0558 | 0.0558 |
|                           | Iron Base                               | Inconel 800-802, Multimet N-155,Timken 16-26-6                                                       | Slotting @ .5 x D                       | 30        | 5      | 0.0051                  | 0.0061 | 0.0080 | 0.0102 | 0.0131 | 0.0127 | 0.0229 | 0.0261 | 0.0355 | 0.0482 | 0.0486 | 0.0584 | 0.0645 | 0.0711 | 0.0939 |
|                           |                                         |                                                                                                      | Profiling @ 2 x D Axial / ≤.1 D Radial  | 40        | 5      | 0.0051                  | 0.0061 | 0.0080 | 0.0102 | 0.0131 | 0.0127 | 0.0254 | 0.0261 | 0.0406 | 0.0533 | 0.0537 | 0.0660 | 0.0721 | 0.0787 | 0.1066 |
| ISO-P                     | High Strength Steels                    | 4140, 4340, 52100                                                                                    | Slotting @ ≤ 1 x D                      | 92        | 5      | 0.0076                  | 0.0091 | 0.0119 | 0.0152 | 0.0195 | 0.0229 | 0.0330 | 0.0389 | 0.0482 | 0.0660 | 0.0677 | 0.0812 | 0.0903 | 0.0965 | 0.1295 |
|                           |                                         |                                                                                                      | Profiling @ 2 x D Axial / ≤ .1 D Radial | 115       | 5      | 0.0115                  | 0.0137 | 0.0179 | 0.0229 | 0.0293 | 0.0330 | 0.0431 | 0.0586 | 0.0660 | 0.0889 | 0.0953 | 0.1117 | 0.1254 | 0.1320 | 0.1778 |
|                           | High Alloy Steels - Mold & Die          | A-2, P20, 01, 02, 06, D2, H-13                                                                       | Slotting @ ≤ 1 x D                      | 84        | 5      | 0.0064                  | 0.0076 | 0.0099 | 0.0127 | 0.0163 | 0.0203 | 0.0279 | 0.0325 | 0.0406 | 0.0558 | 0.0569 | 0.0685 | 0.0761 | 0.0812 | 0.1092 |
|                           |                                         |                                                                                                      | Profiling @ 2 x D Axial / ≤ .1 D Radial | 110       | 5      | 0.0089                  | 0.0106 | 0.0138 | 0.0177 | 0.0227 | 0.0279 | 0.0381 | 0.0453 | 0.0558 | 0.0737 | 0.0785 | 0.0939 | 0.1045 | 0.1117 | 0.1498 |
|                           | Medium Alloy Steels                     | 200, 250, 300                                                                                        | Slotting @ ≤ 1 x D                      | 100       | 5      | 0.0064                  | 0.0076 | 0.0099 | 0.0127 | 0.0163 | 0.0127 | 0.0304 | 0.0325 | 0.0508 | 0.0635 | 0.0671 | 0.0889 | 0.0965 | 0.1016 | 0.1270 |
|                           |                                         |                                                                                                      | Profiling @ 2 x D Axial / ≤ .1 D Radial | 122       | 5      | 0.0064                  | 0.0076 | 0.0099 | 0.0127 | 0.0163 | 0.0127 | 0.0381 | 0.0325 | 0.0609 | 0.0762 | 0.0772 | 0.1016 | 0.1092 | 0.1270 | 0.1524 |
| Low Alloy Steels-Maraging | 10XX, 11XX, 13XX                        | Slotting @ ≤ 1 x D                                                                                   | 100                                     | 5         | 0.0089 | 0.0107                  | 0.0139 | 0.0178 | 0.0228 | 0.0254 | 0.0355 | 0.0456 | 0.0533 | 0.0711 | 0.0761 | 0.0889 | 0.0996 | 0.1066 | 0.1422 |        |
|                           |                                         | Profiling @ 2 x D Axial / ≤ .1 D Radial                                                              | 122                                     | 5         | 0.0127 | 0.0152                  | 0.0198 | 0.0254 | 0.0325 | 0.0381 | 0.0482 | 0.0650 | 0.0736 | 0.0965 | 0.1061 | 0.1219 | 0.1371 | 0.1447 | 0.1930 |        |
| ISO-K                     | Ductile Iron                            | ASTM A536, ASTM 897                                                                                  | Slotting @ ≤ 1 x D                      | 122       | 5      | 0.0064                  | 0.0076 | 0.0099 | 0.0127 | 0.0163 | 0.0203 | 0.0254 | 0.0325 | 0.0381 | 0.0508 | 0.0544 | 0.0635 | 0.0711 | 0.0762 | 0.1016 |
|                           | Profiling @ 2 x D Axial / ≤ .1 D Radial |                                                                                                      | 168                                     | 5         | 0.0089 | 0.0107                  | 0.0139 | 0.0178 | 0.0228 | 0.0254 | 0.0355 | 0.0456 | 0.0508 | 0.0685 | 0.0736 | 0.0863 | 0.0970 | 0.1041 | 0.1397 |        |
|                           | Cast Iron                               | SAE J431, ASTM A48                                                                                   | Slotting @ ≤ 1 x D                      | 137       | 5      | 0.0076                  | 0.0091 | 0.0119 | 0.0152 | 0.0195 | 0.0254 | 0.0304 | 0.0389 | 0.0457 | 0.0609 | 0.0652 | 0.0762 | 0.0853 | 0.0914 | 0.1219 |
|                           | Grey Cast Iron                          |                                                                                                      | Profiling @ 2 x D Axial / ≤ .1 D Radial | 183       | 5      | 0.0102                  | 0.0122 | 0.0158 | 0.0203 | 0.0260 | 0.0304 | 0.0406 | 0.0520 | 0.0635 | 0.0838 | 0.0895 | 0.1041 | 0.1163 | 0.1244 | 0.1651 |
| ISO-S                     | Titanium Alloys                         | 6AL-4V, ASTM 1, 2, 3, 6AL-2S                                                                         | Slotting @ ≤ 1 x D                      | 53        | 5      | 0.0064                  | 0.0076 | 0.0099 | 0.0127 | 0.0163 | 0.0178 | 0.0229 | 0.0325 | 0.0355 | 0.0457 | 0.0518 | 0.0584 | 0.0660 | 0.0711 | 0.0939 |
|                           |                                         |                                                                                                      | Profiling @ 2 x D Axial / ≤ .1 D Radial | 84        | 5      | 0.0076                  | 0.0091 | 0.0119 | 0.0152 | 0.0195 | 0.0254 | 0.0330 | 0.0389 | 0.0482 | 0.0635 | 0.0677 | 0.0787 | 0.0878 | 0.0965 | 0.1270 |

# Ferrous Alloys



| Carbide | 7 Flute Non-Center Cutting | Variable | TiAlN | +.000 / -.002 | HRc<54 | Series: Fe7 |                     |        |            |
|---------|----------------------------|----------|-------|---------------|--------|-------------|---------------------|--------|------------|
| CUT DIA | SHANK DIA                  | FLUTES   | LBS   | LOC           | OAL    | CORNER      | PART NAME           | EDP    | PRICE LIST |
| 1/8     | 1/8                        | 7        |       | 3/16          | 1-1/2  | SQ          | Fe7-.1250-S-SQ      | 710000 | \$ 29.55   |
| 1/8     | 1/8                        | 7        |       | 3/16          | 1-1/2  | 0.010       | Fe7-.1250-S-R.010   | 710010 | \$ 30.50   |
| 1/8     | 1/8                        | 7        |       | 3/8           | 1-1/2  | SQ          | Fe7-.1250-SQ        | 710020 | \$ 31.93   |
| 1/8     | 1/8                        | 7        |       | 3/8           | 1-1/2  | 0.010       | Fe7-.1250-R.010     | 710030 | \$ 32.58   |
| 3/16    | 3/16                       | 7        |       | 9/32          | 1-1/2  | SQ          | Fe7-.1875-S-SQ      | 710040 | \$ 34.53   |
| 3/16    | 3/16                       | 7        |       | 9/32          | 1-1/2  | 0.010       | Fe7-.1875-S-R.010   | 710050 | \$ 35.23   |
| 3/16    | 3/16                       | 7        |       | 9/16          | 2      | SQ          | Fe7-.1875-SQ        | 710060 | \$ 38.50   |
| 3/16    | 3/16                       | 7        |       | 9/16          | 2      | 0.010       | Fe7-.1875-R.010     | 710070 | \$ 39.29   |
| 1/4     | 1/4                        | 7        |       | 3/8           | 2      | SQ          | Fe7-.2500-S-SQ      | 710080 | \$ 43.04   |
| 1/4     | 1/4                        | 7        |       | 3/8           | 2      | 0.015       | Fe7-.2500-S-R.015   | 710090 | \$ 43.92   |
| 1/4     | 1/4                        | 7        | 2-1/8 | 3/8           | 4      | 0.015       | Fe7-.2500-R.015-RN2 | 710100 | \$ 82.54   |
| 1/4     | 1/4                        | 7        |       | 3/4           | 2-1/2  | SQ          | Fe7-.2500-SQ        | 710110 | \$ 50.17   |
| 1/4     | 1/4                        | 7        |       | 3/4           | 2-1/2  | 0.015       | Fe7-.2500-R.015     | 710120 | \$ 51.19   |
| 3/8     | 3/8                        | 7        |       | 1/2           | 2      | SQ          | Fe7-.3750-S-SQ      | 710130 | \$ 73.51   |
| 3/8     | 3/8                        | 7        |       | 1/2           | 2      | 0.015       | Fe7-.3750-S-R.015   | 710140 | \$ 75.01   |
| 3/8     | 3/8                        | 7        | 1-1/8 | 1/2           | 3      | 0.015       | Fe7-.3750-R.015-RN1 | 710150 | \$ 101.29  |
| 3/8     | 3/8                        | 7        | 2-1/8 | 1/2           | 4      | 0.015       | Fe7-.3750-R.015-RN2 | 710160 | \$ 116.42  |
| 3/8     | 3/8                        | 7        |       | 1             | 2-1/2  | SQ          | Fe7-.3750-SQ        | 710170 | \$ 78.06   |
| 3/8     | 3/8                        | 7        |       | 1             | 2-1/2  | 0.015       | Fe7-.3750-R.015     | 710180 | \$ 79.65   |
| 3/8     | 3/8                        | 7        |       | 2-1/8         | 3      | 0.015       | Fe7-.3750-L-R.015   | 710190 | \$ 86.82   |
| 1/2     | 1/2                        | 7        |       | 5/8           | 2-1/2  | SQ          | Fe7-.5000-S-SQ      | 710200 | \$ 116.62  |
| 1/2     | 1/2                        | 7        |       | 5/8           | 2-1/2  | 0.015       | Fe7-.5000-S-R.015   | 710210 | \$ 119.00  |
| 1/2     | 1/2                        | 7        | 1-1/2 | 5/8           | 4      | 0.015       | Fe7-.5000-R.015-RN1 | 710220 | \$ 217.02  |
| 1/2     | 1/2                        | 7        | 2-1/4 | 5/8           | 4      | 0.015       | Fe7-.5000-R.015-RN2 | 710230 | \$ 238.72  |
| 1/2     | 1/2                        | 7        |       | 1             | 3      | SQ          | Fe7-.5000-SQ        | 710240 | \$ 128.05  |
| 1/2     | 1/2                        | 7        |       | 1             | 3      | 0.015       | Fe7-.5000-R.015     | 710250 | \$ 130.66  |
| 1/2     | 1/2                        | 7        |       | 1             | 3      | 0.030       | Fe7-.5000-R.030     | 710260 | \$ 130.66  |
| 1/2     | 1/2                        | 7        |       | 1-1/4         | 3      | SQ          | Fe7-.5000-M-SQ      | 710270 | \$ 128.05  |
| 1/2     | 1/2                        | 7        |       | 1-1/4         | 3      | 0.015       | Fe7-.5000-M-R.015   | 710280 | \$ 130.66  |
| 1/2     | 1/2                        | 7        |       | 1-1/4         | 3      | 0.03        | Fe7-.5000-M-R.030   | 710290 | \$ 130.66  |
| 5/8     | 5/8                        | 7        |       | 3/4           | 3      | SQ          | Fe7-.6250-S-SQ      | 710300 | \$ 211.48  |
| 5/8     | 5/8                        | 7        |       | 3/4           | 3      | 0.030       | Fe7-.6250-S-R.030   | 710310 | \$ 215.80  |
| 5/8     | 5/8                        | 7        | 1-5/8 | 3/4           | 5      | 0.03        | Fe7-.6250-R.030-RN1 | 710320 | \$ 371.95  |
| 5/8     | 5/8                        | 7        |       | 1-1/4         | 3-1/2  | SQ          | Fe7-.6250-SQ        | 710330 | \$ 223.15  |
| 5/8     | 5/8                        | 7        |       | 1-1/4         | 3-1/2  | 0.030       | Fe7-.6250-R.030     | 710340 | \$ 227.70  |
| 3/4     | 3/4                        | 7        |       | 7/8           | 3      | SQ          | Fe7-.7500-S-SQ      | 710350 | \$ 312.79  |
| 3/4     | 3/4                        | 7        |       | 7/8           | 3      | 0.03        | Fe7-.7500-S-R.030   | 710360 | \$ 319.17  |
| 3/4     | 3/4                        | 7        | 2     | 7/8           | 5      | 0.030       | Fe7-.7500-R.030-RN2 | 710370 | \$ 435.54  |
| 3/4     | 3/4                        | 7        |       | 1-1/2         | 4      | SQ          | Fe7-.7500-SQ        | 710380 | \$ 335.82  |
| 3/4     | 3/4                        | 7        |       | 1-1/2         | 4      | 0.030       | Fe7-.7500-R.030     | 710390 | \$ 342.67  |

| Material Guide                                 |                                                |                                                                                                       | Condition                                                | SFM                                                      | FL     | CHIP PER TOOTH |         |        |        |        |        |        |        |
|------------------------------------------------|------------------------------------------------|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------|--------|----------------|---------|--------|--------|--------|--------|--------|--------|
|                                                |                                                |                                                                                                       |                                                          |                                                          |        | 1/8"           | 3/16"   | 1/4"   | 3/8"   | 1/2"   | 5/8"   | 3/4"   | 1"     |
| ISO-M                                          | Precipitation                                  | 13-8, 15-5, 17-4PH                                                                                    | High Speed Profiling @ Full Length Axial / < .1 D Radial | 325                                                      | 7      | 0.0010         | 0.0014  | 0.0019 | 0.0029 | 0.0038 | 0.0048 | 0.0058 | 0.0077 |
|                                                |                                                |                                                                                                       | Profiling @ Full Length Axial / < .08 D Radial           | 250                                                      | 7      | 0.0007         | 0.0011  | 0.0014 | 0.0022 | 0.0029 | 0.0036 | 0.0043 | 0.0058 |
|                                                | Austenitic                                     | 302, 303, 304L, 316L                                                                                  | High Speed Profiling @ Full Length Axial / < .1 D Radial | 350                                                      | 7      | 0.0010         | 0.0014  | 0.0019 | 0.0029 | 0.0038 | 0.0048 | 0.0058 | 0.0077 |
|                                                |                                                |                                                                                                       | Profiling @ Full Length Axial / < .08 D Radial           | 275                                                      | 7      | 0.0007         | 0.0011  | 0.0014 | 0.0022 | 0.0029 | 0.0036 | 0.0043 | 0.0058 |
|                                                | Martensitic                                    | 403, 410, 416                                                                                         | High Speed Profiling @ Full Length Axial / < .1 D Radial | 375                                                      | 7      | 0.0011         | 0.0016  | 0.0022 | 0.0032 | 0.0043 | 0.0054 | 0.0065 | 0.0086 |
| Profiling @ Full Length Axial / < .08 D Radial |                                                |                                                                                                       | 250                                                      | 7                                                        | 0.0008 | 0.0013         | 0.0017  | 0.0025 | 0.0034 | 0.0042 | 0.0050 | 0.0067 |        |
| ISO-S                                          | Cobalt Base                                    | Stellite, Haynes 25, 188, X-40                                                                        | High Speed Profiling @ Full Length Axial / < .1 D Radial | 135                                                      | 7      | 0.0003         | 0.0004  | 0.0005 | 0.0008 | 0.0011 | 0.0014 | 0.0016 | 0.0022 |
|                                                |                                                |                                                                                                       | Profiling @ Full Length Axial / < .08 D Radial           | 110                                                      | 7      | 0.0003         | 0.0005  | 0.0007 | 0.0007 | 0.0013 | 0.0016 | 0.0020 | 0.0026 |
|                                                | Nickel Base                                    | Inconel 600, 625, 718, Nickel 200, 270, Invar, Monel 400, 405, K-Monel, PermaN-ickel 300, Inconel 600 | High Speed Profiling @ Full Length Axial / < .1 D Radial | 120                                                      | 7      | 0.0004         | 0.0005  | 0.0007 | 0.0010 | 0.0017 | 0.0016 | 0.0026 | 0.0026 |
|                                                |                                                |                                                                                                       | Profiling @ Full Length Axial / < .08 D Radial           | 105                                                      | 7      | 0.0004         | 0.0005  | 0.0007 | 0.0011 | 0.0018 | 0.0018 | 0.0022 | 0.0022 |
|                                                | Iron Base                                      | Incoloy 800-802, Multimet N-155                                                                       | High Speed Profiling @ Full Length Axial / < .1 D Radial | 105                                                      | 7      | 0.0004         | 0.0005  | 0.0008 | 0.0013 | 0.0017 | 0.0021 | 0.0025 | 0.0033 |
|                                                |                                                |                                                                                                       | Profiling @ Full Length Axial / < .08 D Radial           | 95                                                       | 7      | 0.0004         | 0.0006  | 0.0009 | 0.0014 | 0.0019 | 0.0023 | 0.0028 | 0.0038 |
|                                                | ISO-P                                          | High Strength Steels                                                                                  | 4140, 4340, 52100                                        | High Speed Profiling @ Full Length Axial / < .1 D Radial | 425    | 7              | 0.00072 | 0.0011 | 0.0014 | 0.0022 | 0.0029 | 0.0036 | 0.0043 |
| Profiling @ Full Length Axial / < .08 D Radial |                                                |                                                                                                       |                                                          | 350                                                      | 7      | 0.0005         | 0.0007  | 0.0010 | 0.0014 | 0.0019 | 0.0024 | 0.0029 | 0.0038 |
| High Alloy Steels Mold & Die                   |                                                | A-2, P20, 01, 02, 06, D2, H-13                                                                        | High Speed Profiling @ Full Length Axial / < .1 D Radial | 400                                                      | 7      | 0.0010         | 0.0014  | 0.0019 | 0.0029 | 0.0038 | 0.0048 | 0.0058 | 0.0077 |
|                                                |                                                |                                                                                                       | Profiling @ Full Length Axial / < .08 D Radial           | 300                                                      | 7      | 0.0007         | 0.0011  | 0.0014 | 0.0022 | 0.0029 | 0.0036 | 0.0043 | 0.0058 |
| Medium Alloy Steels                            |                                                | 200, 250, 300                                                                                         | High Speed Profiling @ Full Length Axial / < .1 D Radial | 375                                                      | 7      | 0.0010         | 0.0014  | 0.0019 | 0.0029 | 0.0038 | 0.0048 | 0.0058 | 0.0077 |
|                                                |                                                |                                                                                                       | Profiling @ Full Length Axial / < .08 D Radial           | 320                                                      | 7      | 0.0007         | 0.0011  | 0.0014 | 0.0022 | 0.0029 | 0.0036 | 0.0043 | 0.0058 |
| Low Alloy Steels-Maraging                      |                                                | 10XX, 11XX, 13XX                                                                                      | High Speed Profiling @ Full Length Axial / < .1 D Radial | 420                                                      | 7      | 0.0011         | 0.0016  | 0.0022 | 0.0032 | 0.0043 | 0.0054 | 0.0065 | 0.0086 |
|                                                | Profiling @ Full Length Axial / < .08 D Radial |                                                                                                       | 350                                                      | 7                                                        | 0.0007 | 0.0011         | 0.0014  | 0.0022 | 0.0029 | 0.0036 | 0.0043 | 0.0058 |        |
| ISO-K                                          | Ductile Iron                                   | ASTM A536, ASTM 897                                                                                   | High Speed Profiling @ Full Length Axial / < .1 D Radial | 375                                                      | 7      | 0.0012         | 0.0018  | 0.0024 | 0.0036 | 0.0048 | 0.0060 | 0.0072 | 0.0096 |
|                                                |                                                |                                                                                                       | Profiling @ Full Length Axial / < .08 D Radial           | 300                                                      | 7      | 0.0010         | 0.0014  | 0.0019 | 0.0029 | 0.0038 | 0.0048 | 0.0058 | 0.0077 |
|                                                | Cast Iron                                      | SAE J431, ASTM A48                                                                                    | High Speed Profiling @ Full Length Axial / < .1 D Radial | 425                                                      | 7      | 0.0018         | 0.0027  | 0.0036 | 0.0054 | 0.0072 | 0.0090 | 0.0108 | 0.0144 |
|                                                |                                                |                                                                                                       | Profiling @ Full Length Axial / < .08 D Radial           | 325                                                      | 7      | 0.0012         | 0.0018  | 0.0024 | 0.0036 | 0.0048 | 0.0060 | 0.0072 | 0.0096 |
| ISO-S                                          | Titanium Alloys                                | 6AL-4V, ASTM 1, 2, 3, 6AL-2S                                                                          | High Speed Profiling @ Full Length Axial / < .1 D Radial | 300                                                      | 7      | 0.0010         | 0.0014  | 0.0019 | 0.0029 | 0.0038 | 0.0048 | 0.0058 | 0.0077 |
|                                                |                                                |                                                                                                       | Profiling @ Full Length Axial / < .08 D Radial           | 225                                                      | 7      | 0.0007         | 0.0011  | 0.0014 | 0.0022 | 0.0029 | 0.0036 | 0.0043 | 0.0058 |

For 5553, decrease SFM and IPM by 25%

For 5553, decrease SFM and IPM by 25%

| Material Guide                                 |                                |                                                                                                       | Condition                                                | M/<br>MIN | FL     | CHIP PER TOOTH - METRIC |        |        |        |        |        |        |        |        |        |        |
|------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------|-----------|--------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                                                |                                |                                                                                                       |                                                          |           |        | 3mm                     | 4mm    | 6mm    | 8mm    | 10mm   | 12mm   | 14mm   | 16mm   | 18mm   | 20mm   | 25mm   |
| ISO-M                                          | Precipitation                  | 13-8, 15-5, 17-4PH                                                                                    | High Speed Profiling @ Full Length Axial / < .1 D Radial | 99        | 7      | 0.0244                  | 0.0366 | 0.0488 | 0.0610 | 0.0732 | 0.0975 | 0.1097 | 0.1219 | 0.1341 | 0.1463 | 0.1951 |
|                                                |                                |                                                                                                       | Profiling @ Full Length Axial / < .08 D Radial           | 76        | 7      | 0.0183                  | 0.0274 | 0.0366 | 0.0457 | 0.0549 | 0.0732 | 0.0823 | 0.0914 | 0.1006 | 0.1097 | 0.1463 |
|                                                | Austenitic                     | 302, 303, 304L, 316L                                                                                  | High Speed Profiling @ Full Length Axial / < .1 D Radial | 107       | 7      | 0.0244                  | 0.0366 | 0.0488 | 0.0610 | 0.0732 | 0.0975 | 0.1097 | 0.1219 | 0.1341 | 0.1463 | 0.1951 |
|                                                |                                |                                                                                                       | Profiling @ Full Length Axial / < .08 D Radial           | 84        | 7      | 0.0183                  | 0.0274 | 0.0366 | 0.0457 | 0.0549 | 0.0732 | 0.0823 | 0.0914 | 0.1006 | 0.1097 | 0.1463 |
|                                                | Martensitic                    | 403, 410, 416                                                                                         | High Speed Profiling @ Full Length Axial / < .1 D Radial | 114       | 7      | 0.0274                  | 0.0411 | 0.0549 | 0.0686 | 0.0823 | 0.1097 | 0.1234 | 0.1372 | 0.1509 | 0.1646 | 0.2195 |
| Profiling @ Full Length Axial / < .08 D Radial |                                |                                                                                                       | 76                                                       | 7         | 0.0213 | 0.0320                  | 0.0427 | 0.0533 | 0.0640 | 0.0853 | 0.0960 | 0.1067 | 0.1173 | 0.1280 | 0.1707 |        |
| ISO-S                                          | Cobalt Base                    | Stellite, Haynes 25, 188, X-40                                                                        | High Speed Profiling @ Full Length Axial / < .1 D Radial | 41        | 7      | 0.0076                  | 0.0102 | 0.0127 | 0.0178 | 0.0203 | 0.0279 | 0.0305 | 0.0356 | 0.0381 | 0.0406 | 0.0559 |
|                                                |                                |                                                                                                       | Profiling @ Full Length Axial / < .08 D Radial           | 34        | 7      | 0.0076                  | 0.0127 | 0.0178 | 0.0203 | 0.0178 | 0.0330 | 0.0305 | 0.0406 | 0.0381 | 0.0508 | 0.0660 |
|                                                | Nickel Base                    | Inconel 600, 625, 718, Nickel 200, 270, Invar, Monel 400, 405, K-Monel, Perma-nickel 300, Inconel 600 | High Speed Profiling @ Full Length Axial / < .1 D Radial | 37        | 7      | 0.0102                  | 0.0127 | 0.0178 | 0.0229 | 0.0254 | 0.0432 | 0.0381 | 0.0406 | 0.0483 | 0.0660 | 0.0660 |
|                                                |                                |                                                                                                       | Profiling @ Full Length Axial / < .08 D Radial           | 32        | 7      | 0.0102                  | 0.0127 | 0.0178 | 0.0229 | 0.0279 | 0.0457 | 0.0406 | 0.0457 | 0.0508 | 0.0559 | 0.0559 |
|                                                | Iron Base                      | Incoloy 800-802, Multimet N-155                                                                       | High Speed Profiling @ Full Length Axial / < .1 D Radial | 32        | 7      | 0.0102                  | 0.0127 | 0.0203 | 0.0229 | 0.0330 | 0.0432 | 0.0457 | 0.0533 | 0.0559 | 0.0635 | 0.0838 |
| Profiling @ Full Length Axial / < .08 D Radial |                                |                                                                                                       | 29                                                       | 7         | 0.0102 | 0.0152                  | 0.0229 | 0.0254 | 0.0356 | 0.0483 | 0.0508 | 0.0584 | 0.0610 | 0.0711 | 0.0965 |        |
| ISO-P                                          | High Strength Steels           | 4140, 4340, 52100                                                                                     | High Speed Profiling @ Full Length Axial / < .1 D Radial | 130       | 7      | 0.0183                  | 0.0274 | 0.0366 | 0.0457 | 0.0549 | 0.0732 | 0.0823 | 0.0914 | 0.1006 | 0.1097 | 0.1463 |
|                                                |                                |                                                                                                       | Profiling @ Full Length Axial / < .08 D Radial           | 107       | 7      | 0.0122                  | 0.0183 | 0.0244 | 0.0305 | 0.0366 | 0.0488 | 0.0549 | 0.0610 | 0.0671 | 0.0732 | 0.0975 |
|                                                | High Alloy Steels - Mold & Die | A-2, P20, 01, 02, 06, D2, H-13                                                                        | High Speed Profiling @ Full Length Axial / < .1 D Radial | 122       | 7      | 0.0244                  | 0.0366 | 0.0488 | 0.0610 | 0.0732 | 0.0975 | 0.1097 | 0.1219 | 0.1341 | 0.1463 | 0.1951 |
|                                                |                                |                                                                                                       | Profiling @ Full Length Axial / < .08 D Radial           | 91        | 7      | 0.0183                  | 0.0274 | 0.0366 | 0.0457 | 0.0549 | 0.0732 | 0.0823 | 0.0914 | 0.1006 | 0.1097 | 0.1463 |
|                                                | Medium Alloy Steels            | 200, 250, 300                                                                                         | High Speed Profiling @ Full Length Axial / < .1 D Radial | 114       | 7      | 0.0244                  | 0.0366 | 0.0488 | 0.0610 | 0.0732 | 0.0975 | 0.1097 | 0.1219 | 0.1341 | 0.1463 | 0.1951 |
|                                                |                                |                                                                                                       | Profiling @ Full Length Axial / < .08 D Radial           | 98        | 7      | 0.0183                  | 0.0274 | 0.0366 | 0.0457 | 0.0549 | 0.0732 | 0.0823 | 0.0914 | 0.1006 | 0.1097 | 0.1463 |
|                                                | Low Alloy Steels-Maraging      | 10XX, 11XX, 13XX                                                                                      | High Speed Profiling @ Full Length Axial / < .1 D Radial | 128       | 7      | 0.0274                  | 0.0411 | 0.0549 | 0.0686 | 0.0823 | 0.1097 | 0.1234 | 0.1372 | 0.1509 | 0.1646 | 0.2195 |
| Profiling @ Full Length Axial / < .08 D Radial |                                |                                                                                                       | 107                                                      | 7         | 0.0183 | 0.0274                  | 0.0366 | 0.0457 | 0.0549 | 0.0732 | 0.0823 | 0.0914 | 0.1006 | 0.1097 | 0.1463 |        |
| ISO-K                                          | Ductile Iron                   | ASTM A536, ASTM 897                                                                                   | High Speed Profiling @ Full Length Axial / < .1 D Radial | 114       | 7      | 0.0305                  | 0.0457 | 0.0610 | 0.0762 | 0.0914 | 0.1219 | 0.1372 | 0.1524 | 0.1676 | 0.1829 | 0.2438 |
|                                                |                                |                                                                                                       | Profiling @ Full Length Axial / < .08 D Radial           | 91        | 7      | 0.0244                  | 0.0366 | 0.0488 | 0.0610 | 0.0732 | 0.0975 | 0.1097 | 0.1219 | 0.1341 | 0.1463 | 0.1951 |
|                                                | Cast Iron                      | SAE J431, ASTM A48                                                                                    | High Speed Profiling @ Full Length Axial / < .1 D Radial | 130       | 7      | 0.0457                  | 0.0686 | 0.0914 | 0.1143 | 0.1372 | 0.1829 | 0.2057 | 0.2286 | 0.2515 | 0.2743 | 0.3658 |
|                                                |                                |                                                                                                       | Profiling @ Full Length Axial / < .08 D Radial           | 99        | 7      | 0.0305                  | 0.0457 | 0.0610 | 0.0762 | 0.0914 | 0.1219 | 0.1372 | 0.1524 | 0.1676 | 0.1829 | 0.2438 |
| ISO-S                                          | Titanium Alloys                | 6AL-4V, ASTM 1, 2, 3, 6AL-2S                                                                          | High Speed Profiling @ Full Length Axial / < .1 D Radial | 91        | 7      | 0.0244                  | 0.0366 | 0.0488 | 0.0610 | 0.0732 | 0.0975 | 0.1097 | 0.1219 | 0.1341 | 0.1463 | 0.1951 |
|                                                |                                |                                                                                                       | Profiling @ Full Length Axial / < .08 D Radial           | 69        | 7      | 0.0183                  | 0.0274 | 0.0366 | 0.0457 | 0.0549 | 0.0732 | 0.0823 | 0.0914 | 0.1006 | 0.1097 | 0.1463 |

For 5553, decrease SFM and IPM by 25%

# Ferrous Alloys



| Carbide   | 9 Flute<br>Non-Center<br>Cutting | Variable | TiAlN | +.000 / -.002 | HRC<54 | Series: Fe9 |                     |        |            |
|-----------|----------------------------------|----------|-------|---------------|--------|-------------|---------------------|--------|------------|
| SHANK DIA | CUT DIA                          | FLUTES   | LBS   | LOC           | OAL    | CORNER      | PART NAME           | EDP    | PRICE LIST |
| 3/16      | 3/16                             | 9        |       | 9/32          | 1-1/2  | SQ          | Fe9-.1875-S-SQ      | 910000 | \$ 37.13   |
| 3/16      | 3/16                             | 9        |       | 9/32          | 1-1/2  | 0.010       | Fe9-.1875-S-R.010   | 910010 | \$ 37.89   |
| 3/16      | 3/16                             | 9        |       | 9/16          | 2      | SQ          | Fe9-.1875-SQ        | 910020 | \$ 41.54   |
| 3/16      | 3/16                             | 9        |       | 9/16          | 2      | 0.010       | Fe9-.1875-R.010     | 910030 | \$ 42.30   |
| 1/4       | 1/4                              | 9        |       | 3/8           | 2      | SQ          | Fe9-.2500-S-SQ      | 910040 | \$ 46.30   |
| 1/4       | 1/4                              | 9        |       | 3/8           | 2      | 0.015       | Fe9-.2500-S-R.015   | 910050 | \$ 47.24   |
| 1/4       | 1/4                              | 9        | 2-1/8 | 3/8           | 4      | 0.015       | Fe9-.2500-R.015-RN2 | 910060 | \$ 88.78   |
| 1/4       | 1/4                              | 9        |       | 3/4           | 2-1/2  | SQ          | Fe9-.2500-SQ        | 910070 | \$ 53.96   |
| 1/4       | 1/4                              | 9        |       | 3/4           | 2-1/2  | 0.015       | Fe9-.2500-R.015     | 910080 | \$ 55.06   |
| 3/8       | 3/8                              | 9        |       | 1/2           | 2      | SQ          | Fe9-.3750-S-SQ      | 910090 | \$ 79.08   |
| 3/8       | 3/8                              | 9        |       | 1/2           | 2      | 0.015       | Fe9-.3750-S-R.015   | 910100 | \$ 80.69   |
| 3/8       | 3/8                              | 9        | 1-1/8 | 1/2           | 3      | 0.015       | Fe9-.3750-R.015-RN1 | 910110 | \$ 108.95  |
| 3/8       | 3/8                              | 9        | 2-1/8 | 1/2           | 4      | 0.015       | Fe9-.3750-R.015-RN2 | 910120 | \$ 125.22  |
| 3/8       | 3/8                              | 9        |       | 1             | 2-1/2  | SQ          | Fe9-.3750-SQ        | 910130 | \$ 83.96   |
| 3/8       | 3/8                              | 9        |       | 1             | 2-1/2  | 0.015       | Fe9-.3750-R.015     | 910140 | \$ 85.67   |
| 1/2       | 1/2                              | 9        |       | 5/8           | 2-1/2  | SQ          | Fe9-.5000-S-SQ      | 910150 | \$ 125.47  |
| 1/2       | 1/2                              | 9        |       | 5/8           | 2-1/2  | 0.015       | Fe9-.5000-S-R.015   | 910160 | \$ 128.03  |
| 1/2       | 1/2                              | 9        | 1-1/2 | 5/8           | 4      | 0.015       | Fe9-.5000-R.015-RN1 | 910170 | \$ 233.41  |
| 1/2       | 1/2                              | 9        | 2-1/2 | 5/8           | 4      | 0.015       | Fe9-.5000-R.015-RN2 | 910180 | \$ 256.75  |
| 1/2       | 1/2                              | 9        |       | 1             | 3      | SQ          | Fe9-.5000-SQ        | 910190 | \$ 137.73  |
| 1/2       | 1/2                              | 9        |       | 1             | 3      | 0.015       | Fe9-.5000-R.015     | 910200 | \$ 140.54  |
| 1/2       | 1/2                              | 9        |       | 1             | 3      | 0.030       | Fe9-.5000-R.030     | 910210 | \$ 140.54  |
| 1/2       | 1/2                              | 9        |       | 1-1/4         | 3      | SQ          | Fe9-.5000-M-SQ      | 910220 | \$ 137.73  |
| 1/2       | 1/2                              | 9        |       | 1-1/4         | 3      | 0.015       | Fe9-.5000-M-R.015   | 910230 | \$ 140.54  |
| 1/2       | 1/2                              | 9        |       | 1-1/4         | 3      | 0.03        | Fe9-.5000-M-R.030   | 910240 | \$ 140.54  |
| 5/8       | 5/8                              | 9        |       | 3/4           | 3      | SQ          | Fe9-.6250-S-SQ      | 910250 | \$ 227.48  |
| 5/8       | 5/8                              | 9        |       | 3/4           | 3      | 0.030       | Fe9-.6250-S-R.030   | 910260 | \$ 232.12  |
| 5/8       | 5/8                              | 9        | 1-5/8 | 3/4           | 3      | 0.030       | Fe9-.6250-R.030-RN1 | 910270 | \$ 400.10  |
| 5/8       | 5/8                              | 9        |       | 1-1/4         | 3      | SQ          | Fe9-.6250-SQ        | 910280 | \$ 240.01  |
| 5/8       | 5/8                              | 9        |       | 1-1/4         | 3      | 0.03        | Fe9-.6250-R.030     | 910290 | \$ 244.91  |
| 3/4       | 3/4                              | 9        |       | 1-1/4         | 3      | SQ          | Fe9-.7500-S-SQ      | 910300 | \$ 336.45  |
| 3/4       | 3/4                              | 9        |       | 1-1/4         | 3      | 0.030       | Fe9-.7500-S-R.030   | 910310 | \$ 343.32  |
| 3/4       | 3/4                              | 9        | 2     | 1-1/4         | 5      | 0.03        | Fe9-.7500-R.030-RN2 | 910320 | \$ 468.47  |
| 3/4       | 3/4                              | 9        |       | 1-1/4         | 3-1/2  | SQ          | Fe9-.7500-SQ        | 910330 | \$ 361.20  |
| 3/4       | 3/4                              | 9        |       | 1-1/4         | 3-1/2  | 0.030       | Fe9-.7500-R.030     | 910340 | \$ 368.57  |

| Material Guide |                              |                                                                                                      | Condition                                                | SFM | FL | CHIP PER TOOTH |        |        |        |        |        |        |  |
|----------------|------------------------------|------------------------------------------------------------------------------------------------------|----------------------------------------------------------|-----|----|----------------|--------|--------|--------|--------|--------|--------|--|
|                |                              |                                                                                                      |                                                          |     |    | 3/16"          | 1/4"   | 3/8"   | 1/2"   | 5/8"   | 3/4"   | 1"     |  |
| ISO-M          | Precipitation                | 13-8, 15-5, 17-4PH                                                                                   | High Speed Profiling @ Full Length Axial / < .1 D Radial | 325 | 9  | 0.0014         | 0.0019 | 0.0029 | 0.0038 | 0.0048 | 0.0058 | 0.0077 |  |
|                |                              |                                                                                                      | Profiling @ Full Length Axial / < .08 D Radial           | 250 | 9  | 0.0011         | 0.0014 | 0.0022 | 0.0029 | 0.0036 | 0.0043 | 0.0058 |  |
|                | Austenitic                   | 302, 303, 304L, 316L                                                                                 | High Speed Profiling @ Full Length Axial / < .1 D Radial | 350 | 9  | 0.0014         | 0.0019 | 0.0029 | 0.0038 | 0.0048 | 0.0058 | 0.0077 |  |
|                |                              |                                                                                                      | Profiling @ Full Length Axial / < .08 D Radial           | 275 | 9  | 0.0011         | 0.0014 | 0.0022 | 0.0029 | 0.0036 | 0.0043 | 0.0058 |  |
|                | Martensitic                  | 403, 410, 416                                                                                        | High Speed Profiling @ Full Length Axial / < .1 D Radial | 375 | 9  | 0.0016         | 0.0022 | 0.0032 | 0.0043 | 0.0054 | 0.0065 | 0.0086 |  |
|                |                              |                                                                                                      | Profiling @ Full Length Axial / < .08 D Radial           | 250 | 9  | 0.0013         | 0.0017 | 0.0025 | 0.0034 | 0.0042 | 0.0050 | 0.0067 |  |
| ISO-S          | Cobalt Base                  | Stellite, Haynes 25, 188, X-40, L-605                                                                | High Speed Profiling @ Full Length Axial / < .1 D Radial | 135 | 9  | 0.0004         | 0.0005 | 0.0008 | 0.0011 | 0.0014 | 0.0016 | 0.0022 |  |
|                |                              |                                                                                                      | Profiling @ Full Length Axial / < .08 D Radial           | 110 | 9  | 0.0005         | 0.0007 | 0.0007 | 0.0013 | 0.0016 | 0.0020 | 0.0026 |  |
|                | Nickel Base                  | Inconel 600, 625, 718, Nickel 200, 270, Invar, Monel 400, 405, K-Monel, PermaNickel 300, Inconel 600 | High Speed Profiling @ Full Length Axial / < .1 D Radial | 120 | 9  | 0.0005         | 0.0007 | 0.0010 | 0.0017 | 0.0016 | 0.0026 | 0.0026 |  |
|                |                              |                                                                                                      | Profiling @ Full Length Axial / < .08 D Radial           | 105 | 9  | 0.0005         | 0.0007 | 0.0011 | 0.0018 | 0.0018 | 0.0022 | 0.0022 |  |
|                | Iron Base                    | Incoloy 800-802, Multimet N-155,Timken 16-26-6                                                       | High Speed Profiling @ Full Length Axial / < .1 D Radial | 105 | 9  | 0.0005         | 0.0008 | 0.0013 | 0.0017 | 0.0021 | 0.0025 | 0.0033 |  |
|                |                              |                                                                                                      | Profiling @ Full Length Axial / < .08 D Radial           | 95  | 9  | 0.0006         | 0.0009 | 0.0014 | 0.0019 | 0.0023 | 0.0028 | 0.0038 |  |
| ISO-P          | High Strength Steels         | 4140, 4340, 52100                                                                                    | High Speed Profiling @ Full Length Axial / < .1 D Radial | 425 | 9  | 0.0011         | 0.0014 | 0.0022 | 0.0029 | 0.0036 | 0.0043 | 0.0058 |  |
|                |                              |                                                                                                      | Profiling @ Full Length Axial / < .08 D Radial           | 350 | 9  | 0.0007         | 0.0010 | 0.0014 | 0.0019 | 0.0024 | 0.0029 | 0.0038 |  |
|                | High Alloy Steels Mold & Die | A-2, P20, 01, 02, 06, D2, H-13                                                                       | High Speed Profiling @ Full Length Axial / < .1 D Radial | 400 | 9  | 0.0014         | 0.0019 | 0.0029 | 0.0038 | 0.0048 | 0.0058 | 0.0077 |  |
|                |                              |                                                                                                      | Profiling @ Full Length Axial / < .08 D Radial           | 300 | 9  | 0.0011         | 0.0014 | 0.0022 | 0.0029 | 0.0036 | 0.0043 | 0.0058 |  |
|                | Medium Alloy Steels          | 200, 250, 300                                                                                        | High Speed Profiling @ Full Length Axial / < .1 D Radial | 375 | 9  | 0.0014         | 0.0019 | 0.0029 | 0.0038 | 0.0048 | 0.0058 | 0.0077 |  |
|                |                              |                                                                                                      | Profiling @ Full Length Axial / < .08 D Radial           | 320 | 9  | 0.0011         | 0.0014 | 0.0022 | 0.0029 | 0.0036 | 0.0043 | 0.0058 |  |
| ISO-K          | Low Alloy Steels-Maraging    | 10XX, 11XX, 13XX                                                                                     | High Speed Profiling @ Full Length Axial / < .1 D Radial | 420 | 9  | 0.0016         | 0.0022 | 0.0032 | 0.0043 | 0.0054 | 0.0065 | 0.0086 |  |
|                |                              |                                                                                                      | Profiling @ Full Length Axial / < .08 D Radial           | 350 | 9  | 0.0011         | 0.0014 | 0.0022 | 0.0029 | 0.0036 | 0.0043 | 0.0058 |  |
|                | Ductile Iron                 | ASTM A536, ASTM 897                                                                                  | High Speed Profiling @ Full Length Axial / < .1 D Radial | 375 | 9  | 0.0018         | 0.0024 | 0.0036 | 0.0048 | 0.0060 | 0.0072 | 0.0096 |  |
|                |                              |                                                                                                      | Profiling @ Full Length Axial / < .08 D Radial           | 300 | 9  | 0.0014         | 0.0019 | 0.0029 | 0.0038 | 0.0048 | 0.0058 | 0.0077 |  |
|                | Cast Iron                    | SAE J431, ASTM A48                                                                                   | High Speed Profiling @ Full Length Axial / < .1 D Radial | 425 | 9  | 0.0027         | 0.0036 | 0.0054 | 0.0072 | 0.0090 | 0.0108 | 0.0144 |  |
|                |                              |                                                                                                      | Profiling @ Full Length Axial / < .08 D Radial           | 325 | 9  | 0.0018         | 0.0024 | 0.0036 | 0.0048 | 0.0060 | 0.0072 | 0.0096 |  |
| ISO-S          | Titanium Alloys              | 6AL-4V, ASTM 1, 2, 3, 6AL-2S                                                                         | High Speed Profiling @ Full Length Axial / < .1 D Radial | 300 | 9  | 0.0014         | 0.0019 | 0.0029 | 0.0038 | 0.0048 | 0.0058 | 0.0077 |  |
|                |                              |                                                                                                      | Profiling @ Full Length Axial / < .08 D Radial           | 225 | 9  | 0.0011         | 0.0014 | 0.0022 | 0.0029 | 0.0036 | 0.0043 | 0.0058 |  |

For 5553, decrease SFM and IPM by 25%

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| Material Guide               |                                                |                                                                                                      | Condition                                                | M/<br>MIN                                                | FL     | CHIP PER TOOTH - METRIC |        |        |        |        |        |        |        |        |        |        |
|------------------------------|------------------------------------------------|------------------------------------------------------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------|--------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                              |                                                |                                                                                                      |                                                          |                                                          |        | 4mm                     | 6mm    | 8mm    | 10mm   | 12mm   | 14mm   | 16mm   | 18mm   | 20mm   | 25mm   |        |
| ISO-M                        | Precipitation                                  | 13-8, 15-5, 17-4PH                                                                                   | High Speed Profiling @ Full Length Axial / < .1 D Radial | 99                                                       | 9      | 0.0366                  | 0.0488 | 0.0610 | 0.0732 | 0.0975 | 0.1097 | 0.1219 | 0.1341 | 0.1463 | 0.1951 |        |
|                              |                                                |                                                                                                      | Profiling @ Full Length Axial / < .08 D Radial           | 76                                                       | 9      | 0.0274                  | 0.0366 | 0.0457 | 0.0549 | 0.0732 | 0.0823 | 0.0914 | 0.1006 | 0.1097 | 0.1463 |        |
|                              | Austenitic                                     | 302, 303, 304L, 316L                                                                                 | High Speed Profiling @ Full Length Axial / < .1 D Radial | 107                                                      | 9      | 0.0366                  | 0.0488 | 0.0610 | 0.0732 | 0.0975 | 0.1097 | 0.1219 | 0.1341 | 0.1463 | 0.1951 |        |
|                              |                                                |                                                                                                      | Profiling @ Full Length Axial / < .08 D Radial           | 84                                                       | 9      | 0.0274                  | 0.0366 | 0.0457 | 0.0549 | 0.0732 | 0.0823 | 0.0914 | 0.1006 | 0.1097 | 0.1463 |        |
|                              | Martensitic                                    | 403, 410, 416                                                                                        | High Speed Profiling @ Full Length Axial / < .1 D Radial | 114                                                      | 9      | 0.0411                  | 0.0549 | 0.0686 | 0.0823 | 0.1097 | 0.1234 | 0.1372 | 0.1509 | 0.1646 | 0.2195 |        |
|                              |                                                |                                                                                                      | Profiling @ Full Length Axial / < .08 D Radial           | 76                                                       | 9      | 0.0320                  | 0.0427 | 0.0533 | 0.0640 | 0.0853 | 0.0960 | 0.1067 | 0.1173 | 0.1280 | 0.1707 |        |
| ISO-S                        | Cobalt Base                                    | Stellite, Haynes 25, 188, X-40, L-605                                                                | High Speed Profiling @ Full Length Axial / < .1 D Radial | 41                                                       | 9      | 0.0102                  | 0.0127 | 0.0178 | 0.0203 | 0.0279 | 0.0305 | 0.0356 | 0.0381 | 0.0406 | 0.0559 |        |
|                              |                                                |                                                                                                      | Profiling @ Full Length Axial / < .08 D Radial           | 34                                                       | 9      | 0.0127                  | 0.0178 | 0.0203 | 0.0178 | 0.0330 | 0.0305 | 0.0406 | 0.0381 | 0.0508 | 0.0660 |        |
|                              | Nickel Base                                    | Inconel 600, 625, 718, Nickel 200, 270, Invar, Monel 400, 405, K-Monel, PermaNickel 300, Inconel 600 | High Speed Profiling @ Full Length Axial / < .1 D Radial | 37                                                       | 9      | 0.0127                  | 0.0178 | 0.0229 | 0.0254 | 0.0432 | 0.0381 | 0.0406 | 0.0483 | 0.0660 | 0.0660 |        |
|                              |                                                |                                                                                                      | Profiling @ Full Length Axial / < .08 D Radial           | 32                                                       | 9      | 0.0127                  | 0.0178 | 0.0229 | 0.0279 | 0.0457 | 0.0406 | 0.0457 | 0.0508 | 0.0559 | 0.0559 |        |
|                              | Iron Base                                      | Incoloy 800-802, Multimet N-155,Timken 16-26-6                                                       | High Speed Profiling @ Full Length Axial / < .1 D Radial | 32                                                       | 9      | 0.0127                  | 0.0203 | 0.0229 | 0.0330 | 0.0432 | 0.0457 | 0.0533 | 0.0559 | 0.0635 | 0.0838 |        |
|                              |                                                |                                                                                                      | Profiling @ Full Length Axial / < .08 D Radial           | 29                                                       | 9      | 0.0152                  | 0.0229 | 0.0254 | 0.0356 | 0.0483 | 0.0508 | 0.0584 | 0.0610 | 0.0711 | 0.0965 |        |
|                              | ISO-P                                          | High Strength Steels                                                                                 | 4140, 4340, 52100                                        | High Speed Profiling @ Full Length Axial / < .1 D Radial | 130    | 9                       | 0.0274 | 0.0366 | 0.0457 | 0.0549 | 0.0732 | 0.0823 | 0.0914 | 0.1006 | 0.1097 | 0.1463 |
|                              |                                                |                                                                                                      |                                                          | Profiling @ Full Length Axial / < .08 D Radial           | 107    | 9                       | 0.0183 | 0.0244 | 0.0305 | 0.0366 | 0.0488 | 0.0549 | 0.0610 | 0.0671 | 0.0732 | 0.0975 |
| High Alloy Steels Mold & Die |                                                | A-2, P20, 01, 02, 06, D2, H-13                                                                       | High Speed Profiling @ Full Length Axial / < .1 D Radial | 122                                                      | 9      | 0.0366                  | 0.0488 | 0.0610 | 0.0732 | 0.0975 | 0.1097 | 0.1219 | 0.1341 | 0.1463 | 0.1951 |        |
|                              |                                                |                                                                                                      | Profiling @ Full Length Axial / < .08 D Radial           | 91                                                       | 9      | 0.0274                  | 0.0366 | 0.0457 | 0.0549 | 0.0732 | 0.0823 | 0.0914 | 0.1006 | 0.1097 | 0.1463 |        |
| Medium Alloy Steels          |                                                | 200, 250, 300                                                                                        | High Speed Profiling @ Full Length Axial / < .1 D Radial | 114                                                      | 9      | 0.0366                  | 0.0488 | 0.0610 | 0.0732 | 0.0975 | 0.1097 | 0.1219 | 0.1341 | 0.1463 | 0.1951 |        |
|                              |                                                |                                                                                                      | Profiling @ Full Length Axial / < .08 D Radial           | 98                                                       | 9      | 0.0274                  | 0.0366 | 0.0457 | 0.0549 | 0.0732 | 0.0823 | 0.0914 | 0.1006 | 0.1097 | 0.1463 |        |
| Low Alloy Steels-Maraging    |                                                | 10XX, 11XX, 13XX                                                                                     | High Speed Profiling @ Full Length Axial / < .1 D Radial | 128                                                      | 9      | 0.0411                  | 0.0549 | 0.0686 | 0.0823 | 0.1097 | 0.1234 | 0.1372 | 0.1509 | 0.1646 | 0.2195 |        |
|                              |                                                |                                                                                                      | Profiling @ Full Length Axial / < .08 D Radial           | 107                                                      | 9      | 0.0274                  | 0.0366 | 0.0457 | 0.0549 | 0.0732 | 0.0823 | 0.0914 | 0.1006 | 0.1097 | 0.1463 |        |
| ISO-K                        | Ductile Iron                                   | ASTM A536, ASTM 897                                                                                  | High Speed Profiling @ Full Length Axial / < .1 D Radial | 114                                                      | 9      | 0.0457                  | 0.0610 | 0.0762 | 0.0914 | 0.1219 | 0.1372 | 0.1524 | 0.1676 | 0.1829 | 0.2438 |        |
|                              | Profiling @ Full Length Axial / < .08 D Radial |                                                                                                      | 91                                                       | 9                                                        | 0.0366 | 0.0488                  | 0.0610 | 0.0732 | 0.0975 | 0.1097 | 0.1219 | 0.1341 | 0.1463 | 0.1951 |        |        |
|                              | Cast Iron                                      | SAE J431, ASTM A48                                                                                   | High Speed Profiling @ Full Length Axial / < .1 D Radial | 130                                                      | 9      | 0.0686                  | 0.0914 | 0.1143 | 0.1372 | 0.1829 | 0.2057 | 0.2286 | 0.2515 | 0.2743 | 0.3658 |        |
|                              | Profiling @ Full Length Axial / < .08 D Radial |                                                                                                      | 99                                                       | 9                                                        | 0.0457 | 0.0610                  | 0.0762 | 0.0914 | 0.1219 | 0.1372 | 0.1524 | 0.1676 | 0.1829 | 0.2438 |        |        |
| ISO-S                        | Titanium Alloys                                | 6AL-4V, ASTM 1, 2, 3, 6AL-2S                                                                         | High Speed Profiling @ Full Length Axial / < .1 D Radial | 91                                                       | 9      | 0.0366                  | 0.0488 | 0.0610 | 0.0732 | 0.0975 | 0.1097 | 0.1219 | 0.1341 | 0.1463 | 0.1951 |        |
|                              |                                                |                                                                                                      | Profiling @ Full Length Axial / < .08 D Radial           | 69                                                       | 9      | 0.0274                  | 0.0366 | 0.0457 | 0.0549 | 0.0732 | 0.0823 | 0.0914 | 0.1006 | 0.1097 | 0.1463 |        |

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# General Purpose



| Carbide | 2 Flute<br>Center<br>Cutting | 30° Helix | Coat on<br>Demand | +.000 / -.002<br>1/8 and<br>Greater | ±.0005 Below<br>1/8 | Series: BCT2      |           |            |            |            |                      |                                                       |  |
|---------|------------------------------|-----------|-------------------|-------------------------------------|---------------------|-------------------|-----------|------------|------------|------------|----------------------|-------------------------------------------------------|--|
| CUT DIA | SHANK DIA                    | FLUTES    | LOC               | OAL                                 | CORNER              | PART NAME         | BRIGHT    | AITiN      | TiCN       | TiN        | PRICE LIST<br>BRIGHT | PRICE LIST<br>COATED<br>(DIA / DLC) Call<br>for Price |  |
| 1/32    | 1/8                          | 2         | 1/16              | 1-1/2                               | SQ                  | BCT2F-.0313-S-SQ  | BCT2-9000 | BCT2-90001 | BCT2-90002 | BCT2-90003 | \$ 13.72             | \$ 15.44                                              |  |
| 1/32    | 1/8                          | 2         | 1/16              | 1-1/2                               | BALL                | BCT2F-.0313-S-BN  | BCT2-9001 | BCT2-90011 | BCT2-90012 | BCT2-90013 | \$ 17.88             | \$ 20.12                                              |  |
| 1/32    | 1/8                          | 2         | 3/32              | 1-1/2                               | SQ                  | BCT2F-.0313-SQ    | BCT2-9002 | BCT2-90021 | BCT2-90022 | BCT2-90023 | \$ 13.52             | \$ 15.21                                              |  |
| 1/32    | 1/8                          | 2         | 3/32              | 1-1/2                               | BALL                | BCT2F-.0313-BN    | BCT2-9003 | BCT2-90031 | BCT2-90032 | BCT2-90033 | \$ 16.21             | \$ 18.24                                              |  |
| 3/64    | 1/8                          | 2         | 3/32              | 1-1/2                               | SQ                  | BCT2F-.0469-S-SQ  | BCT2-9004 | BCT2-90041 | BCT2-90042 | BCT2-90043 | \$ 13.51             | \$ 15.20                                              |  |
| 3/64    | 1/8                          | 2         | 3/32              | 1-1/2                               | BALL                | BCT2F-.0469-S-BN  | BCT2-9005 | BCT2-90051 | BCT2-90052 | BCT2-90053 | \$ 16.20             | \$ 18.23                                              |  |
| 3/64    | 1/8                          | 2         | 1/8               | 1-1/2                               | SQ                  | BCT2F-.0469-SQ    | BCT2-9006 | BCT2-90061 | BCT2-90062 | BCT2-90063 | \$ 13.52             | \$ 15.21                                              |  |
| 3/64    | 1/8                          | 2         | 1/8               | 1-1/2                               | BALL                | BCT2F-.0469-BN    | BCT2-9007 | BCT2-90071 | BCT2-90072 | BCT2-90073 | \$ 16.21             | \$ 18.24                                              |  |
| 1/16    | 1/8                          | 2         | 1/8               | 1-1/2                               | SQ                  | BCT2F-.0625-S-SQ  | BCT2-9008 | BCT2-90081 | BCT2-90082 | BCT2-90083 | \$ 11.07             | \$ 12.45                                              |  |
| 1/16    | 1/8                          | 2         | 1/8               | 1-1/2                               | BALL                | BCT2F-.0625-S-BN  | BCT2-9009 | BCT2-90091 | BCT2-90092 | BCT2-90093 | \$ 12.63             | \$ 14.21                                              |  |
| 1/16    | 1/8                          | 2         | 3/16              | 1-1/2                               | SQ                  | BCT2F-.0625-SQ    | BCT2-9010 | BCT2-90101 | BCT2-90102 | BCT2-90103 | \$ 11.16             | \$ 12.56                                              |  |
| 1/16    | 1/8                          | 2         | 3/16              | 1-1/2                               | BALL                | BCT2F-.0625-BN    | BCT2-9011 | BCT2-90111 | BCT2-90112 | BCT2-90113 | \$ 13.37             | \$ 15.04                                              |  |
| 1/16    | 1/8                          | 2         | 1/4               | 1-1/2                               | SQ                  | BCT2F-.0625-M-SQ  | BCT2-9012 | BCT2-90121 | BCT2-90122 | BCT2-90123 | \$ 11.71             | \$ 13.17                                              |  |
| 1/16    | 1/8                          | 2         | 3/8               | 1-1/2                               | SQ                  | BCT2F-.0625-L-SQ  | BCT2-9013 | BCT2-90131 | BCT2-90132 | BCT2-90133 | \$ 15.59             | \$ 17.54                                              |  |
| 1/16    | 1/8                          | 2         | 3/8               | 1-1/2                               | BALL                | BCT2F-.0625-L-BN  | BCT2-9014 | BCT2-90141 | BCT2-90142 | BCT2-90143 | \$ 14.43             | \$ 16.23                                              |  |
| 5/64    | 1/8                          | 2         | 1/8               | 1-1/2                               | SQ                  | BCT2F-.0781-S-SQ  | BCT2-9015 | BCT2-90151 | BCT2-90152 | BCT2-90153 | \$ 11.16             | \$ 12.56                                              |  |
| 5/64    | 1/8                          | 2         | 1/8               | 1-1/2                               | BALL                | BCT2F-.0781-S-BN  | BCT2-9016 | BCT2-90161 | BCT2-90162 | BCT2-90163 | \$ 11.16             | \$ 12.56                                              |  |
| 5/64    | 1/8                          | 2         | 3/16              | 1-1/2                               | SQ                  | BCT2F-.0781-SQ    | BCT2-9017 | BCT2-90171 | BCT2-90172 | BCT2-90173 | \$ 11.16             | \$ 12.56                                              |  |
| 5/64    | 1/8                          | 2         | 3/16              | 1-1/2                               | BALL                | BCT2F-.0781-BN    | BCT2-9018 | BCT2-90181 | BCT2-90182 | BCT2-90183 | \$ 13.37             | \$ 15.04                                              |  |
| 5/64    | 1/8                          | 2         | 1/4               | 1-1/2                               | SQ                  | BCT2F-.0781-M-SQ  | BCT2-9019 | BCT2-90191 | BCT2-90192 | BCT2-90193 | \$ 11.16             | \$ 12.56                                              |  |
| 3/32    | 1/8                          | 2         | 3/16              | 1-1/2                               | SQ                  | BCT2F-.0938-S-SQ  | BCT2-9020 | BCT2-90201 | BCT2-90202 | BCT2-90203 | \$ 10.77             | \$ 12.12                                              |  |
| 3/32    | 1/8                          | 2         | 3/16              | 1-1/2                               | BALL                | BCT2F-.0938-S-BN  | BCT2-9021 | BCT2-90211 | BCT2-90212 | BCT2-90213 | \$ 12.13             | \$ 13.65                                              |  |
| 3/32    | 1/8                          | 2         | 3/8               | 1-1/2                               | SQ                  | BCT2F-.0938-SQ    | BCT2-9022 | BCT2-90221 | BCT2-90222 | BCT2-90223 | \$ 11.16             | \$ 12.56                                              |  |
| 3/32    | 1/8                          | 2         | 3/8               | 1-1/2                               | 0.010               | BCT2F-.0938-R.010 | BCT2-9023 | BCT2-90231 | BCT2-90232 | BCT2-90233 | \$ 14.19             | \$ 15.96                                              |  |
| 3/32    | 1/8                          | 2         | 3/8               | 1-1/2                               | 0.015               | BCT2F-.0938-R015  | BCT2-9024 | BCT2-90241 | BCT2-90242 | BCT2-90243 | \$ 14.19             | \$ 15.96                                              |  |
| 3/32    | 1/8                          | 2         | 3/8               | 1-1/2                               | BALL                | BCT2F-.0938-BN    | BCT2-9025 | BCT2-90251 | BCT2-90252 | BCT2-90253 | \$ 13.37             | \$ 15.04                                              |  |
| 3/32    | 1/8                          | 2         | 1/2               | 1-1/2                               | SQ                  | BCT2F-.0938-T-SQ  | BCT2-9026 | BCT2-90261 | BCT2-90262 | BCT2-90263 | \$ 11.92             | \$ 13.41                                              |  |
| 3/32    | 1/8                          | 2         | 9/16              | 2                                   | SQ                  | BCT2F-.0938-M-SQ  | BCT2-9027 | BCT2-90271 | BCT2-90272 | BCT2-90273 | \$ 23.41             | \$ 26.34                                              |  |
| 7/64    | 1/8                          | 2         | 7/32              | 1-1/2                               | SQ                  | BCT2F-.1094-S-SQ  | BCT2-9028 | BCT2-90281 | BCT2-90282 | BCT2-90283 | \$ 11.00             | \$ 12.38                                              |  |
| 7/64    | 1/8                          | 2         | 3/8               | 1-1/2                               | SQ                  | BCT2F-.1094-SQ    | BCT2-9029 | BCT2-90291 | BCT2-90292 | BCT2-90293 | \$ 11.16             | \$ 12.56                                              |  |
| 7/64    | 1/8                          | 2         | 3/8               | 1-1/2                               | BALL                | BCT2F-.1094-BN    | BCT2-9030 | BCT2-90301 | BCT2-90302 | BCT2-90303 | \$ 13.37             | \$ 15.04                                              |  |
| 1/8     | 1/8                          | 2         | 1/4               | 1-1/2                               | SQ                  | BCT2F-.1250-S-SQ  | BCT2-9031 | BCT2-90311 | BCT2-90312 | BCT2-90313 | \$ 10.32             | \$ 11.61                                              |  |
| 1/8     | 1/8                          | 2         | 1/4               | 1-1/2                               | BALL                | BCT2F-.1250-S-BN  | BCT2-9032 | BCT2-90321 | BCT2-90322 | BCT2-90323 | \$ 11.62             | \$ 13.07                                              |  |
| 1/8     | 1/8                          | 2         | 1/2               | 1-1/2                               | SQ                  | BCT2F-.1250-SQ    | BCT2-9033 | BCT2-90331 | BCT2-90332 | BCT2-90333 | \$ 10.81             | \$ 12.16                                              |  |
| 1/8     | 1/8                          | 2         | 1/2               | 1-1/2                               | 0.010               | BCT2F-.1250-R.010 | BCT2-9034 | BCT2-90341 | BCT2-90342 | BCT2-90343 | \$ 14.19             | \$ 15.96                                              |  |
| 1/8     | 1/8                          | 2         | 1/2               | 1-1/2                               | 0.015               | BCT2F-.1250-R015  | BCT2-9035 | BCT2-90351 | BCT2-90352 | BCT2-90353 | \$ 14.19             | \$ 15.96                                              |  |
| 1/8     | 1/8                          | 2         | 1/2               | 1-1/2                               | 0.02                | BCT2F-.1250-R.020 | BCT2-9036 | BCT2-90361 | BCT2-90362 | BCT2-90363 | \$ 14.19             | \$ 15.96                                              |  |
| 1/8     | 1/8                          | 2         | 1/2               | 1-1/2                               | 0.030               | BCT2F-.1250-R.030 | BCT2-9037 | BCT2-90371 | BCT2-90372 | BCT2-90373 | \$ 14.19             | \$ 15.96                                              |  |
| 1/8     | 1/8                          | 2         | 1/2               | 1-1/2                               | BALL                | BCT2F-.1250-BN    | BCT2-9038 | BCT2-90381 | BCT2-90382 | BCT2-90383 | \$ 13.37             | \$ 15.04                                              |  |
| 1/8     | 1/8                          | 2         | 5/8               | 2                                   | SQ                  | BCT2F-.1250-T-SQ  | BCT2-9039 | BCT2-90391 | BCT2-90392 | BCT2-90393 | \$ 15.78             | \$ 17.75                                              |  |
| 1/8     | 1/8                          | 2         | 3/4               | 2-1/4                               | SQ                  | BCT2F-.1250-M-SQ  | BCT2-9040 | BCT2-90401 | BCT2-90402 | BCT2-90403 | \$ 16.32             | \$ 18.36                                              |  |
| 1/8     | 1/8                          | 2         | 3/4               | 2-1/4                               | BALL                | BCT2F-.1250-M-BN  | BCT2-9041 | BCT2-90411 | BCT2-90412 | BCT2-90413 | \$ 20.62             | \$ 23.20                                              |  |
| 1/8     | 1/8                          | 2         | 3/4               | 3                                   | SQ                  | BCT2F-.1250-L-SQ  | BCT2-9042 | BCT2-90421 | BCT2-90422 | BCT2-90423 | \$ 16.32             | \$ 18.36                                              |  |
| 1/8     | 1/8                          | 2         | 3/4               | 3                                   | BALL                | BCT2F-.1250-L-BN  | BCT2-9043 | BCT2-90431 | BCT2-90432 | BCT2-90433 | \$ 21.97             | \$ 24.72                                              |  |
| 1/8     | 1/8                          | 2         | 1                 | 3                                   | SQ                  | BCT2F-.1250-XL-SQ | BCT2-9044 | BCT2-90441 | BCT2-90442 | BCT2-90443 | \$ 20.72             | \$ 23.31                                              |  |
| 1/8     | 1/8                          | 2         | 1                 | 3                                   | BALL                | BCT2F-.1250-XL-BN | BCT2-9045 | BCT2-90451 | BCT2-90452 | BCT2-90453 | \$ 30.38             | \$ 34.18                                              |  |
| 5/32    | 3/16                         | 2         | 5/16              | 2                                   | SQ                  | BCT2F-.1563-S-SQ  | BCT2-9046 | BCT2-90461 | BCT2-90462 | BCT2-90463 | \$ 14.19             | \$ 15.96                                              |  |
| 5/32    | 3/16                         | 2         | 5/16              | 2                                   | BALL                | BCT2F-.1563-S-BN  | BCT2-9047 | BCT2-90471 | BCT2-90472 | BCT2-90473 | \$ 17.77             | \$ 19.99                                              |  |
| 5/32    | 3/16                         | 2         | 9/16              | 2                                   | SQ                  | BCT2F-.1563-SQ    | BCT2-9048 | BCT2-90481 | BCT2-90482 | BCT2-90483 | \$ 16.08             | \$ 18.09                                              |  |
| 5/32    | 3/16                         | 2         | 9/16              | 2                                   | BALL                | BCT2F-.1563-BN    | BCT2-9049 | BCT2-90491 | BCT2-90492 | BCT2-90493 | \$ 19.27             | \$ 21.68                                              |  |
| 5/32    | 3/16                         | 2         | 3/4               | 3                                   | SQ                  | BCT2F-.1563-L-SQ  | BCT2-9050 | BCT2-90501 | BCT2-90502 | BCT2-90503 | \$ 25.71             | \$ 28.92                                              |  |
| 5/32    | 3/16                         | 2         | 1-1/8             | 3                                   | SQ                  | BCT2F-.1563-XL-SQ | BCT2-9051 | BCT2-90511 | BCT2-90512 | BCT2-90513 | \$ 24.94             | \$ 28.06                                              |  |
| 3/16    | 3/16                         | 2         | 3/8               | 2                                   | SQ                  | BCT2F-.1875-S-SQ  | BCT2-9052 | BCT2-90521 | BCT2-90522 | BCT2-90523 | \$ 13.65             | \$ 15.36                                              |  |
| 3/16    | 3/16                         | 2         | 3/8               | 2                                   | BALL                | BCT2F-.1875-S-BN  | BCT2-9053 | BCT2-90531 | BCT2-90532 | BCT2-90533 | \$ 16.73             | \$ 18.82                                              |  |
| 3/16    | 3/16                         | 2         | 5/8               | 2                                   | SQ                  | BCT2F-.1875-SQ    | BCT2-9054 | BCT2-90541 | BCT2-90542 | BCT2-90543 | \$ 15.32             | \$ 17.24                                              |  |

General Purpose



| Carbide | 2 Flute<br>Center<br>Cutting | 30° Helix | Coat on<br>Demand | + .000 / - .002<br>1/8 and<br>Greater | ±.0005 Below<br>1/8 | Series: BCT2      |           |            |            |            |                      |                                                       |  |
|---------|------------------------------|-----------|-------------------|---------------------------------------|---------------------|-------------------|-----------|------------|------------|------------|----------------------|-------------------------------------------------------|--|
| CUT DIA | SHANK DIA                    | FLUTES    | LOC               | OAL                                   | CORNER              | PART NAME         | BRIGHT    | AITiN      | TiCN       | TiN        | PRICE LIST<br>BRIGHT | PRICE LIST<br>COATED<br>(DIA / DLC) Call<br>for Price |  |
| 3/16    | 3/16                         | 2         | 5/8               | 2                                     | 0.010               | BCT2F-.1875-R.010 | BCT2-9055 | BCT2-90551 | BCT2-90552 | BCT2-90553 | \$ 18.38             | \$ 20.68                                              |  |
| 3/16    | 3/16                         | 2         | 5/8               | 2                                     | 0.015               | BCT2F-.1875-R015  | BCT2-9056 | BCT2-90561 | BCT2-90562 | BCT2-90563 | \$ 18.38             | \$ 20.68                                              |  |
| 3/16    | 3/16                         | 2         | 5/8               | 2                                     | 0.020               | BCT2F-.1875-R.020 | BCT2-9057 | BCT2-90571 | BCT2-90572 | BCT2-90573 | \$ 18.38             | \$ 20.68                                              |  |
| 3/16    | 3/16                         | 2         | 5/8               | 2                                     | 0.030               | BCT2F-.1875-R.030 | BCT2-9058 | BCT2-90581 | BCT2-90582 | BCT2-90583 | \$ 18.38             | \$ 20.68                                              |  |
| 3/16    | 3/16                         | 2         | 5/8               | 2                                     | 0.045               | BCT2F-.1875-R.045 | BCT2-9059 | BCT2-90591 | BCT2-90592 | BCT2-90593 | \$ 18.38             | \$ 20.68                                              |  |
| 3/16    | 3/16                         | 2         | 5/8               | 2                                     | BALL                | BCT2F-.1875-BN    | BCT2-9060 | BCT2-90601 | BCT2-90602 | BCT2-90603 | \$ 19.27             | \$ 21.68                                              |  |
| 3/16    | 3/16                         | 2         | 3/4               | 2-1/2                                 | SQ                  | BCT2F-.1875-M-SQ  | BCT2-9061 | BCT2-90611 | BCT2-90612 | BCT2-90613 | \$ 20.75             | \$ 23.34                                              |  |
| 3/16    | 3/16                         | 2         | 3/4               | 2-1/2                                 | BALL                | BCT2F-.1875-M-BN  | BCT2-9062 | BCT2-90621 | BCT2-90622 | BCT2-90623 | \$ 33.73             | \$ 37.95                                              |  |
| 3/16    | 3/16                         | 2         | 3/4               | 3                                     | SQ                  | BCT2F-.1875-L-SQ  | BCT2-9063 | BCT2-90631 | BCT2-90632 | BCT2-90633 | \$ 20.75             | \$ 23.34                                              |  |
| 3/16    | 3/16                         | 2         | 3/4               | 3                                     | BALL                | BCT2F-.1875-L-BN  | BCT2-9064 | BCT2-90641 | BCT2-90642 | BCT2-90643 | \$ 33.97             | \$ 38.22                                              |  |
| 3/16    | 3/16                         | 2         | 1-1/8             | 3                                     | SQ                  | BCT2F-.1875-XL-SQ | BCT2-9065 | BCT2-90651 | BCT2-90652 | BCT2-90653 | \$ 24.18             | \$ 27.20                                              |  |
| 3/16    | 3/16                         | 2         | 1-1/8             | 3                                     | BALL                | BCT2F-.1875-XL-BN | BCT2-9066 | BCT2-90661 | BCT2-90662 | BCT2-90663 | \$ 33.97             | \$ 38.22                                              |  |
| 7/32    | 1/4                          | 2         | 1/2               | 2                                     | SQ                  | BCT2F-.2188-S-SQ  | BCT2-9067 | BCT2-90671 | BCT2-90672 | BCT2-90673 | \$ 17.59             | \$ 19.79                                              |  |
| 7/32    | 1/4                          | 2         | 1/2               | 2                                     | BALL                | BCT2F-.2188-S-BN  | BCT2-9068 | BCT2-90681 | BCT2-90682 | BCT2-90683 | \$ 20.19             | \$ 22.71                                              |  |
| 7/32    | 1/4                          | 2         | 5/8               | 2-1/2                                 | SQ                  | BCT2F-.2188-SQ    | BCT2-9069 | BCT2-90691 | BCT2-90692 | BCT2-90693 | \$ 20.99             | \$ 23.61                                              |  |
| 7/32    | 1/4                          | 2         | 5/8               | 2-1/2                                 | BALL                | BCT2F-.2188-BN    | BCT2-9070 | BCT2-90701 | BCT2-90702 | BCT2-90703 | \$ 25.45             | \$ 28.63                                              |  |
| 15/64   | 1/4                          | 2         | 3/4               | 2-1/2                                 | SQ                  | BCT2F-.2344-SQ    | BCT2-9071 | BCT2-90711 | BCT2-90712 | BCT2-90713 | \$ 20.69             | \$ 23.28                                              |  |
| 15/64   | 1/4                          | 2         | 3/4               | 2-1/2                                 | BALL                | BCT2F-.2344-BN    | BCT2-9072 | BCT2-90721 | BCT2-90722 | BCT2-90723 | \$ 25.45             | \$ 28.63                                              |  |
| 1/4     | 1/4                          | 2         | 1/2               | 2                                     | SQ                  | BCT2F-.2500-S-SQ  | BCT2-9073 | BCT2-90731 | BCT2-90732 | BCT2-90733 | \$ 16.06             | \$ 18.07                                              |  |
| 1/4     | 1/4                          | 2         | 1/2               | 2                                     | BALL                | BCT2F-.2500-S-BN  | BCT2-9074 | BCT2-90741 | BCT2-90742 | BCT2-90743 | \$ 19.75             | \$ 22.22                                              |  |
| 1/4     | 1/4                          | 2         | 3/4               | 2-1/2                                 | SQ                  | BCT2F-.2500-SQ    | BCT2-9075 | BCT2-90751 | BCT2-90752 | BCT2-90753 | \$ 19.77             | \$ 22.24                                              |  |
| 1/4     | 1/4                          | 2         | 3/4               | 2-1/2                                 | 0.01                | BCT2F-.2500-R.010 | BCT2-9076 | BCT2-90761 | BCT2-90762 | BCT2-90763 | \$ 22.68             | \$ 25.52                                              |  |
| 1/4     | 1/4                          | 2         | 3/4               | 2-1/2                                 | 0.015               | BCT2F-.2500-R015  | BCT2-9077 | BCT2-90771 | BCT2-90772 | BCT2-90773 | \$ 22.68             | \$ 25.52                                              |  |
| 1/4     | 1/4                          | 2         | 3/4               | 2-1/2                                 | 0.020               | BCT2F-.2500-R.020 | BCT2-9078 | BCT2-90781 | BCT2-90782 | BCT2-90783 | \$ 22.68             | \$ 25.52                                              |  |
| 1/4     | 1/4                          | 2         | 3/4               | 2-1/2                                 | 0.030               | BCT2F-.2500-R.030 | BCT2-9079 | BCT2-90791 | BCT2-90792 | BCT2-90793 | \$ 22.68             | \$ 25.52                                              |  |
| 1/4     | 1/4                          | 2         | 3/4               | 2-1/2                                 | 0.045               | BCT2F-.2500-R.045 | BCT2-9080 | BCT2-90801 | BCT2-90802 | BCT2-90803 | \$ 22.68             | \$ 25.52                                              |  |
| 1/4     | 1/4                          | 2         | 3/4               | 2-1/2                                 | 0.06                | BCT2F-.2500-R.060 | BCT2-9081 | BCT2-90811 | BCT2-90812 | BCT2-90813 | \$ 22.68             | \$ 25.52                                              |  |
| 1/4     | 1/4                          | 2         | 3/4               | 2-1/2                                 | BALL                | BCT2F-.2500-BN    | BCT2-9082 | BCT2-90821 | BCT2-90822 | BCT2-90823 | \$ 24.33             | \$ 27.37                                              |  |
| 1/4     | 1/4                          | 2         | 1-1/8             | 3                                     | SQ                  | BCT2F-.2500-L-SQ  | BCT2-9083 | BCT2-90831 | BCT2-90832 | BCT2-90833 | \$ 26.20             | \$ 29.48                                              |  |
| 1/4     | 1/4                          | 2         | 1-1/8             | 3                                     | BALL                | BCT2F-.2500-L-BN  | BCT2-9084 | BCT2-90841 | BCT2-90842 | BCT2-90843 | \$ 39.34             | \$ 44.26                                              |  |
| 1/4     | 1/4                          | 2         | 1-1/2             | 4                                     | SQ                  | BCT2F-.2500-XL-SQ | BCT2-9085 | BCT2-90851 | BCT2-90852 | BCT2-90853 | \$ 31.79             | \$ 35.76                                              |  |
| 1/4     | 1/4                          | 2         | 1-1/2             | 4                                     | BALL                | BCT2F-.2500-XL-BN | BCT2-9086 | BCT2-90861 | BCT2-90862 | BCT2-90863 | \$ 41.39             | \$ 46.56                                              |  |
| 5/16    | 5/16                         | 2         | 1/2               | 2                                     | SQ                  | BCT2F-.3125-S-SQ  | BCT2-9087 | BCT2-90871 | BCT2-90872 | BCT2-90873 | \$ 24.75             | \$ 27.84                                              |  |
| 5/16    | 5/16                         | 2         | 1/2               | 2                                     | BALL                | BCT2F-.3125-S-BN  | BCT2-9088 | BCT2-90881 | BCT2-90882 | BCT2-90883 | \$ 29.70             | \$ 33.41                                              |  |
| 5/16    | 5/16                         | 2         | 13/16             | 2-1/2                                 | SQ                  | BCT2F-.3125-SQ    | BCT2-9089 | BCT2-90891 | BCT2-90892 | BCT2-90893 | \$ 26.05             | \$ 29.31                                              |  |
| 5/16    | 5/16                         | 2         | 13/16             | 2-1/2                                 | 0.020               | BCT2F-.3125-R.020 | BCT2-9090 | BCT2-90901 | BCT2-90902 | BCT2-90903 | \$ 31.26             | \$ 35.17                                              |  |
| 5/16    | 5/16                         | 2         | 13/16             | 2-1/2                                 | 0.030               | BCT2F-.3125-R.030 | BCT2-9091 | BCT2-90911 | BCT2-90912 | BCT2-90913 | \$ 31.26             | \$ 35.17                                              |  |
| 5/16    | 5/16                         | 2         | 13/16             | 2-1/2                                 | 0.045               | BCT2F-.3125-R.045 | BCT2-9092 | BCT2-90921 | BCT2-90922 | BCT2-90923 | \$ 31.26             | \$ 35.17                                              |  |
| 5/16    | 5/16                         | 2         | 13/16             | 2-1/2                                 | BALL                | BCT2F-.3125-BN    | BCT2-9093 | BCT2-90931 | BCT2-90932 | BCT2-90933 | \$ 30.80             | \$ 34.65                                              |  |
| 5/16    | 5/16                         | 2         | 1-1/8             | 3                                     | SQ                  | BCT2F-.3125-L-SQ  | BCT2-9094 | BCT2-90941 | BCT2-90942 | BCT2-90943 | \$ 30.47             | \$ 34.28                                              |  |
| 5/16    | 5/16                         | 2         | 1-1/8             | 3                                     | BALL                | BCT2F-.3125-L-BN  | BCT2-9095 | BCT2-90951 | BCT2-90952 | BCT2-90953 | \$ 49.29             | \$ 55.45                                              |  |
| 5/16    | 5/16                         | 2         | 1-5/8             | 4                                     | SQ                  | BCT2F-.3125-XL-SQ | BCT2-9096 | BCT2-90961 | BCT2-90962 | BCT2-90963 | \$ 41.15             | \$ 46.29                                              |  |
| 5/16    | 5/16                         | 2         | 1-5/8             | 4                                     | BALL                | BCT2F-.3125-XL-BN | BCT2-9097 | BCT2-90971 | BCT2-90972 | BCT2-90973 | \$ 55.02             | \$ 61.90                                              |  |
| 3/8     | 3/8                          | 2         | 5/8               | 2                                     | SQ                  | BCT2F-.3750-S-SQ  | BCT2-9098 | BCT2-90981 | BCT2-90982 | BCT2-90983 | \$ 30.42             | \$ 34.22                                              |  |
| 3/8     | 3/8                          | 2         | 5/8               | 2                                     | BALL                | BCT2F-.3750-S-BN  | BCT2-9099 | BCT2-90991 | BCT2-90992 | BCT2-90993 | \$ 36.50             | \$ 41.06                                              |  |
| 3/8     | 3/8                          | 2         | 1                 | 2-1/2                                 | SQ                  | BCT2F-.3750-SQ    | BCT2-9100 | BCT2-91001 | BCT2-91002 | BCT2-91003 | \$ 30.80             | \$ 34.65                                              |  |
| 3/8     | 3/8                          | 2         | 1                 | 2-1/2                                 | 0.020               | BCT2F-.3750-R.020 | BCT2-9101 | BCT2-91011 | BCT2-91012 | BCT2-91013 | \$ 35.98             | \$ 40.48                                              |  |
| 3/8     | 3/8                          | 2         | 1                 | 2-1/2                                 | 0.030               | BCT2F-.3750-R.030 | BCT2-9102 | BCT2-91021 | BCT2-91022 | BCT2-91023 | \$ 35.98             | \$ 40.48                                              |  |
| 3/8     | 3/8                          | 2         | 1                 | 2-1/2                                 | 0.045               | BCT2F-.3750-R.045 | BCT2-9103 | BCT2-91031 | BCT2-91032 | BCT2-91033 | \$ 35.98             | \$ 40.48                                              |  |
| 3/8     | 3/8                          | 2         | 1                 | 2-1/2                                 | 0.060               | BCT2F-.3750-R.060 | BCT2-9104 | BCT2-91041 | BCT2-91042 | BCT2-91043 | \$ 35.98             | \$ 40.48                                              |  |
| 3/8     | 3/8                          | 2         | 1                 | 2-1/2                                 | BALL                | BCT2F-.3750-BN    | BCT2-9105 | BCT2-91051 | BCT2-91052 | BCT2-91053 | \$ 36.98             | \$ 41.60                                              |  |
| 3/8     | 3/8                          | 2         | 1-1/8             | 3                                     | SQ                  | BCT2F-.3750-L-SQ  | BCT2-9106 | BCT2-91061 | BCT2-91062 | BCT2-91063 | \$ 42.08             | \$ 47.34                                              |  |
| 3/8     | 3/8                          | 2         | 1-1/8             | 3                                     | BALL                | BCT2F-.3750-L-BN  | BCT2-9107 | BCT2-91071 | BCT2-91072 | BCT2-91073 | \$ 55.46             | \$ 62.39                                              |  |
| 3/8     | 3/8                          | 2         | 1-3/4             | 4                                     | SQ                  | BCT2F-.3750-XL-SQ | BCT2-9108 | BCT2-91081 | BCT2-91082 | BCT2-91083 | \$ 48.54             | \$ 54.61                                              |  |
| 3/8     | 3/8                          | 2         | 1-3/4             | 4                                     | BALL                | BCT2F-.3750-XL-BN | BCT2-9109 | BCT2-91091 | BCT2-91092 | BCT2-91093 | \$ 60.90             | \$ 68.51                                              |  |

# General Purpose



| Carbide | 2 Flute<br>Center<br>Cutting | 30° Helix | Coat on<br>Demand | + .000 / - .002<br>1/8 and<br>Greater | ±.0005 Below<br>1/8 | Series: BCT2      |           |            |            |            |                      |                                                       |  |
|---------|------------------------------|-----------|-------------------|---------------------------------------|---------------------|-------------------|-----------|------------|------------|------------|----------------------|-------------------------------------------------------|--|
| CUT DIA | SHANK DIA                    | FLUTES    | LOC               | OAL                                   | CORNER              | PART NAME         | BRIGHT    | AITiN      | TiCN       | TiN        | PRICE LIST<br>BRIGHT | PRICE LIST<br>COATED<br>(DIA / DLC) Call<br>for Price |  |
| 7/16    | 7/16                         | 2         | 5/8               | 2-1/2                                 | SQ                  | BCT2F-.4375-S-SQ  | BCT2-9110 | BCT2-91101 | BCT2-91102 | BCT2-91103 | \$ 38.21             | \$ 42.99                                              |  |
| 7/16    | 7/16                         | 2         | 5/8               | 2-1/2                                 | BALL                | BCT2F-.4375-S-BN  | BCT2-9111 | BCT2-91111 | BCT2-91112 | BCT2-91113 | \$ 48.96             | \$ 55.08                                              |  |
| 7/16    | 7/16                         | 2         | 1                 | 2-3/4                                 | SQ                  | BCT2F-.4375-SQ    | BCT2-9112 | BCT2-91121 | BCT2-91122 | BCT2-91123 | \$ 42.42             | \$ 47.72                                              |  |
| 7/16    | 7/16                         | 2         | 1                 | 2-3/4                                 | BALL                | BCT2F-.4375-BN    | BCT2-9113 | BCT2-91131 | BCT2-91132 | BCT2-91133 | \$ 54.00             | \$ 60.75                                              |  |
| 7/16    | 7/16                         | 2         | 2                 | 4                                     | SQ                  | BCT2F-.4375-L-SQ  | BCT2-9114 | BCT2-91141 | BCT2-91142 | BCT2-91143 | \$ 68.12             | \$ 76.64                                              |  |
| 7/16    | 7/16                         | 2         | 2                 | 4                                     | BALL                | BCT2F-.4375-L-BN  | BCT2-9115 | BCT2-91151 | BCT2-91152 | BCT2-91153 | \$ 86.63             | \$ 97.46                                              |  |
| 7/16    | 7/16                         | 2         | 3                 | 6                                     | SQ                  | BCT2F-.4375-XL-SQ | BCT2-9116 | BCT2-91161 | BCT2-91162 | BCT2-91163 | \$ 91.19             | \$ 102.59                                             |  |
| 7/16    | 7/16                         | 2         | 3                 | 6                                     | BALL                | BCT2F-.4375-XL-BN | BCT2-9117 | BCT2-91171 | BCT2-91172 | BCT2-91173 | \$ 112.58            | \$ 126.65                                             |  |
| 1/2     | 1/2                          | 2         | 5/8               | 2-1/2                                 | SQ                  | BCT2F-.5000-S-SQ  | BCT2-9118 | BCT2-91181 | BCT2-91182 | BCT2-91183 | \$ 50.84             | \$ 57.20                                              |  |
| 1/2     | 1/2                          | 2         | 5/8               | 2-1/2                                 | BALL                | BCT2F-.5000-S-BN  | BCT2-9119 | BCT2-91191 | BCT2-91192 | BCT2-91193 | \$ 59.21             | \$ 66.61                                              |  |
| 1/2     | 1/2                          | 2         | 1                 | 3                                     | SQ                  | BCT2F-.5000-SQ    | BCT2-9120 | BCT2-91201 | BCT2-91202 | BCT2-91203 | \$ 52.15             | \$ 58.67                                              |  |
| 1/2     | 1/2                          | 2         | 1                 | 3                                     | 0.020               | BCT2F-.5000-R.020 | BCT2-9121 | BCT2-91211 | BCT2-91212 | BCT2-91213 | \$ 62.58             | \$ 70.40                                              |  |
| 1/2     | 1/2                          | 2         | 1                 | 3                                     | 0.030               | BCT2F-.5000-R.030 | BCT2-9122 | BCT2-91221 | BCT2-91222 | BCT2-91223 | \$ 62.58             | \$ 70.40                                              |  |
| 1/2     | 1/2                          | 2         | 1                 | 3                                     | 0.045               | BCT2F-.5000-R.045 | BCT2-9123 | BCT2-91231 | BCT2-91232 | BCT2-91233 | \$ 62.58             | \$ 70.40                                              |  |
| 1/2     | 1/2                          | 2         | 1                 | 3                                     | 0.060               | BCT2F-.5000-R.060 | BCT2-9124 | BCT2-91241 | BCT2-91242 | BCT2-91243 | \$ 62.58             | \$ 70.40                                              |  |
| 1/2     | 1/2                          | 2         | 1                 | 3                                     | 0.090               | BCT2F-.5000-R.090 | BCT2-9125 | BCT2-91251 | BCT2-91252 | BCT2-91253 | \$ 62.58             | \$ 70.40                                              |  |
| 1/2     | 1/2                          | 2         | 1                 | 3                                     | 0.125               | BCT2F-.5000-R.125 | BCT2-9126 | BCT2-91261 | BCT2-91262 | BCT2-91263 | \$ 62.58             | \$ 70.40                                              |  |
| 1/2     | 1/2                          | 2         | 1                 | 3                                     | BALL                | BCT2F-.5000-BN    | BCT2-9127 | BCT2-91271 | BCT2-91272 | BCT2-91273 | \$ 64.47             | \$ 72.53                                              |  |
| 1/2     | 1/2                          | 2         | 1-1/4             | 3                                     | SQ                  | BCT2F-.5000-T-SQ  | BCT2-9128 | BCT2-91281 | BCT2-91282 | BCT2-91283 | \$ 65.18             | \$ 73.33                                              |  |
| 1/2     | 1/2                          | 2         | 1-1/2             | 4                                     | SQ                  | BCT2F-.5000-M-SQ  | BCT2-9129 | BCT2-91291 | BCT2-91292 | BCT2-91293 | \$ 53.70             | \$ 60.41                                              |  |
| 1/2     | 1/2                          | 2         | 2                 | 4                                     | SQ                  | BCT2F-.5000-L-SQ  | BCT2-9130 | BCT2-91301 | BCT2-91302 | BCT2-91303 | \$ 66.61             | \$ 74.94                                              |  |
| 1/2     | 1/2                          | 2         | 2                 | 4                                     | BALL                | BCT2F-.5000-L-BN  | BCT2-9131 | BCT2-91311 | BCT2-91312 | BCT2-91313 | \$ 88.48             | \$ 99.54                                              |  |
| 1/2     | 1/2                          | 2         | 3                 | 6                                     | SQ                  | BCT2F-.5000-XL-SQ | BCT2-9132 | BCT2-91321 | BCT2-91322 | BCT2-91323 | \$ 103.47            | \$ 116.40                                             |  |
| 1/2     | 1/2                          | 2         | 3                 | 6                                     | BALL                | BCT2F-.5000-XL-BN | BCT2-9133 | BCT2-91331 | BCT2-91332 | BCT2-91333 | \$ 125.33            | \$ 141.00                                             |  |
| 9/16    | 9/16                         | 2         | 1-1/4             | 3-1/2                                 | SQ                  | BCT2F-.5625-SQ    | BCT2-9134 | BCT2-91341 | BCT2-91342 | BCT2-91343 | \$ 90.62             | \$ 101.95                                             |  |
| 9/16    | 9/16                         | 2         | 1-1/4             | 3-1/2                                 | BALL                | BCT2F-.5625-BN    | BCT2-9135 | BCT2-91351 | BCT2-91352 | BCT2-91353 | \$ 110.81            | \$ 124.66                                             |  |
| 9/16    | 9/16                         | 2         | 3                 | 6                                     | SQ                  | BCT2F-.5625-XL-SQ | BCT2-9136 | BCT2-91361 | BCT2-91362 | BCT2-91363 | \$ 169.57            | \$ 190.77                                             |  |
| 5/8     | 5/8                          | 2         | 3/4               | 3                                     | SQ                  | BCT2F-.6250-S-SQ  | BCT2-9137 | BCT2-91371 | BCT2-91372 | BCT2-91373 | \$ 89.09             | \$ 100.23                                             |  |
| 5/8     | 5/8                          | 2         | 3/4               | 3                                     | BALL                | BCT2F-.6250-S-BN  | BCT2-9138 | BCT2-91381 | BCT2-91382 | BCT2-91383 | \$ 114.93            | \$ 129.30                                             |  |
| 5/8     | 5/8                          | 2         | 1-1/4             | 3-1/2                                 | SQ                  | BCT2F-.6250-SQ    | BCT2-9139 | BCT2-91391 | BCT2-91392 | BCT2-91393 | \$ 99.41             | \$ 111.84                                             |  |
| 5/8     | 5/8                          | 2         | 1-1/4             | 3-1/2                                 | 0.020               | BCT2F-.6250-R.020 | BCT2-9140 | BCT2-91401 | BCT2-91402 | BCT2-91403 | \$ 119.20            | \$ 134.10                                             |  |
| 5/8     | 5/8                          | 2         | 1-1/4             | 3-1/2                                 | 0.03                | BCT2F-.6250-R.030 | BCT2-9141 | BCT2-91411 | BCT2-91412 | BCT2-91413 | \$ 119.20            | \$ 134.10                                             |  |
| 5/8     | 5/8                          | 2         | 1-1/4             | 3-1/2                                 | 0.045               | BCT2F-.6250-R.045 | BCT2-9142 | BCT2-91421 | BCT2-91422 | BCT2-91423 | \$ 119.20            | \$ 134.10                                             |  |
| 5/8     | 5/8                          | 2         | 1-1/4             | 3-1/2                                 | 0.060               | BCT2F-.6250-R.060 | BCT2-9143 | BCT2-91431 | BCT2-91432 | BCT2-91433 | \$ 119.20            | \$ 134.10                                             |  |
| 5/8     | 5/8                          | 2         | 1-1/4             | 3-1/2                                 | 0.090               | BCT2F-.6250-R.090 | BCT2-9144 | BCT2-91441 | BCT2-91442 | BCT2-91443 | \$ 119.20            | \$ 134.10                                             |  |
| 5/8     | 5/8                          | 2         | 1-1/4             | 3-1/2                                 | BALL                | BCT2F-.6250-BN    | BCT2-9145 | BCT2-91451 | BCT2-91452 | BCT2-91453 | \$ 123.02            | \$ 138.40                                             |  |
| 5/8     | 5/8                          | 2         | 2-1/4             | 5                                     | SQ                  | BCT2F-.6250-L-SQ  | BCT2-9146 | BCT2-91461 | BCT2-91462 | BCT2-91463 | \$ 132.36            | \$ 148.91                                             |  |
| 5/8     | 5/8                          | 2         | 2-1/4             | 5                                     | BALL                | BCT2F-.6250-L-BN  | BCT2-9147 | BCT2-91471 | BCT2-91472 | BCT2-91473 | \$ 177.42            | \$ 199.60                                             |  |
| 5/8     | 5/8                          | 2         | 3                 | 6                                     | SQ                  | BCT2F-.6250-XL-SQ | BCT2-9148 | BCT2-91481 | BCT2-91482 | BCT2-91483 | \$ 155.11            | \$ 174.50                                             |  |
| 5/8     | 5/8                          | 2         | 3                 | 6                                     | BALL                | BCT2F-.6250-XL-BN | BCT2-9149 | BCT2-91491 | BCT2-91492 | BCT2-91493 | \$ 193.20            | \$ 217.35                                             |  |
| 3/4     | 3/4                          | 2         | 1                 | 3                                     | SQ                  | BCT2F-.7500-S-SQ  | BCT2-9150 | BCT2-91501 | BCT2-91502 | BCT2-91503 | \$ 130.38            | \$ 146.68                                             |  |
| 3/4     | 3/4                          | 2         | 1                 | 3                                     | BALL                | BCT2F-.7500-S-BN  | BCT2-9151 | BCT2-91511 | BCT2-91512 | BCT2-91513 | \$ 169.76            | \$ 190.98                                             |  |
| 3/4     | 3/4                          | 2         | 1-1/2             | 4                                     | SQ                  | BCT2F-.7500-SQ    | BCT2-9152 | BCT2-91521 | BCT2-91522 | BCT2-91523 | \$ 149.84            | \$ 168.57                                             |  |
| 3/4     | 3/4                          | 2         | 1-1/2             | 4                                     | 0.02                | BCT2F-.7500-R.020 | BCT2-9153 | BCT2-91531 | BCT2-91532 | BCT2-91533 | \$ 180.49            | \$ 203.05                                             |  |
| 3/4     | 3/4                          | 2         | 1-1/2             | 4                                     | 0.030               | BCT2F-.7500-R.030 | BCT2-9154 | BCT2-91541 | BCT2-91542 | BCT2-91543 | \$ 180.49            | \$ 203.05                                             |  |
| 3/4     | 3/4                          | 2         | 1-1/2             | 4                                     | 0.045               | BCT2F-.7500-R.045 | BCT2-9155 | BCT2-91551 | BCT2-91552 | BCT2-91553 | \$ 180.49            | \$ 203.05                                             |  |
| 3/4     | 3/4                          | 2         | 1-1/2             | 4                                     | 0.060               | BCT2F-.7500-R.060 | BCT2-9156 | BCT2-91561 | BCT2-91562 | BCT2-91563 | \$ 180.49            | \$ 203.05                                             |  |
| 3/4     | 3/4                          | 2         | 1-1/2             | 4                                     | 0.090               | BCT2F-.7500-R.090 | BCT2-9157 | BCT2-91571 | BCT2-91572 | BCT2-91573 | \$ 180.49            | \$ 203.05                                             |  |
| 3/4     | 3/4                          | 2         | 1-1/2             | 4                                     | 0.125               | BCT2F-.7500-R.125 | BCT2-9158 | BCT2-91581 | BCT2-91582 | BCT2-91583 | \$ 180.49            | \$ 203.05                                             |  |
| 3/4     | 3/4                          | 2         | 1-1/2             | 4                                     | BALL                | BCT2F-.7500-BN    | BCT2-9159 | BCT2-91591 | BCT2-91592 | BCT2-91593 | \$ 182.76            | \$ 205.61                                             |  |
| 3/4     | 3/4                          | 2         | 2-1/4             | 5                                     | SQ                  | BCT2F-.7500-L-SQ  | BCT2-9160 | BCT2-91601 | BCT2-91602 | BCT2-91603 | \$ 195.07            | \$ 219.45                                             |  |
| 3/4     | 3/4                          | 2         | 2-1/4             | 5                                     | BALL                | BCT2F-.7500-L-BN  | BCT2-9161 | BCT2-91611 | BCT2-91612 | BCT2-91613 | \$ 294.28            | \$ 331.07                                             |  |
| 3/4     | 3/4                          | 2         | 3                 | 6                                     | SQ                  | BCT2F-.7500-XL-SQ | BCT2-9162 | BCT2-91621 | BCT2-91622 | BCT2-91623 | \$ 246.42            | \$ 277.22                                             |  |
| 3/4     | 3/4                          | 2         | 3                 | 6                                     | BALL                | BCT2F-.7500-XL-BN | BCT2-9163 | BCT2-91631 | BCT2-91632 | BCT2-91633 | \$ 319.07            | \$ 358.95                                             |  |

# General Purpose



| Carbide | 3 Flute<br>Center<br>Cutting | 30° Helix | Coat on<br>Demand | + .000 / -.002<br>1/8 and<br>Greater | ±.0005 Below<br>1/8 | Series: BCT3      |           |            |            |            |                      |                                                       |
|---------|------------------------------|-----------|-------------------|--------------------------------------|---------------------|-------------------|-----------|------------|------------|------------|----------------------|-------------------------------------------------------|
| CUT DIA | SHANK DIA                    | FLUTES    | LOC               | OAL                                  | CORNER              | PART NAME         | BRIGHT    | AITiN      | TiCN       | TiN        | PRICE LIST<br>BRIGHT | PRICE LIST<br>COATED<br>(DIA / DLC) Call<br>for Price |
| 1/32    | 1/8                          | 3         | 1/16              | 1-1/2                                | SQ                  | BCT3F-.0313-S-SQ  | BCT3-8000 | BCT3-80001 | BCT3-80002 | BCT3-80003 | \$ 13.72             | \$ 15.44                                              |
| 1/32    | 1/8                          | 3         | 1/16              | 1-1/2                                | BALL                | BCT3F-.0313-S-BN  | BCT3-8001 | BCT3-80011 | BCT3-80012 | BCT3-80013 | \$ 17.88             | \$ 20.12                                              |
| 1/32    | 1/8                          | 3         | 3/32              | 1-1/2                                | SQ                  | BCT3F-.0313-SQ    | BCT3-8002 | BCT3-80021 | BCT3-80022 | BCT3-80023 | \$ 11.16             | \$ 12.56                                              |
| 1/32    | 1/8                          | 3         | 3/32              | 1-1/2                                | BALL                | BCT3F-.0313-BN    | BCT3-8003 | BCT3-80031 | BCT3-80032 | BCT3-80033 | \$ 16.21             | \$ 18.24                                              |
| 3/64    | 1/8                          | 3         | 3/32              | 1-1/2                                | SQ                  | BCT3F-.0469-S-SQ  | BCT3-8004 | BCT3-80041 | BCT3-80042 | BCT3-80043 | \$ 13.52             | \$ 15.21                                              |
| 3/64    | 1/8                          | 3         | 3/32              | 1-1/2                                | BALL                | BCT3F-.0469-S-BN  | BCT3-8005 | BCT3-80051 | BCT3-80052 | BCT3-80053 | \$ 16.20             | \$ 18.23                                              |
| 3/64    | 1/8                          | 3         | 1/8               | 1-1/2                                | SQ                  | BCT3F-.0469-SQ    | BCT3-8006 | BCT3-80061 | BCT3-80062 | BCT3-80063 | \$ 11.16             | \$ 12.56                                              |
| 3/64    | 1/8                          | 3         | 1/8               | 1-1/2                                | BALL                | BCT3F-.0469-BN    | BCT3-8007 | BCT3-80071 | BCT3-80072 | BCT3-80073 | \$ 16.21             | \$ 18.24                                              |
| 1/16    | 1/8                          | 3         | 1/8               | 1-1/2                                | SQ                  | BCT3F-.0625-S-SQ  | BCT3-8008 | BCT3-80081 | BCT3-80082 | BCT3-80083 | \$ 11.07             | \$ 12.45                                              |
| 1/16    | 1/8                          | 3         | 1/8               | 1-1/2                                | BALL                | BCT3F-.0625-S-BN  | BCT3-8009 | BCT3-80091 | BCT3-80092 | BCT3-80093 | \$ 12.63             | \$ 14.21                                              |
| 1/16    | 1/8                          | 3         | 3/16              | 1-1/2                                | SQ                  | BCT3F-.0625-SQ    | BCT3-8010 | BCT3-80101 | BCT3-80102 | BCT3-80103 | \$ 11.16             | \$ 12.56                                              |
| 1/16    | 1/8                          | 3         | 3/16              | 1-1/2                                | BALL                | BCT3F-.0625-BN    | BCT3-8011 | BCT3-80111 | BCT3-80112 | BCT3-80113 | \$ 13.37             | \$ 15.04                                              |
| 1/16    | 1/8                          | 3         | 1/4               | 1-1/2                                | SQ                  | BCT3F-.0625-M-SQ  | BCT3-8012 | BCT3-80121 | BCT3-80122 | BCT3-80123 | \$ 11.66             | \$ 13.12                                              |
| 5/64    | 1/8                          | 3         | 3/16              | 1-1/2                                | SQ                  | BCT3F-.0781-SQ    | BCT3-8013 | BCT3-80131 | BCT3-80132 | BCT3-80133 | \$ 11.16             | \$ 12.56                                              |
| 5/64    | 1/8                          | 3         | 3/16              | 1-1/2                                | BALL                | BCT3F-.0781-BN    | BCT3-8014 | BCT3-80141 | BCT3-80142 | BCT3-80143 | \$ 11.16             | \$ 12.56                                              |
| 5/64    | 1/8                          | 3         | 1/4               | 1-1/2                                | SQ                  | BCT3F-.0781-M-SQ  | BCT3-8015 | BCT3-80151 | BCT3-80152 | BCT3-80153 | \$ 11.16             | \$ 12.56                                              |
| 3/32    | 1/8                          | 3         | 3/16              | 1-1/2                                | SQ                  | BCT3F-.0938-S-SQ  | BCT3-8016 | BCT3-80161 | BCT3-80162 | BCT3-80163 | \$ 10.77             | \$ 12.12                                              |
| 3/32    | 1/8                          | 3         | 3/16              | 1-1/2                                | BALL                | BCT3F-.0938-S-BN  | BCT3-8017 | BCT3-80171 | BCT3-80172 | BCT3-80173 | \$ 12.13             | \$ 13.65                                              |
| 3/32    | 1/8                          | 3         | 3/8               | 1-1/2                                | SQ                  | BCT3F-.0938-SQ    | BCT3-8018 | BCT3-80181 | BCT3-80182 | BCT3-80183 | \$ 11.16             | \$ 12.56                                              |
| 3/32    | 1/8                          | 3         | 3/8               | 1-1/2                                | BALL                | BCT3F-.0938-BN    | BCT3-8019 | BCT3-80191 | BCT3-80192 | BCT3-80193 | \$ 13.37             | \$ 15.04                                              |
| 7/64    | 1/8                          | 3         | 3/8               | 1-1/2                                | SQ                  | BCT3F-.1094-SQ    | BCT3-8020 | BCT3-80201 | BCT3-80202 | BCT3-80203 | \$ 11.33             | \$ 12.75                                              |
| 7/64    | 1/8                          | 3         | 3/8               | 1-1/2                                | BALL                | BCT3F-.1094-BN    | BCT3-8021 | BCT3-80211 | BCT3-80212 | BCT3-80213 | \$ 13.37             | \$ 15.04                                              |
| 1/8     | 1/8                          | 3         | 1/4               | 1-1/2                                | SQ                  | BCT3F-.1250-S-SQ  | BCT3-8022 | BCT3-80221 | BCT3-80222 | BCT3-80223 | \$ 10.32             | \$ 11.61                                              |
| 1/8     | 1/8                          | 3         | 1/4               | 1-1/2                                | BALL                | BCT3F-.1250-S-BN  | BCT3-8023 | BCT3-80231 | BCT3-80232 | BCT3-80233 | \$ 11.62             | \$ 13.07                                              |
| 1/8     | 1/8                          | 3         | 1/2               | 1-1/2                                | SQ                  | BCT3F-.1250-SQ    | BCT3-8024 | BCT3-80241 | BCT3-80242 | BCT3-80243 | \$ 10.81             | \$ 12.16                                              |
| 1/8     | 1/8                          | 3         | 1/2               | 1-1/2                                | BALL                | BCT3F-.1250-BN    | BCT3-8025 | BCT3-80251 | BCT3-80252 | BCT3-80253 | \$ 13.37             | \$ 15.04                                              |
| 1/8     | 1/8                          | 3         | 3/4               | 2-1/4                                | SQ                  | BCT3F-.1250-M-SQ  | BCT3-8026 | BCT3-80261 | BCT3-80262 | BCT3-80263 | \$ 16.32             | \$ 18.36                                              |
| 1/8     | 1/8                          | 3         | 3/4               | 2-1/4                                | BALL                | BCT3F-.1250-M-BN  | BCT3-8027 | BCT3-80271 | BCT3-80272 | BCT3-80273 | \$ 20.80             | \$ 23.40                                              |
| 1/8     | 1/8                          | 3         | 3/4               | 3                                    | SQ                  | BCT3F-.1250-L-SQ  | BCT3-8028 | BCT3-80281 | BCT3-80282 | BCT3-80283 | \$ 16.32             | \$ 18.36                                              |
| 1/8     | 1/8                          | 3         | 3/4               | 3                                    | BALL                | BCT3F-.1250-L-BN  | BCT3-8029 | BCT3-80291 | BCT3-80292 | BCT3-80293 | \$ 21.97             | \$ 24.72                                              |
| 1/8     | 1/8                          | 3         | 1                 | 3                                    | SQ                  | BCT3F-.1250-XL-SQ | BCT3-8030 | BCT3-80301 | BCT3-80302 | BCT3-80303 | \$ 20.72             | \$ 23.31                                              |
| 1/8     | 1/8                          | 3         | 1                 | 3                                    | BALL                | BCT3F-.1250-XL-BN | BCT3-8031 | BCT3-80311 | BCT3-80312 | BCT3-80313 | \$ 30.38             | \$ 34.18                                              |
| 5/32    | 3/16                         | 3         | 9/16              | 2                                    | SQ                  | BCT3F-.1563-SQ    | BCT3-8032 | BCT3-80321 | BCT3-80322 | BCT3-80323 | \$ 16.08             | \$ 18.09                                              |
| 5/32    | 3/16                         | 3         | 9/16              | 2                                    | BALL                | BCT3F-.1563-BN    | BCT3-8033 | BCT3-80331 | BCT3-80332 | BCT3-80333 | \$ 19.27             | \$ 21.68                                              |
| 3/16    | 3/16                         | 3         | 3/8               | 2                                    | SQ                  | BCT3F-.1875-S-SQ  | BCT3-8034 | BCT3-80341 | BCT3-80342 | BCT3-80343 | \$ 13.65             | \$ 15.36                                              |
| 3/16    | 3/16                         | 3         | 5/16              | 2                                    | BALL                | BCT3F-.1875-S-BN  | BCT3-8035 | BCT3-80351 | BCT3-80352 | BCT3-80353 | \$ 16.73             | \$ 18.82                                              |
| 3/16    | 3/16                         | 3         | 5/8               | 2                                    | SQ                  | BCT3F-.1875-SQ    | BCT3-8036 | BCT3-80361 | BCT3-80362 | BCT3-80363 | \$ 15.32             | \$ 17.24                                              |
| 3/16    | 3/16                         | 3         | 5/8               | 2                                    | BALL                | BCT3F-.1875-BN    | BCT3-8037 | BCT3-80371 | BCT3-80372 | BCT3-80373 | \$ 19.27             | \$ 21.68                                              |
| 3/16    | 3/16                         | 3         | 3/4               | 2-1/2                                | SQ                  | BCT3F-.1875-M-SQ  | BCT3-8038 | BCT3-80381 | BCT3-80382 | BCT3-80383 | \$ 20.75             | \$ 23.34                                              |
| 3/16    | 3/16                         | 3         | 3/4               | 2-1/2                                | BALL                | BCT3F-.1875-M-BN  | BCT3-8039 | BCT3-80391 | BCT3-80392 | BCT3-80393 | \$ 33.73             | \$ 37.95                                              |
| 3/16    | 3/16                         | 3         | 3/4               | 3                                    | SQ                  | BCT3F-.1875-L-SQ  | BCT3-8040 | BCT3-80401 | BCT3-80402 | BCT3-80403 | \$ 20.75             | \$ 23.34                                              |
| 3/16    | 3/16                         | 3         | 3/4               | 3                                    | BALL                | BCT3F-.1875-L-BN  | BCT3-8041 | BCT3-80411 | BCT3-80412 | BCT3-80413 | \$ 33.97             | \$ 38.22                                              |
| 3/16    | 3/16                         | 3         | 1-1/8             | 3                                    | SQ                  | BCT3F-.1875-XL-SQ | BCT3-8042 | BCT3-80421 | BCT3-80422 | BCT3-80423 | \$ 23.19             | \$ 26.09                                              |
| 3/16    | 3/16                         | 3         | 1-1/8             | 3                                    | BALL                | BCT3F-.1875-XL-BN | BCT3-8043 | BCT3-80431 | BCT3-80432 | BCT3-80433 | \$ 33.99             | \$ 38.24                                              |
| 7/32    | 1/4                          | 3         | 5/8               | 2-1/2                                | SQ                  | BCT3F-.2344-SQ    | BCT3-8044 | BCT3-80441 | BCT3-80442 | BCT3-80443 | \$ 20.99             | \$ 23.61                                              |
| 7/32    | 1/4                          | 3         | 5/8               | 2-1/2                                | BALL                | BCT3F-.2344-BN    | BCT3-8045 | BCT3-80451 | BCT3-80452 | BCT3-80453 | \$ 25.45             | \$ 28.63                                              |
| 1/4     | 1/4                          | 3         | 1/2               | 2                                    | SQ                  | BCT3F-.2500-S-SQ  | BCT3-8046 | BCT3-80461 | BCT3-80462 | BCT3-80463 | \$ 16.06             | \$ 18.07                                              |
| 1/4     | 1/4                          | 3         | 1/2               | 2                                    | BALL                | BCT3F-.2500-S-BN  | BCT3-8047 | BCT3-80471 | BCT3-80472 | BCT3-80473 | \$ 19.69             | \$ 22.15                                              |
| 1/4     | 1/4                          | 3         | 3/4               | 2-1/2                                | SQ                  | BCT3F-.2500-SQ    | BCT3-8048 | BCT3-80481 | BCT3-80482 | BCT3-80483 | \$ 19.77             | \$ 22.24                                              |
| 1/4     | 1/4                          | 3         | 3/4               | 2-1/2                                | BALL                | BCT3F-.2500-BN    | BCT3-8049 | BCT3-80491 | BCT3-80492 | BCT3-80493 | \$ 24.33             | \$ 27.37                                              |
| 1/4     | 1/4                          | 3         | 1-1/8             | 3                                    | SQ                  | BCT3F-.2500-L-SQ  | BCT3-8050 | BCT3-80501 | BCT3-80502 | BCT3-80503 | \$ 26.20             | \$ 29.48                                              |
| 1/4     | 1/4                          | 3         | 1-1/8             | 3                                    | BALL                | BCT3F-.2500-L-BN  | BCT3-8051 | BCT3-80511 | BCT3-80512 | BCT3-80513 | \$ 39.34             | \$ 44.26                                              |
| 1/4     | 1/4                          | 3         | 1-1/2             | 4                                    | SQ                  | BCT3F-.2500-XL-SQ | BCT3-8052 | BCT3-80521 | BCT3-80522 | BCT3-80523 | \$ 31.79             | \$ 35.76                                              |
| 1/4     | 1/4                          | 3         | 1-1/2             | 4                                    | BALL                | BCT3F-.2500-XL-BN | BCT3-8053 | BCT3-80531 | BCT3-80532 | BCT3-80533 | \$ 41.40             | \$ 46.58                                              |
| 5/16    | 5/16                         | 3         | 1/2               | 2                                    | SQ                  | BCT3F-.3125-S-SQ  | BCT3-8054 | BCT3-80541 | BCT3-80542 | BCT3-80543 | \$ 24.75             | \$ 27.84                                              |

# General Purpose



| Series: BCT3 |                              |           |                   |                                      |                     |                   |           |            |            |            |                      |                                                       |
|--------------|------------------------------|-----------|-------------------|--------------------------------------|---------------------|-------------------|-----------|------------|------------|------------|----------------------|-------------------------------------------------------|
| Carbide      | 3 Flute<br>Center<br>Cutting | 30° Helix | Coat on<br>Demand | + .000 / -.002<br>1/8 and<br>Greater | ±.0005 Below<br>1/8 |                   |           |            |            |            |                      |                                                       |
| CUT DIA      | SHANK DIA                    | FLUTES    | LOC               | OAL                                  | CORNER              | PART NAME         | BRIGHT    | AITiN      | TiCN       | TiN        | PRICE LIST<br>BRIGHT | PRICE LIST<br>COATED<br>(DIA / DLC) Call<br>for Price |
| 5/16         | 5/16                         | 3         | 1/2               | 2                                    | BALL                | BCT3F-.3125-S-BN  | BCT3-8055 | BCT3-80551 | BCT3-80552 | BCT3-80553 | \$ 29.70             | \$ 33.41                                              |
| 5/16         | 5/16                         | 3         | 13/16             | 2-1/2                                | SQ                  | BCT3F-.3125-SQ    | BCT3-8056 | BCT3-80561 | BCT3-80562 | BCT3-80563 | \$ 26.05             | \$ 29.31                                              |
| 5/16         | 5/16                         | 3         | 13/16             | 2-1/2                                | BALL                | BCT3F-.3125-BN    | BCT3-8057 | BCT3-80571 | BCT3-80572 | BCT3-80573 | \$ 30.80             | \$ 34.65                                              |
| 5/16         | 5/16                         | 3         | 1-1/8             | 3                                    | SQ                  | BCT3F-.3125-L-SQ  | BCT3-8058 | BCT3-80581 | BCT3-80582 | BCT3-80583 | \$ 30.47             | \$ 34.28                                              |
| 5/16         | 5/16                         | 3         | 1-1/8             | 3                                    | BALL                | BCT3F-.3125-L-BN  | BCT3-8059 | BCT3-80591 | BCT3-80592 | BCT3-80593 | \$ 49.31             | \$ 55.47                                              |
| 5/16         | 5/16                         | 3         | 1-5/8             | 4                                    | SQ                  | BCT3F-.3125-XL-SQ | BCT3-8060 | BCT3-80601 | BCT3-80602 | BCT3-80603 | \$ 40.20             | \$ 45.23                                              |
| 5/16         | 5/16                         | 3         | 1-5/8             | 4                                    | BALL                | BCT3F-.3125-XL-BN | BCT3-8061 | BCT3-80611 | BCT3-80612 | BCT3-80613 | \$ 55.02             | \$ 61.90                                              |
| 3/8          | 3/8                          | 3         | 5/8               | 2                                    | SQ                  | BCT3F-.3750-S-SQ  | BCT3-8062 | BCT3-80621 | BCT3-80622 | BCT3-80623 | \$ 30.42             | \$ 34.22                                              |
| 3/8          | 3/8                          | 3         | 5/8               | 2                                    | BALL                | BCT3F-.3750-S-BN  | BCT3-8063 | BCT3-80631 | BCT3-80632 | BCT3-80633 | \$ 36.50             | \$ 41.06                                              |
| 3/8          | 3/8                          | 3         | 1                 | 2-1/2                                | SQ                  | BCT3F-.3750-SQ    | BCT3-8064 | BCT3-80641 | BCT3-80642 | BCT3-80643 | \$ 30.80             | \$ 34.65                                              |
| 3/8          | 3/8                          | 3         | 1                 | 2-1/2                                | BALL                | BCT3F-.3750-BN    | BCT3-8065 | BCT3-80651 | BCT3-80652 | BCT3-80653 | \$ 36.98             | \$ 41.60                                              |
| 3/8          | 3/8                          | 3         | 1-1/8             | 3                                    | SQ                  | BCT3F-.3750-L-SQ  | BCT3-8066 | BCT3-80661 | BCT3-80662 | BCT3-80663 | \$ 42.08             | \$ 47.34                                              |
| 3/8          | 3/8                          | 3         | 1-1/8             | 3                                    | BALL                | BCT3F-.3750-L-BN  | BCT3-8067 | BCT3-80671 | BCT3-80672 | BCT3-80673 | \$ 55.46             | \$ 62.39                                              |
| 3/8          | 3/8                          | 3         | 1-3/4             | 4                                    | SQ                  | BCT3F-.3750-XL-SQ | BCT3-8068 | BCT3-80681 | BCT3-80682 | BCT3-80683 | \$ 48.54             | \$ 54.61                                              |
| 3/8          | 3/8                          | 3         | 1-3/4             | 4                                    | BALL                | BCT3F-.3750-XL-BN | BCT3-8069 | BCT3-80691 | BCT3-80692 | BCT3-80693 | \$ 60.90             | \$ 68.51                                              |
| 7/16         | 7/16                         | 3         | 1                 | 2-3/4                                | SQ                  | BCT3F-.4375-SQ    | BCT3-8070 | BCT3-80701 | BCT3-80702 | BCT3-80703 | \$ 42.42             | \$ 47.72                                              |
| 7/16         | 7/16                         | 3         | 1                 | 2-3/4                                | BALL                | BCT3F-.4375-BN    | BCT3-8071 | BCT3-80711 | BCT3-80712 | BCT3-80713 | \$ 54.00             | \$ 60.75                                              |
| 7/16         | 7/16                         | 3         | 2                 | 4                                    | SQ                  | BCT3F-.4375-L-SQ  | BCT3-8072 | BCT3-80721 | BCT3-80722 | BCT3-80723 | \$ 68.12             | \$ 76.64                                              |
| 7/16         | 7/16                         | 3         | 2                 | 4                                    | BALL                | BCT3F-.4375-L-BN  | BCT3-8073 | BCT3-80731 | BCT3-80732 | BCT3-80733 | \$ 86.63             | \$ 97.46                                              |
| 1/2          | 1/2                          | 3         | 5/8               | 2-1/2                                | SQ                  | BCT3F-.5000-S-SQ  | BCT3-8074 | BCT3-80741 | BCT3-80742 | BCT3-80743 | \$ 50.84             | \$ 57.20                                              |
| 1/2          | 1/2                          | 3         | 5/8               | 2-1/2                                | BALL                | BCT3F-.5000-S-BN  | BCT3-8075 | BCT3-80751 | BCT3-80752 | BCT3-80753 | \$ 59.21             | \$ 66.61                                              |
| 1/2          | 1/2                          | 3         | 1                 | 3                                    | SQ                  | BCT3F-.5000-SQ    | BCT3-8076 | BCT3-80761 | BCT3-80762 | BCT3-80763 | \$ 52.15             | \$ 58.67                                              |
| 1/2          | 1/2                          | 3         | 1                 | 3                                    | BALL                | BCT3F-.5000-BN    | BCT3-8077 | BCT3-80771 | BCT3-80772 | BCT3-80773 | \$ 64.47             | \$ 72.53                                              |
| 1/2          | 1/2                          | 3         | 2                 | 4                                    | SQ                  | BCT3F-.5000-L-SQ  | BCT3-8078 | BCT3-80781 | BCT3-80782 | BCT3-80783 | \$ 66.61             | \$ 74.94                                              |
| 1/2          | 1/2                          | 3         | 2                 | 4                                    | BALL                | BCT3F-.5000-L-BN  | BCT3-8079 | BCT3-80791 | BCT3-80792 | BCT3-80793 | \$ 88.48             | \$ 99.54                                              |
| 1/2          | 1/2                          | 3         | 3                 | 6                                    | SQ                  | BCT3F-.5000-XL-SQ | BCT3-8080 | BCT3-80801 | BCT3-80802 | BCT3-80803 | \$ 102.31            | \$ 115.10                                             |
| 1/2          | 1/2                          | 3         | 3                 | 6                                    | BALL                | BCT3F-.5000-XL-BN | BCT3-8081 | BCT3-80811 | BCT3-80812 | BCT3-80813 | \$ 125.32            | \$ 140.99                                             |
| 9/16         | 9/16                         | 3         | 1-1/4             | 3-1/2                                | SQ                  | BCT3F-.5625-SQ    | BCT3-8082 | BCT3-80821 | BCT3-80822 | BCT3-80823 | \$ 90.62             | \$ 101.95                                             |
| 9/16         | 9/16                         | 3         | 1-1/8             | 3-1/2                                | BALL                | BCT3F-.5625-BN    | BCT3-8083 | BCT3-80831 | BCT3-80832 | BCT3-80833 | \$ 110.82            | \$ 124.67                                             |
| 5/8          | 5/8                          | 3         | 3/4               | 3                                    | SQ                  | BCT3F-.6250-S-SQ  | BCT3-8084 | BCT3-80841 | BCT3-80842 | BCT3-80843 | \$ 89.12             | \$ 100.26                                             |
| 5/8          | 5/8                          | 3         | 3/4               | 3                                    | BALL                | BCT3F-.6250-S-BN  | BCT3-8085 | BCT3-80851 | BCT3-80852 | BCT3-80853 | \$ 114.93            | \$ 129.30                                             |
| 5/8          | 5/8                          | 3         | 1-1/4             | 3-1/2                                | SQ                  | BCT3F-.6250-SQ    | BCT3-8086 | BCT3-80861 | BCT3-80862 | BCT3-80863 | \$ 99.41             | \$ 111.84                                             |
| 5/8          | 5/8                          | 3         | 1-1/4             | 3-1/2                                | BALL                | BCT3F-.6250-BN    | BCT3-8087 | BCT3-80871 | BCT3-80872 | BCT3-80873 | \$ 123.02            | \$ 138.40                                             |
| 5/8          | 5/8                          | 3         | 2-1/4             | 5                                    | SQ                  | BCT3F-.6250-L-SQ  | BCT3-8088 | BCT3-80881 | BCT3-80882 | BCT3-80883 | \$ 132.36            | \$ 148.91                                             |
| 5/8          | 5/8                          | 3         | 2-1/4             | 5                                    | BALL                | BCT3F-.6250-L-BN  | BCT3-8089 | BCT3-80891 | BCT3-80892 | BCT3-80893 | \$ 177.42            | \$ 199.60                                             |
| 5/8          | 5/8                          | 3         | 3                 | 6                                    | SQ                  | BCT3F-.6250-XL-SQ | BCT3-8090 | BCT3-80901 | BCT3-80902 | BCT3-80903 | \$ 155.11            | \$ 174.50                                             |
| 5/8          | 5/8                          | 3         | 3                 | 6                                    | BALL                | BCT3F-.6250-XL-BN | BCT3-8091 | BCT3-80911 | BCT3-80912 | BCT3-80913 | \$ 193.20            | \$ 217.35                                             |
| 3/4          | 3/4                          | 3         | 1-1/2             | 4                                    | SQ                  | BCT3F-.7500-SQ    | BCT3-8092 | BCT3-80921 | BCT3-80922 | BCT3-80923 | \$ 149.84            | \$ 168.57                                             |
| 3/4          | 3/4                          | 3         | 1-1/2             | 4                                    | BALL                | BCT3F-.7500-BN    | BCT3-8093 | BCT3-80931 | BCT3-80932 | BCT3-80933 | \$ 182.76            | \$ 205.61                                             |
| 3/4          | 3/4                          | 3         | 2-1/4             | 5                                    | SQ                  | BCT3F-.7500-L-SQ  | BCT3-8094 | BCT3-80941 | BCT3-80942 | BCT3-80943 | \$ 195.07            | \$ 219.45                                             |
| 3/4          | 3/4                          | 3         | 2-1/4             | 5                                    | BALL                | BCT3F-.7500-L-BN  | BCT3-8095 | BCT3-80951 | BCT3-80952 | BCT3-80953 | \$ 294.28            | \$ 331.07                                             |
| 3/4          | 3/4                          | 3         | 3                 | 6                                    | SQ                  | BCT3F-.7500-XL-SQ | BCT3-8096 | BCT3-80961 | BCT3-80962 | BCT3-80963 | \$ 246.42            | \$ 277.22                                             |
| 3/4          | 3/4                          | 3         | 3                 | 6                                    | BALL                | BCT3F-.7500-XL-BN | BCT3-8097 | BCT3-80971 | BCT3-80972 | BCT3-80973 | \$ 319.08            | \$ 358.97                                             |

General Purpose



| Carbide | 4 Flute<br>Center<br>Cutting | 30° Helix | Coat on<br>Demand | +.000 / -.002<br>1/8 and<br>Greater | ±.0005 Below<br>1/8 | Series: BCT4        |           |            |            |            |                      |                                                       |  |
|---------|------------------------------|-----------|-------------------|-------------------------------------|---------------------|---------------------|-----------|------------|------------|------------|----------------------|-------------------------------------------------------|--|
| CUT DIA | SHANK DIA                    | FLUTES    | LOC               | OAL                                 | CORNER              | PART NAME           | BRIGHT    | AITiN      | TiCN       | TiN        | PRICE LIST<br>BRIGHT | PRICE LIST<br>COATED<br>(DIA / DLC) Call<br>for Price |  |
| 1/32    | 1/8                          | 4         | 1/16              | 1-1/2                               | SQ                  | BCT4F-.0313-S-SQ    | BCT4-7000 | BCT4-70001 | BCT4-70002 | BCT4-70003 | \$ 13.72             | \$ 15.44                                              |  |
| 1/32    | 1/8                          | 4         | 1/16              | 1-1/2                               | BALL                | BCT4F-.0313-S-BN    | BCT4-7001 | BCT4-70011 | BCT4-70012 | BCT4-70013 | \$ 17.88             | \$ 20.12                                              |  |
| 1/32    | 1/8                          | 4         | 3/32              | 1-1/2                               | SQ                  | BCT4F-.0313-SQ      | BCT4-7002 | BCT4-70021 | BCT4-70022 | BCT4-70023 | \$ 13.14             | \$ 14.78                                              |  |
| 1/32    | 1/8                          | 4         | 3/32              | 1-1/2                               | BALL                | BCT4F-.0313-BN      | BCT4-7003 | BCT4-70031 | BCT4-70032 | BCT4-70033 | \$ 16.21             | \$ 18.24                                              |  |
| 1/32    | 1/8                          | 4         | 9/64              | 1-1/2                               | SQ                  | BCT4F-.0313-L-SQ    | BCT4-7004 | BCT4-70041 | BCT4-70042 | BCT4-70043 | \$ 16.04             | \$ 18.05                                              |  |
| 3/64    | 1/8                          | 4         | 3/32              | 1-1/2                               | SQ                  | BCT4F-.0469-S-SQ    | BCT4-7005 | BCT4-70051 | BCT4-70052 | BCT4-70053 | \$ 13.51             | \$ 15.20                                              |  |
| 3/64    | 1/8                          | 4         | 3/32              | 1-1/2                               | BALL                | BCT4F-.0469-S-BN    | BCT4-7006 | BCT4-70061 | BCT4-70062 | BCT4-70063 | \$ 16.20             | \$ 18.23                                              |  |
| 3/64    | 1/8                          | 4         | 1/8               | 1-1/2                               | SQ                  | BCT4F-.0469-SQ      | BCT4-7007 | BCT4-70071 | BCT4-70072 | BCT4-70073 | \$ 13.52             | \$ 15.21                                              |  |
| 3/64    | 1/8                          | 4         | 1/8               | 1-1/2                               | BALL                | BCT4F-.0469-BN      | BCT4-7008 | BCT4-70081 | BCT4-70082 | BCT4-70083 | \$ 16.21             | \$ 18.24                                              |  |
| 3/64    | 1/8                          | 4         | 3/16              | 1-1/2                               | SQ                  | BCT4F-.0469-L-SQ    | BCT4-7009 | BCT4-70091 | BCT4-70092 | BCT4-70093 | \$ 15.23             | \$ 17.13                                              |  |
| 1/16    | 1/8                          | 4         | 1/8               | 1-1/2                               | SQ                  | BCT4F-.0625-S-SQ    | BCT4-7010 | BCT4-70101 | BCT4-70102 | BCT4-70103 | \$ 11.07             | \$ 12.45                                              |  |
| 1/16    | 1/8                          | 4         | 1/8               | 1-1/2                               | BALL                | BCT4F-.0625-S-BN    | BCT4-7011 | BCT4-70111 | BCT4-70112 | BCT4-70113 | \$ 12.63             | \$ 14.21                                              |  |
| 1/16    | 1/8                          | 4         | 3/16              | 1-1/2                               | SQ                  | BCT4F-.0625-SQ      | BCT4-7012 | BCT4-70121 | BCT4-70122 | BCT4-70123 | \$ 11.16             | \$ 12.56                                              |  |
| 1/16    | 1/8                          | 4         | 3/16              | 1-1/2                               | BALL                | BCT4F-.0625-BN      | BCT4-7013 | BCT4-70131 | BCT4-70132 | BCT4-70133 | \$ 13.37             | \$ 15.04                                              |  |
| 1/16    | 1/8                          | 4         | 1/4               | 1-1/2                               | SQ                  | BCT4F-.0625-M-SQ    | BCT4-7014 | BCT4-70141 | BCT4-70142 | BCT4-70143 | \$ 15.59             | \$ 17.54                                              |  |
| 1/16    | 1/8                          | 4         | 1/4               | 1-1/2                               | BALL                | BCT4F-.0625-M-BN    | BCT4-7015 | BCT4-70151 | BCT4-70152 | BCT4-70153 | \$ 14.02             | \$ 15.77                                              |  |
| 1/16    | 1/8                          | 4         | 3/8               | 1-1/2                               | SQ                  | BCT4F-.0625-L-SQ    | BCT4-7016 | BCT4-70161 | BCT4-70162 | BCT4-70163 | \$ 15.59             | \$ 17.54                                              |  |
| 1/16    | 1/8                          | 4         | 3/8               | 1-1/2                               | BALL                | BCT4F-.0625-L-BN    | BCT4-7017 | BCT4-70171 | BCT4-70172 | BCT4-70173 | \$ 14.43             | \$ 16.23                                              |  |
| 5/64    | 1/8                          | 4         | 1/8               | 1-1/2                               | SQ                  | BCT4F-.0781-S-SQ    | BCT4-7018 | BCT4-70181 | BCT4-70182 | BCT4-70183 | \$ 11.16             | \$ 12.56                                              |  |
| 5/64    | 1/8                          | 4         | 1/8               | 1-1/2                               | BALL                | BCT4F-.0781-S-BN    | BCT4-7019 | BCT4-70191 | BCT4-70192 | BCT4-70193 | \$ 12.21             | \$ 13.74                                              |  |
| 5/64    | 1/8                          | 4         | 3/16              | 1-1/2                               | SQ                  | BCT4F-.0781-SQ      | BCT4-7020 | BCT4-70201 | BCT4-70202 | BCT4-70203 | \$ 11.16             | \$ 12.56                                              |  |
| 5/64    | 1/8                          | 4         | 3/16              | 1-1/2                               | BALL                | BCT4F-.0781-BN      | BCT4-7021 | BCT4-70211 | BCT4-70212 | BCT4-70213 | \$ 13.37             | \$ 15.04                                              |  |
| 5/64    | 1/8                          | 4         | 1/4               | 1-1/2                               | SQ                  | BCT4F-.0781-M-SQ    | BCT4-7022 | BCT4-70221 | BCT4-70222 | BCT4-70223 | \$ 15.59             | \$ 17.54                                              |  |
| 5/64    | 1/8                          | 4         | 3/8               | 1-1/2                               | SQ                  | BCT4F-.0781-T-SQ    | BCT4-7023 | BCT4-70231 | BCT4-70232 | BCT4-70233 | \$ 15.59             | \$ 17.54                                              |  |
| 5/64    | 1/8                          | 4         | 1/2               | 1-1/2                               | SQ                  | BCT4F-.0781-L-SQ    | BCT4-7024 | BCT4-70241 | BCT4-70242 | BCT4-70243 | \$ 15.59             | \$ 17.54                                              |  |
| 3/32    | 1/8                          | 4         | 3/16              | 1-1/2                               | SQ                  | BCT4F-.0938-S-SQ    | BCT4-7025 | BCT4-70251 | BCT4-70252 | BCT4-70253 | \$ 10.77             | \$ 12.12                                              |  |
| 3/32    | 1/8                          | 4         | 3/16              | 1-1/2                               | BALL                | BCT4F-.0938-S-BN    | BCT4-7026 | BCT4-70261 | BCT4-70262 | BCT4-70263 | \$ 12.13             | \$ 13.65                                              |  |
| 3/32    | 1/8                          | 4         | 3/8               | 1-1/2                               | SQ                  | BCT4F-.0938-SQ      | BCT4-7027 | BCT4-70271 | BCT4-70272 | BCT4-70273 | \$ 11.16             | \$ 12.56                                              |  |
| 3/32    | 1/8                          | 4         | 3/8               | 1-1/2                               | 0.01                | BCT4F-.0938-R.010   | BCT4-7028 | BCT4-70281 | BCT4-70282 | BCT4-70283 | \$ 13.91             | \$ 15.65                                              |  |
| 3/32    | 1/8                          | 4         | 3/8               | 1-1/2                               | 0.015               | BCT4F-.0938-R.015   | BCT4-7029 | BCT4-70291 | BCT4-70292 | BCT4-70293 | \$ 13.91             | \$ 15.65                                              |  |
| 3/32    | 1/8                          | 4         | 3/8               | 1-1/2                               | 0.020               | BCT4F-.0938-R.020   | BCT4-7030 | BCT4-70301 | BCT4-70302 | BCT4-70303 | \$ 13.91             | \$ 15.65                                              |  |
| 3/32    | 1/8                          | 4         | 3/8               | 1-1/2                               | BALL                | BCT4F-.0938-BN      | BCT4-7031 | BCT4-70311 | BCT4-70312 | BCT4-70313 | \$ 13.37             | \$ 15.04                                              |  |
| 3/32    | 1/8                          | 4         | 1/2               | 1-1/2                               | SQ                  | BCT4F-.0938-M-SQ    | BCT4-7032 | BCT4-70321 | BCT4-70322 | BCT4-70323 | \$ 12.84             | \$ 14.45                                              |  |
| 3/32    | 1/8                          | 4         | 1/2               | 1-1/2                               | BALL                | BCT4F-.0938-M-BN    | BCT4-7033 | BCT4-70331 | BCT4-70332 | BCT4-70333 | \$ 14.43             | \$ 16.23                                              |  |
| 3/32    | 1/8                          | 4         | 9/16              | 2                                   | SQ                  | BCT4F-.0938-L-SQ    | BCT4-7034 | BCT4-70341 | BCT4-70342 | BCT4-70343 | \$ 23.41             | \$ 26.34                                              |  |
| 7/64    | 1/8                          | 4         | 7/32              | 1-1/2                               | SQ                  | BCT4F-.1094-S-SQ    | BCT4-7035 | BCT4-70351 | BCT4-70352 | BCT4-70353 | \$ 11.00             | \$ 12.38                                              |  |
| 7/64    | 1/8                          | 4         | 7/32              | 1-1/2                               | BALL                | BCT4F-.1094-S-BN    | BCT4-7036 | BCT4-70361 | BCT4-70362 | BCT4-70363 | \$ 13.23             | \$ 14.88                                              |  |
| 7/64    | 1/8                          | 4         | 3/8               | 1-1/2                               | SQ                  | BCT4F-.1094-SQ      | BCT4-7037 | BCT4-70371 | BCT4-70372 | BCT4-70373 | \$ 11.16             | \$ 12.56                                              |  |
| 7/64    | 1/8                          | 4         | 3/8               | 1-1/2                               | BALL                | BCT4F-.1094-BN      | BCT4-7038 | BCT4-70381 | BCT4-70382 | BCT4-70383 | \$ 13.37             | \$ 15.04                                              |  |
| 7/64    | 1/8                          | 4         | 3/4               | 2                                   | SQ                  | BCT4F-.1094-L-SQ    | BCT4-7039 | BCT4-70391 | BCT4-70392 | BCT4-70393 | \$ 16.39             | \$ 18.44                                              |  |
| 1/8     | 1/8                          | 4         | 1/4               | 1-1/2                               | SQ                  | BCT4F-.1250-S-SQ    | BCT4-7040 | BCT4-70401 | BCT4-70402 | BCT4-70403 | \$ 10.32             | \$ 11.61                                              |  |
| 1/8     | 1/8                          | 4         | 1/4               | 1-1/2                               | 0.010               | BCT4F-.1250-S-R.010 | BCT4-7041 | BCT4-70411 | BCT4-70412 | BCT4-70413 | \$ 12.75             | \$ 14.34                                              |  |
| 1/8     | 1/8                          | 4         | 1/4               | 1-1/2                               | BALL                | BCT4F-.1250-S-BN    | BCT4-7042 | BCT4-70421 | BCT4-70422 | BCT4-70423 | \$ 11.62             | \$ 13.07                                              |  |
| 1/8     | 1/8                          | 4         | 1/2               | 1-1/2                               | SQ                  | BCT4F-.1250-SQ      | BCT4-7043 | BCT4-70431 | BCT4-70432 | BCT4-70433 | \$ 10.81             | \$ 12.16                                              |  |
| 1/8     | 1/8                          | 4         | 1/2               | 1-1/2                               | 0.005               | BCT4F-.1250-R.005   | BCT4-7044 | BCT4-70441 | BCT4-70442 | BCT4-70443 | \$ 12.98             | \$ 14.60                                              |  |
| 1/8     | 1/8                          | 4         | 1/2               | 1-1/2                               | 0.010               | BCT4F-.1250-R.010   | BCT4-7045 | BCT4-70451 | BCT4-70452 | BCT4-70453 | \$ 12.98             | \$ 14.60                                              |  |
| 1/8     | 1/8                          | 4         | 1/2               | 1-1/2                               | 0.015               | BCT4F-.1250-R.015   | BCT4-7046 | BCT4-70461 | BCT4-70462 | BCT4-70463 | \$ 12.98             | \$ 14.60                                              |  |
| 1/8     | 1/8                          | 4         | 1/2               | 1-1/2                               | 0.020               | BCT4F-.1250-R.020   | BCT4-7047 | BCT4-70471 | BCT4-70472 | BCT4-70473 | \$ 12.98             | \$ 14.60                                              |  |
| 1/8     | 1/8                          | 4         | 1/2               | 1-1/2                               | 0.03                | BCT4F-.1250-R.030   | BCT4-7048 | BCT4-70481 | BCT4-70482 | BCT4-70483 | \$ 12.98             | \$ 14.60                                              |  |
| 1/8     | 1/8                          | 4         | 1/2               | 1-1/2                               | BALL                | BCT4F-.1250-BN      | BCT4-7049 | BCT4-70491 | BCT4-70492 | BCT4-70493 | \$ 13.37             | \$ 15.04                                              |  |
| 1/8     | 1/8                          | 4         | 5/8               | 2                                   | SQ                  | BCT4F-.1250-M-SQ    | BCT4-7050 | BCT4-70501 | BCT4-70502 | BCT4-70503 | \$ 15.78             | \$ 17.75                                              |  |
| 1/8     | 1/8                          | 4         | 5/8               | 2                                   | BALL                | BCT4F-.1250-M-BN    | BCT4-7051 | BCT4-70511 | BCT4-70512 | BCT4-70513 | \$ 17.83             | \$ 20.06                                              |  |
| 1/8     | 1/8                          | 4         | 3/4               | 2-1/4                               | SQ                  | BCT4F-.1250-T-SQ    | BCT4-7052 | BCT4-70521 | BCT4-70522 | BCT4-70523 | \$ 16.32             | \$ 18.36                                              |  |
| 1/8     | 1/8                          | 4         | 3/4               | 2-1/4                               | BALL                | BCT4F-.1250-T-BN    | BCT4-7053 | BCT4-70531 | BCT4-70532 | BCT4-70533 | \$ 20.62             | \$ 23.20                                              |  |
| 1/8     | 1/8                          | 4         | 3/4               | 3                                   | SQ                  | BCT4F-.1250-L-SQ    | BCT4-7054 | BCT4-70541 | BCT4-70542 | BCT4-70543 | \$ 16.32             | \$ 18.36                                              |  |

# General Purpose



| Carbide | 4 Flute<br>Center<br>Cutting | 30° Helix | Coat on<br>Demand | +0.000 / -.002<br>1/8 and<br>Greater | ±.0005 Below<br>1/8 | Series: BCT4        |           |            |            |            |                      |                                                       |
|---------|------------------------------|-----------|-------------------|--------------------------------------|---------------------|---------------------|-----------|------------|------------|------------|----------------------|-------------------------------------------------------|
| CUT DIA | SHANK DIA                    | FLUTES    | LOC               | OAL                                  | CORNER              | PART NAME           | BRIGHT    | AITiN      | TiCN       | TiN        | PRICE LIST<br>BRIGHT | PRICE LIST<br>COATED<br>(DIA / DLC) Call<br>for Price |
| 1/8     | 1/8                          | 4         | 3/4               | 3                                    | BALL                | BCT4F-.1250-L-BN    | BCT4-7055 | BCT4-70551 | BCT4-70552 | BCT4-70553 | \$ 21.97             | \$ 24.72                                              |
| 1/8     | 1/8                          | 4         | 1                 | 3                                    | SQ                  | BCT4F-.1250-XL-SQ   | BCT4-7056 | BCT4-70561 | BCT4-70562 | BCT4-70563 | \$ 20.72             | \$ 23.31                                              |
| 1/8     | 1/8                          | 4         | 1                 | 3                                    | BALL                | BCT4F-.1250-XL-BN   | BCT4-7057 | BCT4-70571 | BCT4-70572 | BCT4-70573 | \$ 30.38             | \$ 34.18                                              |
| 5/32    | 3/16                         | 4         | 5/16              | 2                                    | SQ                  | BCT4F-.1563-S-SQ    | BCT4-7058 | BCT4-70581 | BCT4-70582 | BCT4-70583 | \$ 14.19             | \$ 15.96                                              |
| 5/32    | 3/16                         | 4         | 5/16              | 2                                    | 0.010               | BCT4F-.1563-S-R.010 | BCT4-7059 | BCT4-70591 | BCT4-70592 | BCT4-70593 | \$ 19.69             | \$ 22.15                                              |
| 5/32    | 3/16                         | 4         | 5/16              | 2                                    | BALL                | BCT4F-.1563-S-BN    | BCT4-7060 | BCT4-70601 | BCT4-70602 | BCT4-70603 | \$ 17.77             | \$ 19.99                                              |
| 5/32    | 3/16                         | 4         | 9/16              | 2                                    | SQ                  | BCT4F-.1563-SQ      | BCT4-7061 | BCT4-70611 | BCT4-70612 | BCT4-70613 | \$ 18.23             | \$ 20.51                                              |
| 5/32    | 3/16                         | 4         | 9/16              | 2                                    | 0.010               | BCT4F-.1563-R.010   | BCT4-7062 | BCT4-70621 | BCT4-70622 | BCT4-70623 | \$ 19.00             | \$ 21.38                                              |
| 5/32    | 3/16                         | 4         | 9/16              | 2                                    | 0.015               | BCT4F-.1563-R.015   | BCT4-7063 | BCT4-70631 | BCT4-70632 | BCT4-70633 | \$ 19.00             | \$ 21.38                                              |
| 5/32    | 3/16                         | 4         | 9/16              | 2                                    | 0.03                | BCT4F-.1563-R.030   | BCT4-7064 | BCT4-70641 | BCT4-70642 | BCT4-70643 | \$ 19.00             | \$ 21.38                                              |
| 3/16    | 3/16                         | 4         | 3/8               | 2                                    | SQ                  | BCT4F-.1875-S-SQ    | BCT4-7065 | BCT4-70651 | BCT4-70652 | BCT4-70653 | \$ 13.65             | \$ 15.36                                              |
| 3/16    | 3/16                         | 4         | 3/8               | 2                                    | 0.010               | BCT4F-.1875-S-R.010 | BCT4-7066 | BCT4-70661 | BCT4-70662 | BCT4-70663 | \$ 17.05             | \$ 19.18                                              |
| 3/16    | 3/16                         | 4         | 3/8               | 2                                    | BALL                | BCT4F-.1875-S-BN    | BCT4-7067 | BCT4-70671 | BCT4-70672 | BCT4-70673 | \$ 16.73             | \$ 18.82                                              |
| 3/16    | 3/16                         | 4         | 5/8               | 2                                    | SQ                  | BCT4F-.1875-SQ      | BCT4-7068 | BCT4-70681 | BCT4-70682 | BCT4-70683 | \$ 15.32             | \$ 17.24                                              |
| 3/16    | 3/16                         | 4         | 5/8               | 2                                    | 0.01                | BCT4F-.1875-R.010   | BCT4-7069 | BCT4-70691 | BCT4-70692 | BCT4-70693 | \$ 18.38             | \$ 20.68                                              |
| 3/16    | 3/16                         | 4         | 5/8               | 2                                    | 0.015               | BCT4F-.1875-R.015   | BCT4-7070 | BCT4-70701 | BCT4-70702 | BCT4-70703 | \$ 18.38             | \$ 20.68                                              |
| 3/16    | 3/16                         | 4         | 5/8               | 2                                    | 0.020               | BCT4F-.1875-R.020   | BCT4-7071 | BCT4-70711 | BCT4-70712 | BCT4-70713 | \$ 18.38             | \$ 20.68                                              |
| 3/16    | 3/16                         | 4         | 5/8               | 2                                    | 0.030               | BCT4F-.1875-R.030   | BCT4-7072 | BCT4-70721 | BCT4-70722 | BCT4-70723 | \$ 18.38             | \$ 20.68                                              |
| 3/16    | 3/16                         | 4         | 5/8               | 2                                    | 0.045               | BCT4F-.1875-R.045   | BCT4-7073 | BCT4-70731 | BCT4-70732 | BCT4-70733 | \$ 18.38             | \$ 20.68                                              |
| 3/16    | 3/16                         | 4         | 5/8               | 2                                    | BALL                | BCT4F-.1875-BN      | BCT4-7074 | BCT4-70741 | BCT4-70742 | BCT4-70743 | \$ 19.27             | \$ 21.68                                              |
| 3/16    | 3/16                         | 4         | 3/4               | 2-1/2                                | SQ                  | BCT4F-.1875-T-SQ    | BCT4-7075 | BCT4-70751 | BCT4-70752 | BCT4-70753 | \$ 20.75             | \$ 23.34                                              |
| 3/16    | 3/16                         | 4         | 3/4               | 2-1/2                                | BALL                | BCT4F-.1875-T-BN    | BCT4-7076 | BCT4-70761 | BCT4-70762 | BCT4-70763 | \$ 33.73             | \$ 37.95                                              |
| 3/16    | 3/16                         | 4         | 3/4               | 3                                    | SQ                  | BCT4F-.1875-L-SQ    | BCT4-7077 | BCT4-70771 | BCT4-70772 | BCT4-70773 | \$ 20.75             | \$ 23.34                                              |
| 3/16    | 3/16                         | 4         | 3/4               | 3                                    | BALL                | BCT4F-.1875-L-BN    | BCT4-7078 | BCT4-70781 | BCT4-70782 | BCT4-70783 | \$ 33.97             | \$ 38.22                                              |
| 3/16    | 3/16                         | 4         | 1-1/8             | 3                                    | SQ                  | BCT4F-.1875-XL-SQ   | BCT4-7079 | BCT4-70791 | BCT4-70792 | BCT4-70793 | \$ 24.18             | \$ 27.20                                              |
| 3/16    | 3/16                         | 4         | 1-1/8             | 3                                    | BALL                | BCT4F-.1875-XL-BN   | BCT4-7080 | BCT4-70801 | BCT4-70802 | BCT4-70803 | \$ 33.97             | \$ 38.22                                              |
| 7/32    | 1/4                          | 4         | 1/2               | 2                                    | SQ                  | BCT4F-.2188-S-SQ    | BCT4-7081 | BCT4-70811 | BCT4-70812 | BCT4-70813 | \$ 17.59             | \$ 19.79                                              |
| 7/32    | 1/4                          | 4         | 1/2               | 2                                    | 0.020               | BCT4F-.2188-S-R.020 | BCT4-7082 | BCT4-70821 | BCT4-70822 | BCT4-70823 | \$ 21.35             | \$ 24.02                                              |
| 7/32    | 1/4                          | 4         | 1/2               | 2                                    | BALL                | BCT4F-.2188-S-BN    | BCT4-7083 | BCT4-70831 | BCT4-70832 | BCT4-70833 | \$ 20.19             | \$ 22.71                                              |
| 7/32    | 1/4                          | 4         | 5/8               | 2-1/2                                | SQ                  | BCT4F-.2188-SQ      | BCT4-7084 | BCT4-70841 | BCT4-70842 | BCT4-70843 | \$ 20.99             | \$ 23.61                                              |
| 7/32    | 1/4                          | 4         | 5/8               | 2-1/2                                | BALL                | BCT4F-.2188-BN      | BCT4-7085 | BCT4-70851 | BCT4-70852 | BCT4-70853 | \$ 25.45             | \$ 28.63                                              |
| 15/64   | 1/4                          | 4         | 3/4               | 2-1/2                                | SQ                  | BCT4F-.2344-SQ      | BCT4-7086 | BCT4-70861 | BCT4-70862 | BCT4-70863 | \$ 20.69             | \$ 23.28                                              |
| 15/64   | 1/4                          | 4         | 3/4               | 2-1/2                                | BALL                | BCT4F-.2344-BN      | BCT4-7087 | BCT4-70871 | BCT4-70872 | BCT4-70873 | \$ 25.45             | \$ 28.63                                              |
| 1/4     | 1/4                          | 4         | 1/2               | 2                                    | SQ                  | BCT4F-.2500-S-SQ    | BCT4-7088 | BCT4-70881 | BCT4-70882 | BCT4-70883 | \$ 16.06             | \$ 18.07                                              |
| 1/4     | 1/4                          | 4         | 1/2               | 2                                    | 0.02                | BCT4F-.2500-S-R.020 | BCT4-7089 | BCT4-70891 | BCT4-70892 | BCT4-70893 | \$ 19.88             | \$ 22.37                                              |
| 1/4     | 1/4                          | 4         | 1/2               | 2                                    | BALL                | BCT4F-.2500-S-BN    | BCT4-7090 | BCT4-70901 | BCT4-70902 | BCT4-70903 | \$ 19.75             | \$ 22.22                                              |
| 1/4     | 1/4                          | 4         | 3/4               | 2-1/2                                | SQ                  | BCT4F-.2500-SQ      | BCT4-7091 | BCT4-70911 | BCT4-70912 | BCT4-70913 | \$ 19.77             | \$ 22.24                                              |
| 1/4     | 1/4                          | 4         | 3/4               | 2-1/2                                | 0.010               | BCT4F-.2500-R.010   | BCT4-7092 | BCT4-70921 | BCT4-70922 | BCT4-70923 | \$ 22.68             | \$ 25.52                                              |
| 1/4     | 1/4                          | 4         | 3/4               | 2-1/2                                | 0.015               | BCT4F-.2500-R.015   | BCT4-7093 | BCT4-70931 | BCT4-70932 | BCT4-70933 | \$ 22.68             | \$ 25.52                                              |
| 1/4     | 1/4                          | 4         | 3/4               | 2-1/2                                | 0.020               | BCT4F-.2500-R.020   | BCT4-7094 | BCT4-70941 | BCT4-70942 | BCT4-70943 | \$ 22.68             | \$ 25.52                                              |
| 1/4     | 1/4                          | 4         | 3/4               | 2-1/2                                | 0.030               | BCT4F-.2500-R.030   | BCT4-7095 | BCT4-70951 | BCT4-70952 | BCT4-70953 | \$ 22.68             | \$ 25.52                                              |
| 1/4     | 1/4                          | 4         | 3/4               | 2-1/2                                | 0.045               | BCT4F-.2500-R.045   | BCT4-7096 | BCT4-70961 | BCT4-70962 | BCT4-70963 | \$ 22.68             | \$ 25.52                                              |
| 1/4     | 1/4                          | 4         | 3/4               | 2-1/2                                | 0.060               | BCT4F-.2500-R.060   | BCT4-7097 | BCT4-70971 | BCT4-70972 | BCT4-70973 | \$ 22.68             | \$ 25.52                                              |
| 1/4     | 1/4                          | 4         | 3/4               | 2-1/2                                | BALL                | BCT4F-.2500-BN      | BCT4-7098 | BCT4-70981 | BCT4-70982 | BCT4-70983 | \$ 24.33             | \$ 27.37                                              |
| 1/4     | 1/4                          | 4         | 1-1/8             | 3                                    | SQ                  | BCT4F-.2500-L-SQ    | BCT4-7099 | BCT4-70991 | BCT4-70992 | BCT4-70993 | \$ 26.20             | \$ 29.48                                              |
| 1/4     | 1/4                          | 4         | 1-1/8             | 3                                    | BALL                | BCT4F-.2500-L-BN    | BCT4-7100 | BCT4-71001 | BCT4-71002 | BCT4-71003 | \$ 39.34             | \$ 44.26                                              |
| 1/4     | 1/4                          | 4         | 1-1/2             | 4                                    | SQ                  | BCT4F-.2500-XL-SQ   | BCT4-7101 | BCT4-71011 | BCT4-71012 | BCT4-71013 | \$ 31.79             | \$ 35.76                                              |
| 1/4     | 1/4                          | 4         | 1-1/2             | 4                                    | BALL                | BCT4F-.2500-XL-BN   | BCT4-7102 | BCT4-71021 | BCT4-71022 | BCT4-71023 | \$ 41.39             | \$ 46.56                                              |
| 5/16    | 5/16                         | 4         | 1/2               | 2                                    | SQ                  | BCT4F-.3125-S-SQ    | BCT4-7103 | BCT4-71031 | BCT4-71032 | BCT4-71033 | \$ 24.75             | \$ 27.84                                              |
| 5/16    | 5/16                         | 4         | 1/2               | 2                                    | 0.020               | BCT4F-.3125-S-R.020 | BCT4-7104 | BCT4-71041 | BCT4-71042 | BCT4-71043 | \$ 30.05             | \$ 33.81                                              |
| 5/16    | 5/16                         | 4         | 1/2               | 2                                    | 0.03                | BCT4F-.3125-S-R.030 | BCT4-7105 | BCT4-71051 | BCT4-71052 | BCT4-71053 | \$ 31.26             | \$ 35.17                                              |
| 5/16    | 5/16                         | 4         | 1/2               | 2                                    | BALL                | BCT4F-.3125-S-BN    | BCT4-7106 | BCT4-71061 | BCT4-71062 | BCT4-71063 | \$ 29.70             | \$ 33.41                                              |
| 5/16    | 5/16                         | 4         | 13/16             | 2-1/2                                | SQ                  | BCT4F-.3125-SQ      | BCT4-7107 | BCT4-71071 | BCT4-71072 | BCT4-71073 | \$ 26.05             | \$ 29.31                                              |
| 5/16    | 5/16                         | 4         | 13/16             | 2-1/2                                | 0.015               | BCT4F-.3125-R.015   | BCT4-7108 | BCT4-71081 | BCT4-71082 | BCT4-71083 | \$ 31.26             | \$ 35.17                                              |
| 5/16    | 5/16                         | 4         | 13/16             | 2-1/2                                | 0.020               | BCT4F-.3125-R.020   | BCT4-7109 | BCT4-71091 | BCT4-71092 | BCT4-71093 | \$ 31.26             | \$ 35.17                                              |

General Purpose



| Carbide | 4 Flute<br>Center<br>Cutting | 30° Helix | Coat on<br>Demand | +.000 / -.002<br>1/8 and<br>Greater | ±.0005 Below<br>1/8 | Series: BCT4        |           |            |            |            |                      |                                                       |  |
|---------|------------------------------|-----------|-------------------|-------------------------------------|---------------------|---------------------|-----------|------------|------------|------------|----------------------|-------------------------------------------------------|--|
| CUT DIA | SHANK DIA                    | FLUTES    | LOC               | OAL                                 | CORNER              | PART NAME           | BRIGHT    | AITiN      | TiCN       | TiN        | PRICE LIST<br>BRIGHT | PRICE LIST<br>COATED<br>(DIA / DLC) Call<br>for Price |  |
| 5/16    | 5/16                         | 4         | 13/16             | 2-1/2                               | 0.030               | BCT4F-.3125-R.030   | BCT4-7110 | BCT4-71101 | BCT4-71102 | BCT4-71103 | \$ 31.26             | \$ 35.17                                              |  |
| 5/16    | 5/16                         | 4         | 13/16             | 2-1/2                               | 0.045               | BCT4F-.3125-R.045   | BCT4-7111 | BCT4-71111 | BCT4-71112 | BCT4-71113 | \$ 31.26             | \$ 35.17                                              |  |
| 5/16    | 5/16                         | 4         | 13/16             | 2-1/2                               | 0.06                | BCT4F-.3125-R.060   | BCT4-7112 | BCT4-71121 | BCT4-71122 | BCT4-71123 | \$ 31.26             | \$ 35.17                                              |  |
| 5/16    | 5/16                         | 4         | 13/16             | 2-1/2                               | BALL                | BCT4F-.3125-BN      | BCT4-7113 | BCT4-71131 | BCT4-71132 | BCT4-71133 | \$ 30.80             | \$ 34.65                                              |  |
| 5/16    | 5/16                         | 4         | 1-1/8             | 3                                   | SQ                  | BCT4F-.3125-L-SQ    | BCT4-7114 | BCT4-71141 | BCT4-71142 | BCT4-71143 | \$ 30.47             | \$ 34.28                                              |  |
| 5/16    | 5/16                         | 4         | 1-1/8             | 3                                   | BALL                | BCT4F-.3125-L-BN    | BCT4-7115 | BCT4-71151 | BCT4-71152 | BCT4-71153 | \$ 49.29             | \$ 55.45                                              |  |
| 5/16    | 5/16                         | 4         | 1-5/8             | 4                                   | SQ                  | BCT4F-.3125-XL-SQ   | BCT4-7116 | BCT4-71161 | BCT4-71162 | BCT4-71163 | \$ 41.15             | \$ 46.29                                              |  |
| 5/16    | 5/16                         | 4         | 1-5/8             | 4                                   | BALL                | BCT4F-.3125-XL-BN   | BCT4-7117 | BCT4-71171 | BCT4-71172 | BCT4-71173 | \$ 55.02             | \$ 61.90                                              |  |
| 3/8     | 3/8                          | 4         | 5/8               | 2                                   | SQ                  | BCT4F-.3750-S-SQ    | BCT4-7118 | BCT4-71181 | BCT4-71182 | BCT4-71183 | \$ 30.42             | \$ 34.22                                              |  |
| 3/8     | 3/8                          | 4         | 5/8               | 2                                   | 0.020               | BCT4F-.3750-S-R.020 | BCT4-7119 | BCT4-71191 | BCT4-71192 | BCT4-71193 | \$ 36.24             | \$ 40.77                                              |  |
| 3/8     | 3/8                          | 4         | 5/8               | 2                                   | BALL                | BCT4F-.3750-S-BN    | BCT4-7120 | BCT4-71201 | BCT4-71202 | BCT4-71203 | \$ 36.50             | \$ 41.06                                              |  |
| 3/8     | 3/8                          | 4         | 1                 | 2-1/2                               | SQ                  | BCT4F-.3750-SQ      | BCT4-7121 | BCT4-71211 | BCT4-71212 | BCT4-71213 | \$ 30.80             | \$ 34.65                                              |  |
| 3/8     | 3/8                          | 4         | 1                 | 2-1/2                               | 0.015               | BCT4F-.3750-R.015   | BCT4-7122 | BCT4-71221 | BCT4-71222 | BCT4-71223 | \$ 35.98             | \$ 40.48                                              |  |
| 3/8     | 3/8                          | 4         | 1                 | 2-1/2                               | 0.020               | BCT4F-.3750-R.020   | BCT4-7123 | BCT4-71231 | BCT4-71232 | BCT4-71233 | \$ 35.98             | \$ 40.48                                              |  |
| 3/8     | 3/8                          | 4         | 1                 | 2-1/2                               | 0.03                | BCT4F-.3750-R.030   | BCT4-7124 | BCT4-71241 | BCT4-71242 | BCT4-71243 | \$ 35.98             | \$ 40.48                                              |  |
| 3/8     | 3/8                          | 4         | 1                 | 2-1/2                               | 0.045               | BCT4F-.3750-R.045   | BCT4-7125 | BCT4-71251 | BCT4-71252 | BCT4-71253 | \$ 35.98             | \$ 40.48                                              |  |
| 3/8     | 3/8                          | 4         | 1                 | 2-1/2                               | 0.060               | BCT4F-.3750-R.060   | BCT4-7126 | BCT4-71261 | BCT4-71262 | BCT4-71263 | \$ 35.98             | \$ 40.48                                              |  |
| 3/8     | 3/8                          | 4         | 1                 | 2-1/2                               | BALL                | BCT4F-.3750-BN      | BCT4-7127 | BCT4-71271 | BCT4-71272 | BCT4-71273 | \$ 36.98             | \$ 41.60                                              |  |
| 3/8     | 3/8                          | 4         | 1-1/8             | 3                                   | SQ                  | BCT4F-.3750-L-SQ    | BCT4-7128 | BCT4-71281 | BCT4-71282 | BCT4-71283 | \$ 42.08             | \$ 47.34                                              |  |
| 3/8     | 3/8                          | 4         | 1-1/8             | 3                                   | BALL                | BCT4F-.3750-L-BN    | BCT4-7129 | BCT4-71291 | BCT4-71292 | BCT4-71293 | \$ 55.46             | \$ 62.39                                              |  |
| 3/8     | 3/8                          | 4         | 1-3/4             | 4                                   | SQ                  | BCT4F-.3750-XL-SQ   | BCT4-7130 | BCT4-71301 | BCT4-71302 | BCT4-71303 | \$ 48.54             | \$ 54.61                                              |  |
| 3/8     | 3/8                          | 4         | 1-3/4             | 4                                   | BALL                | BCT4F-.3750-XL-BN   | BCT4-7131 | BCT4-71311 | BCT4-71312 | BCT4-71313 | \$ 60.90             | \$ 68.51                                              |  |
| 7/16    | 7/16                         | 4         | 5/8               | 2-1/2                               | SQ                  | BCT4F-.4375-S-SQ    | BCT4-7132 | BCT4-71321 | BCT4-71322 | BCT4-71323 | \$ 38.21             | \$ 42.99                                              |  |
| 7/16    | 7/16                         | 4         | 5/8               | 2-1/2                               | 0.020               | BCT4F-.4375-S-R.020 | BCT4-7133 | BCT4-71331 | BCT4-71332 | BCT4-71333 | \$ 52.75             | \$ 59.34                                              |  |
| 7/16    | 7/16                         | 4         | 5/8               | 2-1/2                               | BALL                | BCT4F-.4375-S-BN    | BCT4-7134 | BCT4-71341 | BCT4-71342 | BCT4-71343 | \$ 48.96             | \$ 55.08                                              |  |
| 7/16    | 7/16                         | 4         | 1                 | 2-3/4                               | SQ                  | BCT4F-.4375-SQ      | BCT4-7135 | BCT4-71351 | BCT4-71352 | BCT4-71353 | \$ 42.42             | \$ 47.72                                              |  |
| 7/16    | 7/16                         | 4         | 1                 | 2-3/4                               | BALL                | BCT4F-.4375-BN      | BCT4-7136 | BCT4-71361 | BCT4-71362 | BCT4-71363 | \$ 54.00             | \$ 60.75                                              |  |
| 7/16    | 7/16                         | 4         | 2                 | 4                                   | SQ                  | BCT4F-.4375-L-SQ    | BCT4-7137 | BCT4-71371 | BCT4-71372 | BCT4-71373 | \$ 68.12             | \$ 76.64                                              |  |
| 7/16    | 7/16                         | 4         | 2                 | 4                                   | BALL                | BCT4F-.4375-L-BN    | BCT4-7138 | BCT4-71381 | BCT4-71382 | BCT4-71383 | \$ 86.63             | \$ 97.46                                              |  |
| 7/16    | 7/16                         | 4         | 3                 | 6                                   | SQ                  | BCT4F-.4375-XL-SQ   | BCT4-7139 | BCT4-71391 | BCT4-71392 | BCT4-71393 | \$ 91.19             | \$ 102.59                                             |  |
| 7/16    | 7/16                         | 4         | 3                 | 6                                   | BALL                | BCT4F-.4375-XL-BN   | BCT4-7140 | BCT4-71401 | BCT4-71402 | BCT4-71403 | \$ 112.58            | \$ 126.65                                             |  |
| 1/2     | 1/2                          | 4         | 5/8               | 2-1/2                               | SQ                  | BCT4F-.5000-S-SQ    | BCT4-7141 | BCT4-71411 | BCT4-71412 | BCT4-71413 | \$ 50.84             | \$ 57.20                                              |  |
| 1/2     | 1/2                          | 4         | 5/8               | 2-1/2                               | 0.030               | BCT4F-.5000-S-R.030 | BCT4-7142 | BCT4-71421 | BCT4-71422 | BCT4-71423 | \$ 61.17             | \$ 68.82                                              |  |
| 1/2     | 1/2                          | 4         | 5/8               | 2-1/2                               | BALL                | BCT4F-.5000-S-BN    | BCT4-7143 | BCT4-71431 | BCT4-71432 | BCT4-71433 | \$ 59.21             | \$ 66.61                                              |  |
| 1/2     | 1/2                          | 4         | 1                 | 3                                   | SQ                  | BCT4F-.5000-SQ      | BCT4-7144 | BCT4-71441 | BCT4-71442 | BCT4-71443 | \$ 52.15             | \$ 58.67                                              |  |
| 1/2     | 1/2                          | 4         | 1                 | 3                                   | 0.015               | BCT4F-.5000-R.015   | BCT4-7145 | BCT4-71451 | BCT4-71452 | BCT4-71453 | \$ 62.58             | \$ 70.40                                              |  |
| 1/2     | 1/2                          | 4         | 1                 | 3                                   | 0.020               | BCT4F-.5000-R.020   | BCT4-7146 | BCT4-71461 | BCT4-71462 | BCT4-71463 | \$ 62.58             | \$ 70.40                                              |  |
| 1/2     | 1/2                          | 4         | 1                 | 3                                   | 0.030               | BCT4F-.5000-R.030   | BCT4-7147 | BCT4-71471 | BCT4-71472 | BCT4-71473 | \$ 62.58             | \$ 70.40                                              |  |
| 1/2     | 1/2                          | 4         | 1                 | 3                                   | 0.045               | BCT4F-.5000-R.045   | BCT4-7148 | BCT4-71481 | BCT4-71482 | BCT4-71483 | \$ 62.58             | \$ 70.40                                              |  |
| 1/2     | 1/2                          | 4         | 1                 | 3                                   | 0.06                | BCT4F-.5000-R.060   | BCT4-7149 | BCT4-71491 | BCT4-71492 | BCT4-71493 | \$ 62.58             | \$ 70.40                                              |  |
| 1/2     | 1/2                          | 4         | 1                 | 3                                   | 0.090               | BCT4F-.5000-R.090   | BCT4-7150 | BCT4-71501 | BCT4-71502 | BCT4-71503 | \$ 62.58             | \$ 70.40                                              |  |
| 1/2     | 1/2                          | 4         | 1                 | 3                                   | 0.125               | BCT4F-.5000-R.125   | BCT4-7151 | BCT4-71511 | BCT4-71512 | BCT4-71513 | \$ 62.58             | \$ 70.40                                              |  |
| 1/2     | 1/2                          | 4         | 1                 | 3                                   | BALL                | BCT4F-.5000-BN      | BCT4-7152 | BCT4-71521 | BCT4-71522 | BCT4-71523 | \$ 64.47             | \$ 72.53                                              |  |
| 1/2     | 1/2                          | 4         | 1-1/4             | 3                                   | SQ                  | BCT4F-.5000-M-SQ    | BCT4-7153 | BCT4-71531 | BCT4-71532 | BCT4-71533 | \$ 56.70             | \$ 63.79                                              |  |
| 1/2     | 1/2                          | 4         | 1-1/4             | 3                                   | BALL                | BCT4F-.5000-M-BN    | BCT4-7154 | BCT4-71541 | BCT4-71542 | BCT4-71543 | \$ 72.70             | \$ 81.79                                              |  |
| 1/2     | 1/2                          | 4         | 1-1/2             | 4                                   | SQ                  | BCT4F-.5000-T-SQ    | BCT4-7155 | BCT4-71551 | BCT4-71552 | BCT4-71553 | \$ 66.61             | \$ 74.94                                              |  |
| 1/2     | 1/2                          | 4         | 1-1/2             | 4                                   | BALL                | BCT4F-.5000-T-BN    | BCT4-7156 | BCT4-71561 | BCT4-71562 | BCT4-71563 | \$ 88.50             | \$ 99.56                                              |  |
| 1/2     | 1/2                          | 4         | 2                 | 4                                   | SQ                  | BCT4F-.5000-L-SQ    | BCT4-7157 | BCT4-71571 | BCT4-71572 | BCT4-71573 | \$ 66.61             | \$ 74.94                                              |  |
| 1/2     | 1/2                          | 4         | 2                 | 4                                   | BALL                | BCT4F-.5000-L-BN    | BCT4-7158 | BCT4-71581 | BCT4-71582 | BCT4-71583 | \$ 88.48             | \$ 99.54                                              |  |
| 1/2     | 1/2                          | 4         | 3                 | 6                                   | SQ                  | BCT4F-.5000-XL-SQ   | BCT4-7159 | BCT4-71591 | BCT4-71592 | BCT4-71593 | \$ 103.47            | \$ 116.40                                             |  |
| 1/2     | 1/2                          | 4         | 3                 | 6                                   | BALL                | BCT4F-.5000-XL-BN   | BCT4-7160 | BCT4-71601 | BCT4-71602 | BCT4-71603 | \$ 125.33            | \$ 141.00                                             |  |
| 9/16    | 9/16                         | 4         | 1/2               | 3-1/2                               | SQ                  | BCT4F-.5625-S-SQ    | BCT4-7161 | BCT4-71611 | BCT4-71612 | BCT4-71613 | \$ 84.30             | \$ 94.84                                              |  |
| 9/16    | 9/16                         | 4         | 1-1/4             | 3-1/2                               | SQ                  | BCT4F-.5625-SQ      | BCT4-7162 | BCT4-71621 | BCT4-71622 | BCT4-71623 | \$ 90.62             | \$ 101.95                                             |  |
| 9/16    | 9/16                         | 4         | 1-1/4             | 3-1/2                               | BALL                | BCT4F-.5625-BN      | BCT4-7163 | BCT4-71631 | BCT4-71632 | BCT4-71633 | \$ 110.81            | \$ 124.66                                             |  |
| 5/8     | 5/8                          | 4         | 3/4               | 3                                   | SQ                  | BCT4F-.6250-S-SQ    | BCT4-7164 | BCT4-71641 | BCT4-71642 | BCT4-71643 | \$ 89.09             | \$ 100.23                                             |  |

General Purpose



| Carbide | 4 Flute<br>Center<br>Cutting | 30° Helix | Coat on<br>Demand | +.000 / -.002<br>1/8 and<br>Greater | ±.0005 Below<br>1/8 | Series: BCT4        |           |            |            |            |                      |                                                       |
|---------|------------------------------|-----------|-------------------|-------------------------------------|---------------------|---------------------|-----------|------------|------------|------------|----------------------|-------------------------------------------------------|
|         |                              |           |                   |                                     |                     | PART NAME           | BRIGHT    | AITiN      | TiCN       | TiN        | PRICE LIST<br>BRIGHT | PRICE LIST<br>COATED<br>(DIA / DLC) Call<br>for Price |
| 5/8     | 5/8                          | 4         | 3/4               | 3                                   | 0.03                | BCT4F-.6250-S-R.030 | BCT4-7165 | BCT4-71651 | BCT4-71652 | BCT4-71653 | \$ 116.82            | \$ 131.42                                             |
| 5/8     | 5/8                          | 4         | 3/4               | 3                                   | BALL                | BCT4F-.6250-S-BN    | BCT4-7166 | BCT4-71661 | BCT4-71662 | BCT4-71663 | \$ 114.93            | \$ 129.30                                             |
| 5/8     | 5/8                          | 4         | 1-1/4             | 3-1/2                               | SQ                  | BCT4F-.6250-SQ      | BCT4-7167 | BCT4-71671 | BCT4-71672 | BCT4-71673 | \$ 99.41             | \$ 111.84                                             |
| 5/8     | 5/8                          | 4         | 1-1/4             | 3-1/2                               | 0.015               | BCT4F-.6250-R.015   | BCT4-7168 | BCT4-71681 | BCT4-71682 | BCT4-71683 | \$ 119.20            | \$ 134.10                                             |
| 5/8     | 5/8                          | 4         | 1-1/4             | 3-1/2                               | 0.020               | BCT4F-.6250-R.020   | BCT4-7169 | BCT4-71691 | BCT4-71692 | BCT4-71693 | \$ 119.20            | \$ 134.10                                             |
| 5/8     | 5/8                          | 4         | 1-1/4             | 3-1/2                               | 0.030               | BCT4F-.6250-R.030   | BCT4-7170 | BCT4-71701 | BCT4-71702 | BCT4-71703 | \$ 119.20            | \$ 134.10                                             |
| 5/8     | 5/8                          | 4         | 1-1/4             | 3-1/2                               | 0.045               | BCT4F-.6250-R.045   | BCT4-7171 | BCT4-71711 | BCT4-71712 | BCT4-71713 | \$ 119.20            | \$ 134.10                                             |
| 5/8     | 5/8                          | 4         | 1-1/4             | 3-1/2                               | 0.06                | BCT4F-.6250-R.060   | BCT4-7172 | BCT4-71721 | BCT4-71722 | BCT4-71723 | \$ 119.20            | \$ 134.10                                             |
| 5/8     | 5/8                          | 4         | 1-1/4             | 3-1/2                               | 0.09                | BCT4F-.6250-R.090   | BCT4-7173 | BCT4-71731 | BCT4-71732 | BCT4-71733 | \$ 119.20            | \$ 134.10                                             |
| 5/8     | 5/8                          | 4         | 1-1/4             | 3-1/2                               | BALL                | BCT4F-.6250-BN      | BCT4-7174 | BCT4-71741 | BCT4-71742 | BCT4-71743 | \$ 123.02            | \$ 138.40                                             |
| 5/8     | 5/8                          | 4         | 2-1/4             | 5                                   | SQ                  | BCT4F-.6250-L-SQ    | BCT4-7175 | BCT4-71751 | BCT4-71752 | BCT4-71753 | \$ 132.36            | \$ 148.91                                             |
| 5/8     | 5/8                          | 4         | 2-1/4             | 5                                   | BALL                | BCT4F-.6250-L-BN    | BCT4-7176 | BCT4-71761 | BCT4-71762 | BCT4-71763 | \$ 177.42            | \$ 199.60                                             |
| 5/8     | 5/8                          | 4         | 3                 | 6                                   | SQ                  | BCT4F-.6250-XL-SQ   | BCT4-7177 | BCT4-71771 | BCT4-71772 | BCT4-71773 | \$ 155.11            | \$ 174.50                                             |
| 5/8     | 5/8                          | 4         | 3                 | 6                                   | BALL                | BCT4F-.6250-XL-BN   | BCT4-7178 | BCT4-71781 | BCT4-71782 | BCT4-71783 | \$ 193.20            | \$ 217.35                                             |
| 3/4     | 3/4                          | 4         | 1                 | 3                                   | SQ                  | BCT4F-.7500-S-SQ    | BCT4-7179 | BCT4-71791 | BCT4-71792 | BCT4-71793 | \$ 130.38            | \$ 146.68                                             |
| 3/4     | 3/4                          | 4         | 1                 | 3                                   | 0.030               | BCT4F-.7500-S-R.030 | BCT4-7180 | BCT4-71801 | BCT4-71802 | BCT4-71803 | \$ 172.57            | \$ 194.14                                             |
| 3/4     | 3/4                          | 4         | 1                 | 3                                   | BALL                | BCT4F-.7500-S-BN    | BCT4-7181 | BCT4-71811 | BCT4-71812 | BCT4-71813 | \$ 169.76            | \$ 190.98                                             |
| 3/4     | 3/4                          | 4         | 1-1/2             | 4                                   | SQ                  | BCT4F-.7500-SQ      | BCT4-7182 | BCT4-71821 | BCT4-71822 | BCT4-71823 | \$ 149.84            | \$ 168.57                                             |
| 3/4     | 3/4                          | 4         | 1-1/2             | 4                                   | 0.015               | BCT4F-.7500-R.015   | BCT4-7183 | BCT4-71831 | BCT4-71832 | BCT4-71833 | \$ 180.49            | \$ 203.05                                             |
| 3/4     | 3/4                          | 4         | 1-1/2             | 4                                   | 0.02                | BCT4F-.7500-R.020   | BCT4-7184 | BCT4-71841 | BCT4-71842 | BCT4-71843 | \$ 180.49            | \$ 203.05                                             |
| 3/4     | 3/4                          | 4         | 1-1/2             | 4                                   | 0.03                | BCT4F-.7500-R.030   | BCT4-7185 | BCT4-71851 | BCT4-71852 | BCT4-71853 | \$ 180.49            | \$ 203.05                                             |
| 3/4     | 3/4                          | 4         | 1-1/2             | 4                                   | 0.045               | BCT4F-.7500-R.045   | BCT4-7186 | BCT4-71861 | BCT4-71862 | BCT4-71863 | \$ 180.49            | \$ 203.05                                             |
| 3/4     | 3/4                          | 4         | 1-1/2             | 4                                   | 0.060               | BCT4F-.7500-R.060   | BCT4-7187 | BCT4-71871 | BCT4-71872 | BCT4-71873 | \$ 180.49            | \$ 203.05                                             |
| 3/4     | 3/4                          | 4         | 1-1/2             | 4                                   | 0.090               | BCT4F-.7500-R.090   | BCT4-7188 | BCT4-71881 | BCT4-71882 | BCT4-71883 | \$ 180.49            | \$ 203.05                                             |
| 3/4     | 3/4                          | 4         | 1-1/2             | 4                                   | 0.125               | BCT4F-.7500-R.125   | BCT4-7189 | BCT4-71891 | BCT4-71892 | BCT4-71893 | \$ 180.49            | \$ 203.05                                             |
| 3/4     | 3/4                          | 4         | 1-1/2             | 4                                   | BALL                | BCT4F-.7500-BN      | BCT4-7190 | BCT4-71901 | BCT4-71902 | BCT4-71903 | \$ 182.76            | \$ 205.61                                             |
| 3/4     | 3/4                          | 4         | 2-1/4             | 5                                   | SQ                  | BCT4F-.7500-L-SQ    | BCT4-7191 | BCT4-71911 | BCT4-71912 | BCT4-71913 | \$ 195.07            | \$ 219.45                                             |
| 3/4     | 3/4                          | 4         | 2-1/4             | 5                                   | BALL                | BCT4F-.7500-L-BN    | BCT4-7192 | BCT4-71921 | BCT4-71922 | BCT4-71923 | \$ 294.28            | \$ 331.07                                             |
| 3/4     | 3/4                          | 4         | 3                 | 6                                   | SQ                  | BCT4F-.7500-XL-SQ   | BCT4-7193 | BCT4-71931 | BCT4-71932 | BCT4-71933 | \$ 246.42            | \$ 277.22                                             |
| 3/4     | 3/4                          | 4         | 3                 | 6                                   | BALL                | BCT4F-.7500-XL-BN   | BCT4-7194 | BCT4-71941 | BCT4-71942 | BCT4-71943 | \$ 319.07            | \$ 358.95                                             |

# General Purpose Drill Point Endmills



| Carbide | 2 Flute<br>Center<br>Cutting | 30° Helix | Coat on<br>Demand | +.000 / -.002<br>1/8 and<br>Greater | ±.0005 Below<br>1/8 | Series: BCT2-DP     |           |            |            |            |                      |                                                       |
|---------|------------------------------|-----------|-------------------|-------------------------------------|---------------------|---------------------|-----------|------------|------------|------------|----------------------|-------------------------------------------------------|
| CUT DIA | SHANK DIA                    | FLUTES    | LOC               | OAL                                 | DP-ANGLE            | PART NAME           | BRIGHT    | AITiN      | TiCN       | TiN        | PRICE LIST<br>BRIGHT | PRICE LIST<br>COATED<br>(DIA / DLC) Call<br>for Price |
| .015    | 1/8                          | 2         | 0.045             | 1-1/2                               | 90°                 | BCT2F-.015-90°-DP   | BCT2-9500 | BCT2-95001 | BCT2-95002 | BCT2-95003 | \$ 27.90             | \$ 31.39                                              |
| .020    | 1/8                          | 2         | 0.060             | 1-1/2                               | 90°                 | BCT2F-.020-90°-DP   | BCT2-9501 | BCT2-95011 | BCT2-95012 | BCT2-95013 | \$ 27.90             | \$ 31.39                                              |
| .025    | 1/8                          | 2         | 0.075             | 1-1/2                               | 90°                 | BCT2F-.025-90°-DP   | BCT2-9502 | BCT2-95021 | BCT2-95022 | BCT2-95023 | \$ 27.90             | \$ 31.39                                              |
| .030    | 1/8                          | 2         | 0.090             | 1-1/2                               | 90°                 | BCT2F-.030-90°-DP   | BCT2-9503 | BCT2-95031 | BCT2-95032 | BCT2-95033 | \$ 26.14             | \$ 29.41                                              |
| 1/32    | 1/8                          | 2         | 3/32              | 1-1/2                               | 90°                 | BCT2F-.0313-90°-DP  | BCT2-9504 | BCT2-95041 | BCT2-95042 | BCT2-95043 | \$ 15.95             | \$ 17.94                                              |
| .045    | 1/8                          | 2         | 0.105             | 1-1/2                               | 90°                 | BCT2F-.045-90°-DP   | BCT2-9505 | BCT2-95051 | BCT2-95052 | BCT2-95053 | \$ 22.54             | \$ 25.36                                              |
| 3/64    | 1/8                          | 2         | 1/8               | 1-1/2                               | 90°                 | BCT2F-.0469-90°-DP  | BCT2-9506 | BCT2-95061 | BCT2-95062 | BCT2-95063 | \$ 22.54             | \$ 25.36                                              |
| .060    | 1/8                          | 2         | 0.180             | 1-1/2                               | 90°                 | BCT2F-.060-90°-DP   | BCT2-9507 | BCT2-95071 | BCT2-95072 | BCT2-95073 | \$ 22.54             | \$ 25.36                                              |
| 1/16    | 1/8                          | 2         | 3/16              | 1-1/2                               | 60°                 | BCT2F-.0625-60°-DP  | BCT2-9508 | BCT2-95081 | BCT2-95082 | BCT2-95083 | \$ 15.95             | \$ 17.94                                              |
| 1/16    | 1/8                          | 2         | 3/16              | 1-1/2                               | 82°                 | BCT2F-.0625-82°-DP  | BCT2-9509 | BCT2-95091 | BCT2-95092 | BCT2-95093 | \$ 15.95             | \$ 17.94                                              |
| 1/16    | 1/8                          | 2         | 3/16              | 1-1/2                               | 90°                 | BCT2F-.0625-90°-DP  | BCT2-9510 | BCT2-95101 | BCT2-95102 | BCT2-95103 | \$ 15.95             | \$ 17.94                                              |
| 1/16    | 1/8                          | 2         | 3/16              | 1-1/2                               | 120°                | BCT2F-.0625-120°-DP | BCT2-9511 | BCT2-95111 | BCT2-95112 | BCT2-95113 | \$ 15.95             | \$ 17.94                                              |
| 5/64    | 1/8                          | 2         | 3/16              | 1-1/2                               | 90°                 | BCT2F-.0781-90°-DP  | BCT2-9512 | BCT2-95121 | BCT2-95122 | BCT2-95123 | \$ 15.95             | \$ 17.94                                              |
| 3/32    | 1/8                          | 2         | 3/8               | 1-1/2                               | 60°                 | BCT2F-.0938-60°-DP  | BCT2-9513 | BCT2-95131 | BCT2-95132 | BCT2-95133 | \$ 15.95             | \$ 17.94                                              |
| 3/32    | 1/8                          | 2         | 3/8               | 1-1/2                               | 82°                 | BCT2F-.0938-82°-DP  | BCT2-9514 | BCT2-95141 | BCT2-95142 | BCT2-95143 | \$ 15.95             | \$ 17.94                                              |
| 3/32    | 1/8                          | 2         | 3/8               | 1-1/2                               | 90°                 | BCT2F-.0938-90°-DP  | BCT2-9515 | BCT2-95151 | BCT2-95152 | BCT2-95153 | \$ 15.95             | \$ 17.94                                              |
| 3/32    | 1/8                          | 2         | 3/8               | 1-1/2                               | 120°                | BCT2F-.0938-120°-DP | BCT2-9516 | BCT2-95161 | BCT2-95162 | BCT2-95163 | \$ 15.95             | \$ 17.94                                              |
| 1/8     | 1/8                          | 2         | 1/2               | 1-1/2                               | 60°                 | BCT2F-.1250-60°-DP  | BCT2-9517 | BCT2-95171 | BCT2-95172 | BCT2-95173 | \$ 15.30             | \$ 17.21                                              |
| 1/8     | 1/8                          | 2         | 1/2               | 1-1/2                               | 82°                 | BCT2F-.1250-82°-DP  | BCT2-9518 | BCT2-95181 | BCT2-95182 | BCT2-95183 | \$ 15.30             | \$ 17.21                                              |
| 1/8     | 1/8                          | 2         | 1/2               | 1-1/2                               | 90°                 | BCT2F-.1250-90°-DP  | BCT2-9519 | BCT2-95191 | BCT2-95192 | BCT2-95193 | \$ 15.30             | \$ 17.21                                              |
| 1/8     | 1/8                          | 2         | 1/2               | 1-1/2                               | 120°                | BCT2F-.1250-120°-DP | BCT2-9520 | BCT2-95201 | BCT2-95202 | BCT2-95203 | \$ 15.30             | \$ 17.21                                              |
| 5/32    | 3/16                         | 2         | 9/16              | 2                                   | 90°                 | BCT2F-.1563-90°-DP  | BCT2-9521 | BCT2-95211 | BCT2-95212 | BCT2-95213 | \$ 23.07             | \$ 25.95                                              |
| 3/16    | 3/16                         | 2         | 5/8               | 2                                   | 60°                 | BCT2F-.1875-60°-DP  | BCT2-9522 | BCT2-95221 | BCT2-95222 | BCT2-95223 | \$ 21.85             | \$ 24.58                                              |
| 3/16    | 3/16                         | 2         | 5/8               | 2                                   | 82°                 | BCT2F-.1875-82°-DP  | BCT2-9523 | BCT2-95231 | BCT2-95232 | BCT2-95233 | \$ 21.85             | \$ 24.58                                              |
| 3/16    | 3/16                         | 2         | 5/8               | 2                                   | 90°                 | BCT2F-.1875-90°-DP  | BCT2-9524 | BCT2-95241 | BCT2-95242 | BCT2-95243 | \$ 21.84             | \$ 24.57                                              |
| 3/16    | 3/16                         | 2         | 5/8               | 2                                   | 120°                | BCT2F-.1875-120°-DP | BCT2-9525 | BCT2-95251 | BCT2-95252 | BCT2-95253 | \$ 21.84             | \$ 24.57                                              |
| 1/4     | 1/4                          | 2         | 3/4               | 2-1/2                               | 60°                 | BCT2F-.2500-60°DP   | BCT2-9526 | BCT2-95261 | BCT2-95262 | BCT2-95263 | \$ 27.33             | \$ 30.75                                              |
| 1/4     | 1/4                          | 2         | 3/4               | 2-1/2                               | 82°                 | BCT2F-.2500-82°DP   | BCT2-9527 | BCT2-95271 | BCT2-95272 | BCT2-95273 | \$ 27.33             | \$ 30.75                                              |
| 1/4     | 1/4                          | 2         | 3/4               | 2-1/2                               | 90°                 | BCT2F-.2500-90°-DP  | BCT2-9528 | BCT2-95281 | BCT2-95282 | BCT2-95283 | \$ 27.33             | \$ 30.75                                              |
| 1/4     | 1/4                          | 2         | 3/4               | 2-1/2                               | 120°                | BCT2F-.2500-120°DP  | BCT2-9529 | BCT2-95291 | BCT2-95292 | BCT2-95293 | \$ 27.33             | \$ 30.75                                              |
| 5/16    | 5/16                         | 2         | 13/16             | 2-1/2                               | 60°                 | BCT2F-.3125-60°-DP  | BCT2-9530 | BCT2-95301 | BCT2-95302 | BCT2-95303 | \$ 34.41             | \$ 38.71                                              |
| 5/16    | 5/16                         | 2         | 13/16             | 2-1/2                               | 82°                 | BCT2F-.3125-82°-DP  | BCT2-9531 | BCT2-95311 | BCT2-95312 | BCT2-95313 | \$ 34.41             | \$ 38.71                                              |
| 5/16    | 5/16                         | 2         | 13/16             | 2-1/2                               | 90°                 | BCT2F-.3125-90°-DP  | BCT2-9532 | BCT2-95321 | BCT2-95322 | BCT2-95323 | \$ 34.41             | \$ 38.71                                              |
| 5/16    | 5/16                         | 2         | 13/16             | 2-1/2                               | 120°                | BCT2F-.3125-120°-DP | BCT2-9533 | BCT2-95331 | BCT2-95332 | BCT2-95333 | \$ 34.41             | \$ 38.71                                              |
| 3/8     | 3/8                          | 2         | 1                 | 2-1/2                               | 60°                 | BCT2F-.3750-60°-DP  | BCT2-9534 | BCT2-95341 | BCT2-95342 | BCT2-95343 | \$ 43.25             | \$ 48.66                                              |
| 3/8     | 3/8                          | 2         | 1                 | 2-1/2                               | 82°                 | BCT2F-.3750-82°-DP  | BCT2-9535 | BCT2-95351 | BCT2-95352 | BCT2-95353 | \$ 43.25             | \$ 48.66                                              |
| 3/8     | 3/8                          | 2         | 1                 | 2-1/2                               | 90°                 | BCT2F-.3750-90°-DP  | BCT2-9536 | BCT2-95361 | BCT2-95362 | BCT2-95363 | \$ 43.25             | \$ 48.66                                              |
| 3/8     | 3/8                          | 2         | 1                 | 2-1/2                               | 120°                | BCT2F-.3750-120°-DP | BCT2-9537 | BCT2-95371 | BCT2-95372 | BCT2-95373 | \$ 43.25             | \$ 48.66                                              |
| 7/16    | 7/16                         | 2         | 1                 | 2-3/4                               | 60°                 | BCT2F-.4375-60°-DP  | BCT2-9538 | BCT2-95381 | BCT2-95382 | BCT2-95383 | \$ 60.47             | \$ 68.03                                              |
| 7/16    | 7/16                         | 2         | 1                 | 2-3/4                               | 82°                 | BCT2F-.4375-82°-DP  | BCT2-9539 | BCT2-95391 | BCT2-95392 | BCT2-95393 | \$ 60.47             | \$ 68.03                                              |
| 7/16    | 7/16                         | 2         | 1                 | 2-3/4                               | 90°                 | BCT2F-.4375-90°-DP  | BCT2-9540 | BCT2-95401 | BCT2-95402 | BCT2-95403 | \$ 60.47             | \$ 68.03                                              |
| 7/16    | 7/16                         | 2         | 1                 | 2-3/4                               | 120°                | BCT2F-.4375-120°-DP | BCT2-9541 | BCT2-95411 | BCT2-95412 | BCT2-95413 | \$ 60.47             | \$ 68.03                                              |
| 1/2     | 1/2                          | 2         | 1                 | 3                                   | 60°                 | BCT2F-.5000-60°-DP  | BCT2-9542 | BCT2-95421 | BCT2-95422 | BCT2-95423 | \$ 74.13             | \$ 83.40                                              |
| 1/2     | 1/2                          | 2         | 1                 | 3                                   | 82°                 | BCT2F-.5000-82°-DP  | BCT2-9543 | BCT2-95431 | BCT2-95432 | BCT2-95433 | \$ 74.13             | \$ 83.40                                              |
| 1/2     | 1/2                          | 2         | 1                 | 3                                   | 90°                 | BCT2F-.5000-90°-DP  | BCT2-9544 | BCT2-95441 | BCT2-95442 | BCT2-95443 | \$ 74.13             | \$ 83.40                                              |
| 1/2     | 1/2                          | 2         | 1                 | 3                                   | 120°                | BCT2F-.5000-120°-DP | BCT2-9545 | BCT2-95451 | BCT2-95452 | BCT2-95453 | \$ 74.13             | \$ 83.40                                              |
| 5/8     | 5/8                          | 2         | 1-1/4             | 3-1/2                               | 60°                 | BCT2F-.6250-60°-DP  | BCT2-9546 | BCT2-95461 | BCT2-95462 | BCT2-95463 | \$ 141.66            | \$ 159.37                                             |
| 5/8     | 5/8                          | 2         | 1-1/4             | 3-1/2                               | 82°                 | BCT2F-.6250-82°-DP  | BCT2-9547 | BCT2-95471 | BCT2-95472 | BCT2-95473 | \$ 141.64            | \$ 159.35                                             |
| 5/8     | 5/8                          | 2         | 1-1/4             | 3-1/2                               | 90°                 | BCT2F-.6250-90°-DP  | BCT2-9548 | BCT2-95481 | BCT2-95482 | BCT2-95483 | \$ 141.64            | \$ 159.35                                             |
| 5/8     | 5/8                          | 2         | 1-1/4             | 3-1/2                               | 120°                | BCT2F-.6250-120°-DP | BCT2-9549 | BCT2-95491 | BCT2-95492 | BCT2-95493 | \$ 141.64            | \$ 159.35                                             |
| 3/4     | 3/4                          | 2         | 1-1/2             | 4                                   | 60°                 | BCT2F-.7500-60°-DP  | BCT2-9550 | BCT2-95501 | BCT2-95502 | BCT2-95503 | \$ 210.43            | \$ 236.73                                             |
| 3/4     | 3/4                          | 2         | 1-1/2             | 4                                   | 82°                 | BCT2F-.7500-82°-DP  | BCT2-9551 | BCT2-95511 | BCT2-95512 | BCT2-95513 | \$ 210.43            | \$ 236.73                                             |
| 3/4     | 3/4                          | 2         | 1-1/2             | 4                                   | 90°                 | BCT2F-.7500-90°-DP  | BCT2-9552 | BCT2-95521 | BCT2-95522 | BCT2-95523 | \$ 210.43            | \$ 236.73                                             |
| 3/4     | 3/4                          | 2         | 1-1/2             | 4                                   | 120°                | BCT2F-.7500-120°-DP | BCT2-9553 | BCT2-95531 | BCT2-95532 | BCT2-95533 | \$ 210.43            | \$ 236.73                                             |

| MATERIAL                                                                                                           |                       | CONDITIONS |         | CUTTING DIAMETER |        |        |        |        |        |        |        |
|--------------------------------------------------------------------------------------------------------------------|-----------------------|------------|---------|------------------|--------|--------|--------|--------|--------|--------|--------|
|                                                                                                                    |                       |            |         | 1/8"             | 1/4"   | 5/16"  | 3/8"   | 1/2"   | 5/8"   | 3/4"   | 1"     |
| Under 32 HRc    Over 32 HRc                                                                                        |                       |            |         | CHIP PER TOOTH   |        |        |        |        |        |        |        |
| STAINLESS STEELS    ISO-M                                                                                          |                       |            |         |                  |        |        |        |        |        |        |        |
| Precipitation<br>13-8, 15-5, 17-4PH                                                                                | Slotting .5 x Dia.    | 110-200    | 80-115  | 0.0005           | 0.0010 | 0.0012 | 0.0014 | 0.0020 | 0.0025 | 0.0030 | 0.0040 |
|                                                                                                                    | Profiling ≤ .5 x Dia. | 110-200    | 80-115  | 0.0006           | 0.0012 | 0.0015 | 0.0018 | 0.0025 | 0.0031 | 0.0038 | 0.0050 |
| Austenitic<br>302, 303, 304L, 316L                                                                                 | Slotting .5 x Dia.    | 150-275    | 80-180  | 0.0005           | 0.0011 | 0.0014 | 0.0016 | 0.0023 | 0.0029 | 0.0035 | 0.0046 |
|                                                                                                                    | Profiling ≤ .5 x Dia. | 150-275    | 80-180  | 0.0007           | 0.0014 | 0.0018 | 0.0021 | 0.0030 | 0.0038 | 0.0045 | 0.0060 |
| Martensitic<br>403, 410, 416                                                                                       | Slotting .5 x Dia.    | 200-400    | 80-160  | 0.0005           | 0.0011 | 0.0014 | 0.0016 | 0.0023 | 0.0029 | 0.0035 | 0.0046 |
|                                                                                                                    | Profiling ≤ .5 x Dia. | 200-400    | 80-160  | 0.0007           | 0.0014 | 0.0018 | 0.0021 | 0.0030 | 0.0038 | 0.0045 | 0.0060 |
| HIGH TEMP ALLOYS    ISO-S                                                                                          |                       |            |         |                  |        |        |        |        |        |        |        |
| Cobalt Base<br>Stellite, Haynes 25, 188, X-40, L-605                                                               | Slotting .5 x Dia.    | 60-125     | 60-125  | 0.0004           | 0.0007 | 0.0009 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
|                                                                                                                    | Profiling ≤ .5 x Dia. | 60-125     | 60-125  | 0.0005           | 0.0010 | 0.0012 | 0.0014 | 0.0020 | 0.0025 | 0.0030 | 0.0040 |
| Nickel Base<br>Inconel 600, 625, 718, Nickel 200, 270, Invar, Monel 400, 405, K-Monel, PermaNickel 300, Incoly 600 | Slotting .5 x Dia.    | 60-125     | 60-125  | 0.0004           | 0.0007 | 0.0009 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
|                                                                                                                    | Profiling ≤ .5 x Dia. | 60-125     | 60-125  | 0.0005           | 0.0010 | 0.0012 | 0.0014 | 0.0020 | 0.0025 | 0.0030 | 0.0040 |
| Iron Base<br>Incoloy 800-802, Multimet N-155, Timken 16-26-6                                                       | Slotting .5 x Dia.    | 60-125     | 60-125  | 0.0004           | 0.0007 | 0.0009 | 0.0011 | 0.0015 | 0.0019 | 0.0023 | 0.0030 |
|                                                                                                                    | Profiling ≤ .5 x Dia. | 60-125     | 60-125  | 0.0005           | 0.0010 | 0.0012 | 0.0014 | 0.0020 | 0.0025 | 0.0030 | 0.0040 |
| STEELS    ISO-P                                                                                                    |                       |            |         |                  |        |        |        |        |        |        |        |
| High Strength Steels<br>4140, 4340, 52100                                                                          | Slotting .5 x Dia.    | 150-300    | 80-180  | 0.0005           | 0.0010 | 0.0012 | 0.0014 | 0.0020 | 0.0025 | 0.0030 | 0.004  |
|                                                                                                                    | Profiling ≤ .5 x Dia. | 150-300    | 80-180  | 0.0006           | 0.0010 | 0.0012 | 0.0018 | 0.0025 | 0.0031 | 0.0038 | 0.005  |
| High Alloy Steels - Mold & Die<br>A-2, P20, 01, 02, D2, H-13                                                       | Slotting .5 x Dia.    | 150-275    | 80-185  | 0.0005           | 0.0010 | 0.0012 | 0.0014 | 0.0020 | 0.0025 | 0.0030 | 0.004  |
|                                                                                                                    | Profiling ≤ .5 x Dia. | 150-275    | 80-185  | 0.0006           | 0.0010 | 0.0012 | 0.0018 | 0.0025 | 0.0031 | 0.0038 | 0.005  |
| Medium Alloy Steels<br>200, 250, 300                                                                               | Slotting .5 x Dia.    | 175-350    | 100-225 | 0.0005           | 0.0010 | 0.0012 | 0.0014 | 0.0020 | 0.0025 | 0.0030 | 0.004  |
|                                                                                                                    | Profiling ≤ .5 x Dia. | 175-350    | 100-225 | 0.0006           | 0.0010 | 0.0012 | 0.0018 | 0.0025 | 0.0031 | 0.0038 | 0.005  |
| Low Alloy Steels-Maraging<br>10XX, 11XX, 13XX                                                                      | Slotting .5 x Dia.    | 200-450    | 100-250 | 0.0006           | 0.0012 | 0.0015 | 0.0018 | 0.0025 | 0.0031 | 0.0038 | 0.005  |
|                                                                                                                    | Profiling ≤ .5 x Dia. | 200-450    | 100-250 | 0.0007           | 0.0014 | 0.0018 | 0.0021 | 0.0030 | 0.0038 | 0.0045 | 0.006  |
| CAST IRONS    ISO-K                                                                                                |                       |            |         |                  |        |        |        |        |        |        |        |
| Ductile Iron<br>Ductile Cast Iron                                                                                  | Slotting .5 x Dia.    | 120-325    | 80-140  | 0.0005           | 0.0010 | 0.0012 | 0.0014 | 0.0020 | 0.0025 | 0.0030 | 0.0040 |
|                                                                                                                    | Profiling ≤ .5 x Dia. | 120-325    | 80-140  | 0.0006           | 0.0012 | 0.0015 | 0.0018 | 0.0025 | 0.0031 | 0.0038 | 0.0050 |
| Cast Iron<br>Grey Cast Iron                                                                                        | Slotting .5 x Dia.    | 250-425    | 125-285 | 0.0005           | 0.0010 | 0.0012 | 0.0014 | 0.0020 | 0.0025 | 0.0030 | 0.0040 |
|                                                                                                                    | Profiling ≤ .5 x Dia. | 250-425    | 125-285 | 0.0006           | 0.0012 | 0.0015 | 0.0018 | 0.0025 | 0.0031 | 0.0038 | 0.0050 |
| TITANIUMS    ISO-S                                                                                                 |                       |            |         |                  |        |        |        |        |        |        |        |
| Titanium Alloys<br>6AL-4V, ASTM 1, 2, 3, 6AL-2S<br>For 5553, decrease SFM and IPM by 25%                           | Slotting .5 x Dia.    | 140-200    | 90-145  | 0.0005           | 0.0010 | 0.0012 | 0.0014 | 0.0020 | 0.0025 | 0.0030 | 0.0040 |
|                                                                                                                    | Profiling ≤ .5 x Dia. | 140-200    | 90-145  | 0.0006           | 0.0012 | 0.0015 | 0.0018 | 0.0025 | 0.0031 | 0.0038 | 0.0050 |
| ALUMINUM    ISO-N                                                                                                  |                       |            |         |                  |        |        |        |        |        |        |        |
| Aluminum Alloys<br>6061-T6, 7075                                                                                   | Slotting .5 x Dia.    | 600-1000   | NA      | 0.0006           | 0.0012 | 0.0015 | 0.0018 | 0.003  | 0.005  | 0.006  | 0.0080 |
|                                                                                                                    | Profiling ≤ .5 x Dia. | 600-1000   | NA      | 0.0007           | 0.0014 | 0.0018 | 0.0025 | 0.0035 | 0.006  | 0.0068 | 0.0100 |