

# *Metallroy*

T O O L I N G

HTC<sup>®</sup>  
TOOL-CUTTER & MFG.



***100% MADE IN MICHIGAN, U.S.A.***

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SOLID CARBIDE END MILLS

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**Series 120****Metalloy****HTC** **SOLID CARBIDE END MILLS****STANDARD LENGTH****SINGLE END SQUARE****2-3-4 FLUTE****UNCOATED**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 3 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|---------------|------------|
| 1/64"      | 1/16"        | 1-1/2"      | 120-2015      | 120-3015      | 120-4015      | \$10.00    |
| 1/32"      | 3/32"        | 1-1/2"      | 120-2031      | 120-3031      | 120-4031      | \$6.00     |
| 3/64"      | 1/8"         | 1-1/2"      | 120-2046      | 120-3046      | 120-4046      | \$6.00     |
| 1/16"      | 3/16"        | 1-1/2"      | 120-2062      | 120-3062      | 120-4062      | \$4.80     |
| 5/64"      | 1/4"         | 1-1/2"      | 120-2078      | 120-3078      | 120-4078      | \$4.50     |
| 3/32"      | 3/8"         | 1-1/2"      | 120-2093      | 120-3093      | 120-4093      | \$4.20     |
| 7/64"      | 3/8"         | 1-1/2"      | 120-2109      | 120-3109      | 120-4109      | \$4.20     |
| 1/8"       | 1/2"         | 1-1/2"      | 120-2125      | 120-3125      | 120-4125      | \$4.00     |
| 9/64"      | 9/16"        | 2"          | 120-2140      | 120-3140      | 120-4140      | \$9.30     |
| 5/32"      | 9/16"        | 2"          | 120-2156      | 120-3156      | 120-4156      | \$8.90     |
| 11/64"     | 9/16"        | 2"          | 120-2171      | 120-3171      | 120-4171      | \$9.30     |
| 3/16"      | 5/8"         | 2"          | 120-2187      | 120-3187      | 120-4187      | \$8.60     |
| 13/64"     | 5/8"         | 2-1/2"      | 120-2203      | 120-3203      | 120-4203      | \$11.78    |
| 7/32"      | 5/8"         | 2-1/2"      | 120-2218      | 120-3218      | 120-4218      | \$10.40    |
| 15/64"     | 3/4"         | 2-1/2"      | 120-2234      | 120-3234      | 120-4234      | \$11.78    |
| 1/4"       | 3/4"         | 2-1/2"      | 120-2250      | 120-3250      | 120-4250      | \$8.50     |

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 3 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|---------------|------------|
| 17/64"     | 7/8"         | 2-1/2"      | 120-2265      | 120-3265      | 120-4265      | \$14.10    |
| 9/32"      | 7/8"         | 2-1/2"      | 120-2281      | 120-3281      | 120-4281      | \$12.90    |
| 19/64"     | 7/8"         | 2-1/2"      | 120-2296      | 120-3296      | 120-4296      | \$14.10    |
| 5/16"      | 7/8"         | 2-1/2"      | 120-2312      | 120-3312      | 120-4312      | \$11.50    |
| 21/64"     | 7/8"         | 2-1/2"      | 120-2328      | 120-3328      | 120-4328      | \$16.30    |
| 11/32"     | 7/8"         | 2-1/2"      | 120-2343      | 120-3343      | 120-4343      | \$15.00    |
| 23/64"     | 7/8"         | 2-1/2"      | 120-2359      | 120-3359      | 120-4359      | \$16.30    |
| 3/8"       | 7/8"         | 2-1/2"      | 120-2375      | 120-3375      | 120-4375      | \$14.60    |
| 25/64"     | 7/8"         | 2-1/2"      | 120-2390      | 120-3390      | 120-4390      | \$25.50    |
| 13/32"     | 7/8"         | 2-1/2"      | 120-2406      | 120-3406      | 120-4406      | \$25.00    |
| 27/64"     | 7/8"         | 2-1/2"      | 120-2421      | 120-3421      | 120-4421      | \$24.00    |
| 7/16"      | 1"           | 2-1/2"      | 120-2437      | 120-3437      | 120-4437      | \$21.00    |
| 29/64"     | 1"           | 3"          | 120-2453      | 120-3453      | 120-4453      | \$28.20    |
| 15/32"     | 1"           | 3"          | 120-2468      | 120-3468      | 120-4468      | \$27.50    |
| 31/64"     | 1"           | 3"          | 120-2484      | 120-3484      | 120-4484      | \$26.50    |
| 1/2"       | 1"           | 3"          | 120-2500      | 120-3500      | 120-4500      | \$25.00    |

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## SOLID CARBIDE END MILLS

### STANDARD LENGTH

### SINGLE END SQUARE

### 2-3-4 FLUTE

### UNCOATED



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 3 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|---------------|------------|
| 33/64"     | 1-1/4"       | 3-1/2"      | 120-2515      | 120-3515      | 120-4515      | \$56.30    |
| 17/32"     | 1-1/4"       | 3-1/2"      | 120-2531      | 120-3531      | 120-4531      | \$55.90    |
| 35/64"     | 1-1/4"       | 3-1/2"      | 120-2546      | 120-3546      | 120-4546      | \$53.00    |
| 9/16"      | 1-1/4"       | 3-1/2"      | 120-2562      | 120-3562      | 120-4562      | \$49.00    |
| 37/64"     | 1-1/4"       | 3-1/2"      | 120-2578      | 120-3578      | 120-4578      | \$58.20    |
| 19/32"     | 1-1/4"       | 3-1/2"      | 120-2593      | 120-3593      | 120-4593      | \$56.00    |
| 39/64"     | 1-1/4"       | 3-1/2"      | 120-2609      | 120-3609      | 120-4609      | \$54.00    |
| 5/8"       | 1-1/4"       | 3-1/2"      | 120-2625      | 120-3625      | 120-4625      | \$51.00    |
| 41/64"     | 1-1/2"       | 4"          | 120-2640      | 120-3640      | 120-4640      | \$85.72    |
| 21/32"     | 1-1/2"       | 4"          | 120-2656      | 120-3656      | 120-4656      | \$85.00    |
| 43/64"     | 1-1/2"       | 4"          | 120-2671      | 120-3671      | 120-4671      | \$84.00    |
| 11/16"     | 1-1/2"       | 4"          | 120-2687      | 120-3687      | 120-4687      | \$74.00    |
| 45/64"     | 1-1/2"       | 4"          | 120-2703      | 120-3703      | 120-4703      | \$79.00    |
| 23/32"     | 1-1/2"       | 4"          | 120-2718      | 120-3718      | 120-4718      | \$79.00    |
| 47/64"     | 1-1/2"       | 4"          | 120-2734      | 120-3734      | 120-4737      | \$79.00    |
| 3/4"       | 1-1/2"       | 4"          | 120-2750      | 120-3750      | 120-4750      | \$71.00    |

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 3 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|---------------|------------|
| 49/64"     | 1-1/2"       | 4"          | 120-2765      | 120-3765      | 120-4765      | \$143.00   |
| 25/32"     | 1-1/2"       | 4"          | 120-2781      | 120-3781      | 120-4781      | \$143.00   |
| 51/64"     | 1-1/2"       | 4"          | 120-2796      | 120-3796      | 120-4796      | \$143.00   |
| 13/16"     | 1-1/2"       | 4"          | 120-2812      | 120-3812      | 120-4812      | \$143.00   |
| 53/64"     | 1-1/2"       | 4"          | 120-2828      | 120-3828      | 120-4828      | \$138.60   |
| 27/32"     | 1-1/2"       | 4"          | 120-2843      | 120-3843      | 120-4843      | \$138.60   |
| 55/64"     | 1-1/2"       | 4"          | 120-2859      | 120-3859      | 120-4859      | \$138.60   |
| 7/8"       | 1-1/2"       | 4"          | 120-2875      | 120-3875      | 120-4875      | \$126.00   |
| 57/64"     | 1-1/2"       | 4"          | 120-2890      | 120-3890      | 120-4890      | \$147.20   |
| 29/32"     | 1-1/2"       | 4"          | 120-2906      | 120-3906      | 120-4906      | \$147.20   |
| 59/64"     | 1-1/2"       | 4"          | 120-2921      | 120-3921      | 120-4921      | \$147.20   |
| 15/16"     | 1-1/2"       | 4"          | 120-2937      | 120-3937      | 120-4937      | \$140.80   |
| 61/64"     | 1-1/2"       | 4"          | 120-2953      | 120-3953      | 120-4953      | \$140.80   |
| 31/32"     | 1-1/2"       | 4"          | 120-2968      | 120-3968      | 120-4968      | \$140.80   |
| 63/64"     | 1-1/2"       | 4"          | 120-2984      | 120-3984      | 120-4984      | \$140.80   |
| 1"         | 1-1/2"       | 4"          | 120-2100      | 120-3100      | 120-4100      | \$128.00   |

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Series 125

*Metalloy*HTC **SOLID CARBIDE END MILLS****STANDARD LENGTH****SINGLE END SQUARE****2-3-4 FLUTE****TIN COATED**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 3 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|---------------|------------|
| 1/64"      | 1/16"        | 1-1/2"      | 125-2015      | 125-3015      | 125-4015      | \$7.30     |
| 1/32"      | 3/32"        | 1-1/2"      | 125-2031      | 125-3031      | 125-4031      | \$6.90     |
| 3/64"      | 1/8"         | 1-1/2"      | 125-2046      | 125-3046      | 125-4046      | \$6.90     |
| 1/16"      | 3/16"        | 1-1/2"      | 125-2062      | 125-3062      | 125-4062      | \$5.70     |
| 5/64"      | 1/4"         | 1-1/2"      | 125-2078      | 125-3078      | 125-4078      | \$5.08     |
| 3/32"      | 3/8"         | 1-1/2"      | 125-2093      | 125-3093      | 125-4093      | \$5.10     |
| 7/64"      | 3/8"         | 1-1/2"      | 125-2109      | 125-3109      | 125-4109      | \$5.00     |
| 1/8"       | 1/2"         | 1-1/2"      | 125-2125      | 125-3125      | 125-4125      | \$4.90     |
| 9/64"      | 9/16"        | 2"          | 125-2140      | 125-3140      | 125-4140      | \$10.34    |
| 5/32"      | 9/16"        | 2"          | 125-2156      | 125-3156      | 125-4156      | \$10.20    |
| 11/64"     | 9/16"        | 2"          | 125-2171      | 125-3171      | 125-4171      | \$10.22    |
| 3/16"      | 5/8"         | 2"          | 125-2187      | 125-3187      | 125-4187      | \$9.90     |
| 13/64"     | 5/8"         | 2-1/2"      | 125-2203      | 125-3203      | 125-4203      | \$13.66    |
| 7/32"      | 5/8"         | 2-1/2"      | 125-2218      | 125-3218      | 125-4218      | \$12.70    |
| 15/64"     | 3/4"         | 2-1/2"      | 125-2234      | 125-3234      | 125-4234      | \$13.50    |
| 1/4"       | 3/4"         | 2-1/2"      | 125-2250      | 125-3250      | 125-4250      | \$12.50    |

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 3 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|---------------|------------|
| 17/64"     | 7/8"         | 2-1/2"      | 125-2265      | 125-3265      | 125-4265      | \$15.92    |
| 9/32"      | 7/8"         | 2-1/2"      | 125-2281      | 125-3281      | 125-4281      | \$15.50    |
| 19/64"     | 7/8"         | 2-1/2"      | 125-2296      | 125-3296      | 125-4296      | \$15.68    |
| 5/16"      | 7/8"         | 2-1/2"      | 125-2312      | 125-3312      | 125-4312      | \$15.20    |
| 21/64"     | 7/8"         | 2-1/2"      | 125-2328      | 125-3328      | 125-4328      | \$18.52    |
| 11/32"     | 7/8"         | 2-1/2"      | 125-2343      | 125-3343      | 125-4343      | \$18.00    |
| 23/64"     | 7/8"         | 2-1/2"      | 125-2359      | 120-3359      | 125-4359      | \$17.86    |
| 3/8"       | 7/8"         | 2-1/2"      | 125-2375      | 120-3375      | 125-4375      | \$17.50    |
| 25/64"     | 7/8"         | 2-1/2"      | 125-2390      | 120-3390      | 125-4390      | \$31.50    |
| 13/32"     | 7/8"         | 2-1/2"      | 125-2406      | 120-3406      | 125-4406      | \$31.00    |
| 27/64"     | 7/8"         | 2-1/2"      | 125-2421      | 120-3421      | 125-4421      | \$30.00    |
| 7/16"      | 1"           | 2-1/2"      | 125-2437      | 120-3437      | 125-4437      | \$30.00    |
| 29/64"     | 1"           | 3"          | 125-2453      | 120-3453      | 125-4453      | \$33.96    |
| 15/32"     | 1"           | 3"          | 125-2468      | 120-3468      | 125-4468      | \$33.88    |
| 31/64"     | 1"           | 3"          | 125-2484      | 120-3484      | 125-4484      | \$33.06    |
| 1/2"       | 1"           | 3"          | 125-2500      | 120-3500      | 125-4500      | \$30.20    |

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## SOLID CARBIDE END MILLS

### STANDARD LENGTH

### SINGLE END SQUARE

### 2-3-4 FLUTE

### TIN COATED



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 3 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|---------------|------------|
| 33/64"     | 1-1/4"       | 3-1/2"      | 125-2515      | 125-3515      | 125-4515      | \$74.44    |
| 17/32"     | 1-1/4"       | 3-1/2"      | 125-2531      | 125-3531      | 125-4531      | \$72.74    |
| 35/64"     | 1-1/4"       | 3-1/2"      | 125-2546      | 125-3546      | 125-4546      | \$83.56    |
| 9/16"      | 1-1/4"       | 3-1/2"      | 125-2562      | 125-3562      | 125-4562      | \$58.30    |
| 37/64"     | 1-1/4"       | 3-1/2"      | 125-2578      | 125-3578      | 125-4578      | \$72.00    |
| 19/32"     | 1-1/4"       | 3-1/2"      | 125-2593      | 125-3593      | 125-4593      | \$70.36    |
| 39/64"     | 1-1/4"       | 3-1/2"      | 125-2609      | 125-3609      | 125-4609      | \$68.32    |
| 5/8"       | 1-1/4"       | 3-1/2"      | 125-2625      | 125-3625      | 125-4625      | \$57.60    |
| 41/64"     | 1-1/2"       | 4"          | 125-2640      | 125-3640      | 125-4640      | \$102.30   |
| 21/32"     | 1-1/2"       | 4"          | 125-2656      | 125-3656      | 125-4656      | \$100.90   |
| 43/64"     | 1-1/2"       | 4"          | 125-2671      | 125-3671      | 125-4671      | \$99.34    |
| 11/16"     | 1-1/2"       | 4"          | 125-2687      | 125-3687      | 125-4687      | \$95.70    |
| 45/64"     | 1-1/2"       | 4"          | 125-2703      | 125-3703      | 125-4703      | \$94.12    |
| 23/32"     | 1-1/2"       | 4"          | 125-2718      | 125-3718      | 125-4718      | \$93.18    |
| 47/64"     | 1-1/2"       | 4"          | 125-2734      | 125-3734      | 125-4737      | \$92.40    |
| 3/4"       | 1-1/2"       | 4"          | 125-2750      | 125-3750      | 125-4750      | \$82.80    |

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 3 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|---------------|------------|
| 49/64"     | 1-1/2"       | 4"          | 125-2765      | 125-3765      | 125-4765      | \$159.06   |
| 25/32"     | 1-1/2"       | 4"          | 125-2781      | 125-3781      | 125-4781      | \$158.18   |
| 51/64"     | 1-1/2"       | 4"          | 125-2796      | 125-3796      | 125-4796      | \$157.30   |
| 13/16"     | 1-1/2"       | 4"          | 125-2812      | 125-3812      | 125-4812      | \$156.20   |
| 53/64"     | 1-1/2"       | 4"          | 125-2828      | 125-3828      | 125-4828      | \$156.98   |
| 27/32"     | 1-1/2"       | 4"          | 125-2843      | 125-3843      | 125-4843      | \$156.68   |
| 55/64"     | 1-1/2"       | 4"          | 125-2859      | 125-3859      | 125-4859      | \$156.20   |
| 7/8"       | 1-1/2"       | 4"          | 125-2875      | 125-3875      | 125-4875      | \$140.60   |
| 57/64"     | 1-1/2"       | 4"          | 125-2890      | 125-3890      | 125-4890      | \$167.06   |
| 29/32"     | 1-1/2"       | 4"          | 125-2906      | 125-3906      | 125-4906      | \$163.90   |
| 59/64"     | 1-1/2"       | 4"          | 125-2921      | 125-3921      | 125-4921      | \$161.70   |
| 15/16"     | 1-1/2"       | 4"          | 125-2937      | 125-3937      | 125-4937      | \$158.40   |
| 61/64"     | 1-1/2"       | 4"          | 125-2953      | 125-3953      | 125-4953      | \$160.56   |
| 31/32"     | 1-1/2"       | 4"          | 125-2968      | 125-3968      | 125-4968      | \$159.56   |
| 63/64"     | 1-1/2"       | 4"          | 125-2984      | 125-3984      | 125-4984      | \$158.40   |
| 1"         | 1-1/2"       | 4"          | 125-2100      | 125-3100      | 125-4100      | \$142.60   |

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**Series 127****Metalloy****HTC** **SOLID CARBIDE END MILLS****STANDARD LENGTH****SINGLE END SQUARE****2-3-4 FLUTE****TICN COAT-HTC PROGRESSIVE COAT**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 3 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|---------------|------------|
| 1/64"      | 1/16"        | 1-1/2"      | 127-2015      | 127-3015      | 127-4015      | \$7.86     |
| 1/32"      | 3/32"        | 1-1/2"      | 127-2031      | 127-3031      | 127-4031      | \$7.55     |
| 3/64"      | 1/8"         | 1-1/2"      | 127-2046      | 127-3046      | 127-4046      | \$7.55     |
| 1/16"      | 3/16"        | 1-1/2"      | 127-2062      | 127-3062      | 127-4062      | \$6.38     |
| 5/64"      | 1/4"         | 1-1/2"      | 127-2078      | 127-3078      | 127-4078      | \$6.21     |
| 3/32"      | 3/8"         | 1-1/2"      | 127-2093      | 127-3093      | 127-4093      | \$5.80     |
| 7/64"      | 3/8"         | 1-1/2"      | 127-2109      | 127-3109      | 127-4109      | \$5.82     |
| 1/8"       | 1/2"         | 1-1/2"      | 127-2125      | 127-3125      | 127-4125      | \$5.61     |
| 9/64"      | 9/16"        | 2"          | 127-2140      | 127-3140      | 127-4140      | \$12.01    |
| 5/32"      | 9/16"        | 2"          | 127-2156      | 127-3156      | 127-4156      | \$11.16    |
| 11/64"     | 9/16"        | 2"          | 127-2171      | 127-3171      | 127-4171      | \$11.60    |
| 3/16"      | 5/8"         | 2"          | 127-2187      | 127-3187      | 127-4187      | \$10.86    |
| 13/64"     | 5/8"         | 2-1/2"      | 127-2203      | 127-3203      | 127-4203      | \$16.04    |
| 7/32"      | 5/8"         | 2-1/2"      | 127-2218      | 127-3218      | 127-4218      | \$14.61    |
| 15/64"     | 3/4"         | 2-1/2"      | 127-2234      | 127-3234      | 127-4234      | \$15.83    |
| 1/4"       | 3/4"         | 2-1/2"      | 127-2250      | 127-3250      | 127-4250      | \$12.77    |

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 3 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|---------------|------------|
| 17/64"     | 7/8"         | 2-1/2"      | 127-2265      | 127-3265      | 127-4265      | \$19.34    |
| 9/32"      | 7/8"         | 2-1/2"      | 127-2281      | 127-3281      | 127-4281      | \$17.46    |
| 19/64"     | 7/8"         | 2-1/2"      | 127-2296      | 127-3296      | 127-4296      | \$18.70    |
| 5/16"      | 7/8"         | 2-1/2"      | 127-2312      | 127-3312      | 127-4312      | \$17.52    |
| 21/64"     | 7/8"         | 2-1/2"      | 127-2328      | 127-3328      | 127-4328      | \$23.12    |
| 11/32"     | 7/8"         | 2-1/2"      | 127-2343      | 127-3343      | 127-4343      | \$20.91    |
| 23/64"     | 7/8"         | 2-1/2"      | 127-2359      | 127-3359      | 127-4359      | \$21.09    |
| 3/8"       | 7/8"         | 2-1/2"      | 127-2375      | 127-3375      | 127-4375      | \$20.53    |
| 25/64"     | 7/8"         | 2-1/2"      | 127-2390      | 127-3390      | 127-4390      | \$31.04    |
| 13/32"     | 7/8"         | 2-1/2"      | 127-2406      | 127-3406      | 127-4406      | \$30.56    |
| 27/64"     | 7/8"         | 2-1/2"      | 127-2421      | 127-3421      | 127-4421      | \$29.29    |
| 7/16"      | 1"           | 2-1/2"      | 127-2437      | 127-3437      | 127-4437      | \$29.47    |
| 29/64"     | 1"           | 3"          | 127-2453      | 127-3453      | 127-4453      | \$36.76    |
| 15/32"     | 1"           | 3"          | 127-2468      | 127-3468      | 127-4468      | \$36.38    |
| 31/64"     | 1"           | 3"          | 127-2484      | 127-3484      | 127-4484      | \$35.89    |
| 1/2"       | 1"           | 3"          | 127-2500      | 127-3500      | 127-4500      | \$33.35    |

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## SOLID CARBIDE END MILLS

### STANDARD LENGTH

### SINGLE END SQUARE

### 2-3-4 FLUTE

### TICN COAT-HTC PROGRESSIVE COAT



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 3 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|---------------|------------|
| 33/64"     | 1-1/4"       | 3-1/2"      | 127-2515      | 127-3515      | 127-4515      | \$78.90    |
| 17/32"     | 1-1/4"       | 3-1/2"      | 127-2531      | 127-3531      | 127-4531      | \$77.21    |
| 35/64"     | 1-1/4"       | 3-1/2"      | 127-2546      | 127-3546      | 127-4546      | \$72.91    |
| 9/16"      | 1-1/4"       | 3-1/2"      | 127-2562      | 127-3562      | 127-4562      | \$61.73    |
| 37/64"     | 1-1/4"       | 3-1/2"      | 127-2578      | 127-3578      | 127-4578      | \$74.22    |
| 19/32"     | 1-1/4"       | 3-1/2"      | 127-2593      | 127-3593      | 127-4593      | \$72.91    |
| 39/64"     | 1-1/4"       | 3-1/2"      | 127-2609      | 127-3609      | 127-4609      | \$71.53    |
| 5/8"       | 1-1/4"       | 3-1/2"      | 127-2625      | 127-3625      | 127-4625      | \$63.67    |
| 41/64"     | 1-1/2"       | 4"          | 127-2640      | 127-3640      | 127-4640      | \$98.01    |
| 21/32"     | 1-1/2"       | 4"          | 127-2656      | 127-3656      | 127-4656      | \$96.42    |
| 43/64"     | 1-1/2"       | 4"          | 127-2671      | 127-3671      | 127-4671      | \$96.22    |
| 11/16"     | 1-1/2"       | 4"          | 127-2687      | 127-3687      | 127-4687      | \$93.90    |
| 45/64"     | 1-1/2"       | 4"          | 127-2703      | 127-3703      | 127-4703      | \$95.16    |
| 23/32"     | 1-1/2"       | 4"          | 127-2718      | 127-3718      | 127-4718      | \$94.48    |
| 47/64"     | 1-1/2"       | 4"          | 127-2734      | 127-3734      | 127-4737      | \$94.22    |
| 3/4"       | 1-1/2"       | 4"          | 127-2750      | 127-3750      | 127-4750      | \$85.09    |

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 3 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|---------------|------------|
| 49/64"     | 1-1/2"       | 4"          | 127-2765      | 127-3765      | 127-4765      | \$174.99   |
| 25/32"     | 1-1/2"       | 4"          | 127-2781      | 127-3781      | 127-4781      | \$174.25   |
| 51/64"     | 1-1/2"       | 4"          | 127-2796      | 127-3796      | 127-4796      | \$173.49   |
| 13/16"     | 1-1/2"       | 4"          | 127-2812      | 127-3812      | 127-4812      | \$170.72   |
| 53/64"     | 1-1/2"       | 4"          | 127-2828      | 127-3828      | 127-4828      | \$171.79   |
| 27/32"     | 1-1/2"       | 4"          | 127-2843      | 127-3843      | 127-4843      | \$171.26   |
| 55/64"     | 1-1/2"       | 4"          | 127-2859      | 127-3859      | 127-4859      | \$170.72   |
| 7/8"       | 1-1/2"       | 4"          | 127-2875      | 127-3875      | 127-4875      | \$150.60   |
| 57/64"     | 1-1/2"       | 4"          | 127-2890      | 127-3890      | 127-4890      | \$176.50   |
| 29/32"     | 1-1/2"       | 4"          | 127-2906      | 127-3906      | 127-4906      | \$175.47   |
| 59/64"     | 1-1/2"       | 4"          | 127-2921      | 127-3921      | 127-4921      | \$174.46   |
| 15/16"     | 1-1/2"       | 4"          | 127-2937      | 127-3937      | 127-4937      | \$170.72   |
| 61/64"     | 1-1/2"       | 4"          | 127-2953      | 127-3953      | 127-4953      | \$169.65   |
| 31/32"     | 1-1/2"       | 4"          | 127-2968      | 127-3968      | 127-4968      | \$168.57   |
| 63/64"     | 1-1/2"       | 4"          | 127-2984      | 127-3984      | 127-4984      | \$168.40   |
| 1"         | 1-1/2"       | 4"          | 127-2100      | 127-3100      | 127-4100      | \$152.54   |

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**Series 130****Metalloy****HTC** **SOLID CARBIDE END MILLS****STANDARD LENGTH****SINGLE END SQUARE****2-3-4 FLUTE****ALTIN COATED - HTC HARD COAT**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 3 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|---------------|------------|
| 1/64"      | 1/16"        | 1-1/2"      | 130-2015      | 130-3015      | 130-4015      | \$8.10     |
| 1/32"      | 3/32"        | 1-1/2"      | 130-2031      | 130-3031      | 130-4031      | \$7.78     |
| 3/64"      | 1/8"         | 1-1/2"      | 130-2046      | 130-3046      | 130-4046      | \$7.78     |
| 1/16"      | 3/16"        | 1-1/2"      | 130-2062      | 130-3062      | 130-4062      | \$6.58     |
| 5/64"      | 1/4"         | 1-1/2"      | 130-2078      | 130-3078      | 130-4078      | \$6.40     |
| 3/32"      | 3/8"         | 1-1/2"      | 130-2093      | 130-3093      | 130-4093      | \$5.98     |
| 7/64"      | 3/8"         | 1-1/2"      | 130-2109      | 130-3109      | 130-4109      | \$6.00     |
| 1/8"       | 1/2"         | 1-1/2"      | 130-2125      | 130-3125      | 130-4125      | \$5.78     |
| 9/64"      | 9/16"        | 2"          | 130-2140      | 130-3140      | 130-4140      | \$12.38    |
| 5/32"      | 9/16"        | 2"          | 130-2156      | 130-3156      | 130-4156      | \$11.50    |
| 11/64"     | 9/16"        | 2"          | 130-2171      | 130-3171      | 130-4171      | \$11.96    |
| 3/16"      | 5/8"         | 2"          | 130-2187      | 130-3187      | 130-4187      | \$11.20    |
| 13/64"     | 5/8"         | 2-1/2"      | 130-2203      | 130-3203      | 130-4203      | \$16.54    |
| 7/32"      | 5/8"         | 2-1/2"      | 130-2218      | 130-3218      | 130-4218      | \$15.06    |
| 15/64"     | 3/4"         | 2-1/2"      | 130-2234      | 130-3234      | 130-4234      | \$16.32    |
| 1/4"       | 3/4"         | 2-1/2"      | 130-2250      | 130-3250      | 130-4250      | \$13.16    |

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 3 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|---------------|------------|
| 17/64"     | 7/8"         | 2-1/2"      | 130-2265      | 130-3265      | 130-4265      | \$19.94    |
| 9/32"      | 7/8"         | 2-1/2"      | 130-2281      | 130-3281      | 130-4281      | \$18.56    |
| 19/64"     | 7/8"         | 2-1/2"      | 130-2296      | 130-3296      | 130-4296      | \$19.28    |
| 5/16"      | 7/8"         | 2-1/2"      | 130-2312      | 130-3312      | 130-4312      | \$18.06    |
| 21/64"     | 7/8"         | 2-1/2"      | 130-2328      | 130-3328      | 130-4328      | \$23.84    |
| 11/32"     | 7/8"         | 2-1/2"      | 130-2343      | 130-3343      | 130-4343      | \$21.56    |
| 23/64"     | 7/8"         | 2-1/2"      | 130-2359      | 130-3359      | 130-4359      | \$21.74    |
| 3/8"       | 7/8"         | 2-1/2"      | 130-2375      | 130-3375      | 130-4375      | \$21.16    |
| 25/64"     | 7/8"         | 2-1/2"      | 130-2390      | 130-3390      | 130-4390      | \$32.00    |
| 13/32"     | 7/8"         | 2-1/2"      | 130-2406      | 130-3406      | 130-4406      | \$31.50    |
| 27/64"     | 7/8"         | 2-1/2"      | 130-2421      | 130-3421      | 130-4421      | \$30.20    |
| 7/16"      | 1"           | 2-1/2"      | 130-2437      | 130-3437      | 130-4437      | \$30.38    |
| 29/64"     | 1"           | 3"          | 130-2453      | 130-3453      | 130-4453      | \$37.90    |
| 15/32"     | 1"           | 3"          | 130-2468      | 130-3468      | 130-4468      | \$37.50    |
| 31/64"     | 1"           | 3"          | 130-2484      | 130-3484      | 130-4484      | \$37.00    |
| 1/2"       | 1"           | 3"          | 130-2500      | 130-3500      | 130-4500      | \$34.38    |

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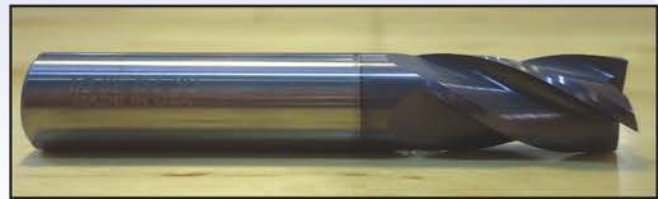
## SOLID CARBIDE END MILLS

### STANDARD LENGTH

SINGLE END SQUARE

2-3-4 FLUTE

ALTIN COATED - **HTC** HARD COAT



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 3 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|---------------|------------|
| 33/64"     | 1-1/4"       | 3-1/2"      | 130-2515      | 130-3515      | 130-4515      | \$81.34    |
| 17/32"     | 1-1/4"       | 3-1/2"      | 130-2531      | 130-3531      | 130-4531      | \$79.60    |
| 35/64"     | 1-1/4"       | 3-1/2"      | 130-2546      | 130-3546      | 130-4546      | \$75.16    |
| 9/16"      | 1-1/4"       | 3-1/2"      | 130-2562      | 130-3562      | 130-4562      | \$63.64    |
| 37/64"     | 1-1/4"       | 3-1/2"      | 130-2578      | 130-3578      | 130-4578      | \$76.52    |
| 19/32"     | 1-1/4"       | 3-1/2"      | 130-2593      | 130-3593      | 130-4593      | \$75.16    |
| 39/64"     | 1-1/4"       | 3-1/2"      | 130-2609      | 130-3609      | 130-4609      | \$73.74    |
| 5/8"       | 1-1/4"       | 3-1/2"      | 130-2625      | 130-3625      | 130-4625      | \$65.64    |
| 41/64"     | 1-1/2"       | 4"          | 130-2640      | 130-3640      | 130-4640      | \$101.04   |
| 21/32"     | 1-1/2"       | 4"          | 130-2656      | 130-3656      | 130-4656      | \$99.40    |
| 43/64"     | 1-1/2"       | 4"          | 130-2671      | 130-3671      | 130-4671      | \$99.20    |
| 11/16"     | 1-1/2"       | 4"          | 130-2687      | 130-3687      | 130-4687      | \$96.80    |
| 45/64"     | 1-1/2"       | 4"          | 130-2703      | 130-3703      | 130-4703      | \$98.10    |
| 23/32"     | 1-1/2"       | 4"          | 130-2718      | 130-3718      | 130-4718      | \$97.40    |
| 47/64"     | 1-1/2"       | 4"          | 130-2734      | 130-3734      | 130-4737      | \$97.14    |
| 3/4"       | 1-1/2"       | 4"          | 130-2750      | 130-3750      | 130-4750      | \$87.72    |

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 3 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|---------------|------------|
| 49/64"     | 1-1/2"       | 4"          | 130-2765      | 130-3765      | 130-4765      | \$180.40   |
| 25/32"     | 1-1/2"       | 4"          | 130-2781      | 130-3781      | 130-4781      | \$179.64   |
| 51/64"     | 1-1/2"       | 4"          | 130-2796      | 130-3796      | 130-4796      | \$178.86   |
| 13/16"     | 1-1/2"       | 4"          | 130-2812      | 130-3812      | 130-4812      | \$176.00   |
| 53/64"     | 1-1/2"       | 4"          | 130-2828      | 130-3828      | 130-4828      | \$177.10   |
| 27/32"     | 1-1/2"       | 4"          | 130-2843      | 130-3843      | 130-4843      | \$176.56   |
| 55/64"     | 1-1/2"       | 4"          | 130-2859      | 130-3859      | 130-4859      | \$176.00   |
| 7/8"       | 1-1/2"       | 4"          | 130-2875      | 130-3875      | 130-4875      | \$155.26   |
| 57/64"     | 1-1/2"       | 4"          | 130-2890      | 130-3890      | 130-4890      | \$181.96   |
| 29/32"     | 1-1/2"       | 4"          | 130-2906      | 130-3906      | 130-4906      | \$180.90   |
| 59/64"     | 1-1/2"       | 4"          | 130-2921      | 130-3921      | 130-4921      | \$179.86   |
| 15/16"     | 1-1/2"       | 4"          | 130-2937      | 130-3937      | 130-4937      | \$176.00   |
| 61/64"     | 1-1/2"       | 4"          | 130-2953      | 130-3953      | 130-4953      | \$174.90   |
| 31/32"     | 1-1/2"       | 4"          | 130-2968      | 130-3968      | 130-4968      | \$173.78   |
| 63/64"     | 1-1/2"       | 4"          | 130-2984      | 130-3984      | 130-4984      | \$173.60   |
| 1"         | 1-1/2"       | 4"          | 130-2100      | 130-3100      | 130-4100      | \$157.26   |

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**Series 135*****Metalloy*****HTC** **SOLID CARBIDE END MILLS****STANDARD LENGTH****SINGLE END BALL****2-4 FLUTE****UNCOATED**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/64"      | 1/16"        | 1-1/2"      | 135-2015      | 135-4015      | \$10.40    |
| 1/32"      | 3/32"        | 1-1/2"      | 135-2031      | 135-4031      | \$9.00     |
| 3/64"      | 1/8"         | 1-1/2"      | 135-2046      | 135-4046      | \$9.00     |
| 1/16"      | 3/16"        | 1-1/2"      | 135-2062      | 135-4062      | \$8.00     |
| 5/64"      | 1/4"         | 1-1/2"      | 135-2078      | 135-4078      | \$8.00     |
| 3/32"      | 3/8"         | 1-1/2"      | 135-2093      | 135-4093      | \$8.00     |
| 7/64"      | 3/8"         | 1-1/2"      | 135-2109      | 135-4109      | \$8.00     |
| 1/8"       | 1/2"         | 1-1/2"      | 135-2125      | 135-4125      | \$6.40     |
| 9/64"      | 9/16"        | 2"          | 135-2140      | 135-4140      | \$11.00    |
| 5/32"      | 9/16"        | 2"          | 135-2156      | 135-4156      | \$10.60    |
| 11/64"     | 9/16"        | 2"          | 135-2171      | 135-4171      | \$11.00    |
| 3/16"      | 5/8"         | 2"          | 135-2187      | 135-4187      | \$10.60    |
| 13/64"     | 5/8"         | 2-1/2"      | 135-2203      | 135-4203      | \$13.90    |
| 7/32"      | 5/8"         | 2-1/2"      | 135-2218      | 135-4218      | \$13.00    |
| 15/64"     | 3/4"         | 2-1/2"      | 135-2234      | 135-4234      | \$13.90    |
| 1/4"       | 3/4"         | 2-1/2"      | 135-2250      | 135-4250      | \$12.20    |

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 17/64"     | 7/8"         | 2-1/2"      | 135-2265      | 135-4265      | \$18.20    |
| 9/32"      | 7/8"         | 2-1/2"      | 135-2281      | 135-4281      | \$17.00    |
| 19/64"     | 7/8"         | 2-1/2"      | 135-2296      | 135-4296      | \$18.20    |
| 5/16"      | 7/8"         | 2-1/2"      | 135-2312      | 135-4312      | \$15.60    |
| 21/64"     | 7/8"         | 2-1/2"      | 135-2328      | 135-4328      | \$20.50    |
| 11/32"     | 7/8"         | 2-1/2"      | 135-2343      | 135-4343      | \$19.00    |
| 23/64"     | 7/8"         | 2-1/2"      | 135-2359      | 135-4359      | \$20.50    |
| 3/8"       | 7/8"         | 2-1/2"      | 135-2375      | 135-4375      | \$19.00    |
| 25/64"     | 7/8"         | 2-1/2"      | 135-2390      | 135-4390      | \$31.60    |
| 13/32"     | 7/8"         | 2-1/2"      | 135-2406      | 135-4406      | \$31.00    |
| 27/64"     | 7/8"         | 2-1/2"      | 135-2421      | 135-4421      | \$30.80    |
| 7/16"      | 1"           | 2-1/2"      | 135-2437      | 135-4437      | \$30.00    |
| 29/64"     | 1"           | 3"          | 135-2453      | 135-4453      | \$34.20    |
| 15/32"     | 1"           | 3"          | 135-2468      | 135-4468      | \$33.90    |
| 31/64"     | 1"           | 3"          | 135-2484      | 135-4484      | \$33.60    |
| 1/2"       | 1"           | 3"          | 135-2500      | 135-4500      | \$32.00    |

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## SOLID CARBIDE END MILLS

### STANDARD LENGTH

#### SINGLE END BALL

#### 2-4 FLUTE

### UNCOATED



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 33/64"     | 1-1/4"       | 3-1/2"      | 135-2515      | 135-4515      | \$74.00    |
| 17/32"     | 1-1/4"       | 3-1/2"      | 135-2531      | 135-4531      | \$70.00    |
| 35/64"     | 1-1/4"       | 3-1/2"      | 135-2546      | 135-4546      | \$68.00    |
| 9/16"      | 1-1/4"       | 3-1/2"      | 135-2562      | 135-4562      | \$61.00    |
| 37/64"     | 1-1/4"       | 3-1/2"      | 135-2578      | 135-4578      | \$75.00    |
| 19/32"     | 1-1/4"       | 3-1/2"      | 135-2593      | 135-4593      | \$71.00    |
| 39/64"     | 1-1/4"       | 3-1/2"      | 135-2609      | 135-4609      | \$69.00    |
| 5/8"       | 1-1/4"       | 3-1/2"      | 135-2625      | 135-4625      | \$61.00    |
| 41/64"     | 1-1/2"       | 4"          | 135-2640      | 135-4640      | \$103.00   |
| 21/32"     | 1-1/2"       | 4"          | 135-2656      | 135-4656      | \$103.00   |
| 43/64"     | 1-1/2"       | 4"          | 135-2671      | 135-4671      | \$102.00   |
| 11/16"     | 1-1/2"       | 4"          | 135-2687      | 135-4687      | \$96.00    |
| 45/64"     | 1-1/2"       | 4"          | 135-2703      | 135-4703      | \$94.00    |
| 23/32"     | 1-1/2"       | 4"          | 135-2718      | 135-4718      | \$94.00    |
| 47/64"     | 1-1/2"       | 4"          | 135-2734      | 135-4737      | \$94.00    |
| 3/4"       | 1-1/2"       | 4"          | 135-2750      | 135-4750      | \$84.00    |

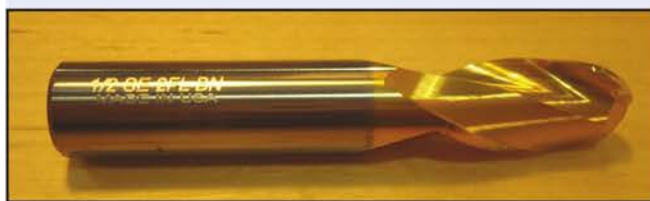
| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 49/64"     | 1-1/2"       | 4"          | 135-2765      | 135-4765      | \$185.90   |
| 25/32"     | 1-1/2"       | 4"          | 135-2781      | 135-4781      | \$185.90   |
| 51/64"     | 1-1/2"       | 4"          | 135-2796      | 135-4796      | \$185.90   |
| 13/16"     | 1-1/2"       | 4"          | 135-2812      | 135-4812      | \$185.90   |
| 53/64"     | 1-1/2"       | 4"          | 135-2828      | 135-4828      | \$180.60   |
| 27/32"     | 1-1/2"       | 4"          | 135-2843      | 135-4843      | \$180.60   |
| 55/64"     | 1-1/2"       | 4"          | 135-2859      | 135-4859      | \$180.60   |
| 7/8"       | 1-1/2"       | 4"          | 135-2875      | 135-4875      | \$164.00   |
| 57/64"     | 1-1/2"       | 4"          | 135-2890      | 135-4890      | \$189.70   |
| 29/32"     | 1-1/2"       | 4"          | 135-2906      | 135-4906      | \$189.70   |
| 59/64"     | 1-1/2"       | 4"          | 135-2921      | 135-4921      | \$189.70   |
| 15/16"     | 1-1/2"       | 4"          | 135-2937      | 135-4937      | \$182.50   |
| 61/64"     | 1-1/2"       | 4"          | 135-2953      | 135-4953      | \$182.50   |
| 31/32"     | 1-1/2"       | 4"          | 135-2968      | 135-4968      | \$182.50   |
| 63/64"     | 1-1/2"       | 4"          | 135-2984      | 135-4984      | \$182.50   |
| 1"         | 1-1/2"       | 4"          | 135-2100      | 135-4100      | \$166.00   |

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**Series 140****Metalloy****HTC** **SOLID CARBIDE END MILLS****STANDARD LENGTH****SINGLE END SQUARE****2-4 FLUTE****TIN COATED**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/64"      | 1/16"        | 1-1/2"      | 140-2015      | 140-4015      | \$11.20    |
| 1/32"      | 3/32"        | 1-1/2"      | 140-2031      | 140-4031      | \$9.90     |
| 3/64"      | 1/8"         | 1-1/2"      | 140-2046      | 140-4046      | \$9.90     |
| 1/16"      | 3/16"        | 1-1/2"      | 140-2062      | 140-4062      | \$9.30     |
| 5/64"      | 1/4"         | 1-1/2"      | 140-2078      | 140-4078      | \$9.10     |
| 3/32"      | 3/8"         | 1-1/2"      | 140-2093      | 140-4093      | \$9.30     |
| 7/64"      | 3/8"         | 1-1/2"      | 140-2109      | 140-4109      | \$8.80     |
| 1/8"       | 1/2"         | 1-1/2"      | 140-2125      | 140-4125      | \$8.70     |
| 9/64"      | 9/16"        | 2"          | 140-2140      | 140-4140      | \$13.68    |
| 5/32"      | 9/16"        | 2"          | 140-2156      | 140-4156      | \$12.20    |
| 11/64"     | 9/16"        | 2"          | 140-2171      | 140-4171      | \$13.04    |
| 3/16"      | 5/8"         | 2"          | 140-2187      | 140-4187      | \$12.00    |
| 13/64"     | 5/8"         | 2-1/2"      | 140-2203      | 140-4203      | \$16.42    |
| 7/32"      | 5/8"         | 2-1/2"      | 140-2218      | 140-4218      | \$15.50    |
| 15/64"     | 3/4"         | 2-1/2"      | 140-2234      | 140-4234      | \$16.30    |
| 1/4"       | 3/4"         | 2-1/2"      | 140-2250      | 140-4250      | \$14.50    |

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 17/64"     | 7/8"         | 2-1/2"      | 140-2265      | 140-4265      | \$19.70    |
| 9/32"      | 7/8"         | 2-1/2"      | 140-2281      | 140-4281      | \$18.50    |
| 19/64"     | 7/8"         | 2-1/2"      | 140-2296      | 140-4296      | \$18.46    |
| 5/16"      | 7/8"         | 2-1/2"      | 140-2312      | 140-4312      | \$18.00    |
| 21/64"     | 7/8"         | 2-1/2"      | 140-2328      | 140-4328      | \$22.54    |
| 11/32"     | 7/8"         | 2-1/2"      | 140-2343      | 140-4343      | \$22.00    |
| 23/64"     | 7/8"         | 2-1/2"      | 140-2359      | 140-4359      | \$22.48    |
| 3/8"       | 7/8"         | 2-1/2"      | 140-2375      | 140-4375      | \$22.00    |
| 25/64"     | 7/8"         | 2-1/2"      | 140-2390      | 140-4390      | \$37.50    |
| 13/32"     | 7/8"         | 2-1/2"      | 140-2406      | 140-4406      | \$37.00    |
| 27/64"     | 7/8"         | 2-1/2"      | 140-2421      | 140-4421      | \$36.50    |
| 7/16"      | 1"           | 2-1/2"      | 140-2437      | 140-4437      | \$37.10    |
| 29/64"     | 1"           | 3"          | 140-2453      | 140-4453      | \$40.68    |
| 15/32"     | 1"           | 3"          | 140-2468      | 140-4468      | \$40.58    |
| 31/64"     | 1"           | 3"          | 140-2484      | 140-4484      | \$39.96    |
| 1/2"       | 1"           | 3"          | 140-2500      | 140-4500      | \$38.00    |

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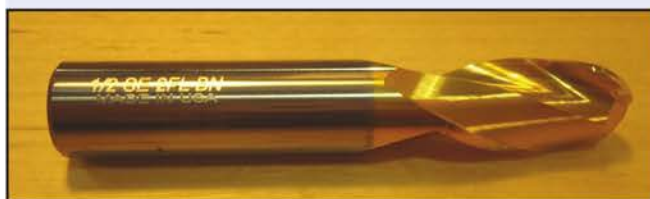
## SOLID CARBIDE END MILLS

### STANDARD LENGTH

SINGLE END BALL

2-4 FLUTE

### TIN COATED



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 33/64"     | 1-1/4"       | 3-1/2"      | 140-2515      | 140-4515      | \$81.96    |
| 17/32"     | 1-1/4"       | 3-1/2"      | 140-2531      | 140-4531      | \$81.40    |
| 35/64"     | 1-1/4"       | 3-1/2"      | 140-2546      | 140-4546      | \$79.54    |
| 9/16"      | 1-1/4"       | 3-1/2"      | 140-2562      | 140-4562      | \$68.40    |
| 37/64"     | 1-1/4"       | 3-1/2"      | 140-2578      | 140-4578      | \$81.86    |
| 19/32"     | 1-1/4"       | 3-1/2"      | 140-2593      | 140-4593      | \$81.54    |
| 39/64"     | 1-1/4"       | 3-1/2"      | 140-2609      | 140-4609      | \$79.56    |
| 5/8"       | 1-1/4"       | 3-1/2"      | 140-2625      | 140-4625      | \$68.30    |
| 41/64"     | 1-1/2"       | 4"          | 140-2640      | 140-4640      | \$119.00   |
| 21/32"     | 1-1/2"       | 4"          | 140-2656      | 140-4656      | \$118.26   |
| 43/64"     | 1-1/2"       | 4"          | 140-2671      | 140-4671      | \$117.04   |
| 11/16"     | 1-1/2"       | 4"          | 140-2687      | 140-4687      | \$113.86   |
| 45/64"     | 1-1/2"       | 4"          | 140-2703      | 140-4703      | \$114.26   |
| 23/32"     | 1-1/2"       | 4"          | 140-2718      | 140-4718      | \$113.36   |
| 47/64"     | 1-1/2"       | 4"          | 140-2734      | 140-4737      | \$112.28   |
| 3/4"       | 1-1/2"       | 4"          | 140-2750      | 140-4750      | \$98.40    |

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 49/64"     | 1-1/2"       | 4"          | 140-2765      | 140-4765      | \$196.60   |
| 25/32"     | 1-1/2"       | 4"          | 140-2781      | 140-4781      | \$196.36   |
| 51/64"     | 1-1/2"       | 4"          | 140-2796      | 140-4796      | \$195.80   |
| 13/16"     | 1-1/2"       | 4"          | 140-2812      | 140-4812      | \$194.26   |
| 53/64"     | 1-1/2"       | 4"          | 140-2828      | 140-4828      | \$195.00   |
| 27/32"     | 1-1/2"       | 4"          | 140-2843      | 140-4843      | \$194.76   |
| 55/64"     | 1-1/2"       | 4"          | 140-2859      | 140-4859      | \$194.50   |
| 7/8"       | 1-1/2"       | 4"          | 140-2875      | 140-4875      | \$176.60   |
| 57/64"     | 1-1/2"       | 4"          | 140-2890      | 140-4890      | \$206.80   |
| 29/32"     | 1-1/2"       | 4"          | 140-2906      | 140-4906      | \$204.60   |
| 59/64"     | 1-1/2"       | 4"          | 140-2921      | 140-4921      | \$202.40   |
| 15/16"     | 1-1/2"       | 4"          | 140-2937      | 140-4937      | \$198.00   |
| 61/64"     | 1-1/2"       | 4"          | 140-2953      | 140-4953      | \$201.30   |
| 31/32"     | 1-1/2"       | 4"          | 140-2968      | 140-4968      | \$198.96   |
| 63/64"     | 1-1/2"       | 4"          | 140-2984      | 140-4984      | \$198.22   |
| 1"         | 1-1/2"       | 4"          | 140-2100      | 140-4100      | \$179.40   |

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**Series 143**

# Metalloy

**HTC** 

## SOLID CARBIDE END MILLS

### STANDARD LENGTH

SINGLE END BALL

2-3-4 FLUTE

### TICN COAT - HTC PROGRESSIVE COAT



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/64"      | 1/16"        | 1-1/2"      | 143-2015      | 143-4015      | \$11.54    |
| 1/32"      | 3/32"        | 1-1/2"      | 143-2031      | 143-4031      | \$10.46    |
| 3/64"      | 1/8"         | 1-1/2"      | 143-2046      | 143-4046      | \$10.46    |
| 1/16"      | 3/16"        | 1-1/2"      | 143-2062      | 143-4062      | \$9.49     |
| 5/64"      | 1/4"         | 1-1/2"      | 143-2078      | 143-4078      | \$8.85     |
| 3/32"      | 3/8"         | 1-1/2"      | 143-2093      | 143-4093      | \$9.49     |
| 7/64"      | 3/8"         | 1-1/2"      | 143-2109      | 143-4109      | \$8.15     |
| 1/8"       | 1/2"         | 1-1/2"      | 143-2125      | 143-4125      | \$7.93     |
| 9/64"      | 9/16"        | 2"          | 143-2140      | 143-4140      | \$14.05    |
| 5/32"      | 9/16"        | 2"          | 143-2156      | 143-4156      | \$12.80    |
| 11/64"     | 9/16"        | 2"          | 143-2171      | 143-4171      | \$13.75    |
| 3/16"      | 5/8"         | 2"          | 143-2187      | 143-4187      | \$12.80    |
| 13/64"     | 5/8"         | 2-1/2"      | 143-2203      | 143-4203      | \$18.35    |
| 7/32"      | 5/8"         | 2-1/2"      | 143-2218      | 143-4218      | \$17.13    |
| 15/64"     | 3/4"         | 2-1/2"      | 143-2234      | 143-4234      | \$18.29    |
| 1/4"       | 3/4"         | 2-1/2"      | 143-2250      | 143-4250      | \$16.35    |

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 17/64"     | 7/8"         | 2-1/2"      | 143-2265      | 143-4265      | \$23.14    |
| 9/32"      | 7/8"         | 2-1/2"      | 143-2281      | 143-4281      | \$21.88    |
| 19/64"     | 7/8"         | 2-1/2"      | 143-2296      | 143-4296      | \$22.33    |
| 5/16"      | 7/8"         | 2-1/2"      | 143-2312      | 143-4312      | \$21.50    |
| 21/64"     | 7/8"         | 2-1/2"      | 143-2328      | 143-4328      | \$27.12    |
| 11/32"     | 7/8"         | 2-1/2"      | 143-2343      | 143-4343      | \$24.79    |
| 23/64"     | 7/8"         | 2-1/2"      | 143-2359      | 143-4359      | \$25.39    |
| 3/8"       | 7/8"         | 2-1/2"      | 143-2375      | 143-4375      | \$24.79    |
| 25/64"     | 7/8"         | 2-1/2"      | 143-2390      | 143-4390      | \$40.22    |
| 13/32"     | 7/8"         | 2-1/2"      | 143-2406      | 143-4406      | \$38.49    |
| 27/64"     | 7/8"         | 2-1/2"      | 143-2421      | 143-4421      | \$37.60    |
| 7/16"      | 1"           | 2-1/2"      | 143-2437      | 143-4437      | \$38.20    |
| 29/64"     | 1"           | 3"          | 143-2453      | 143-4453      | \$44.62    |
| 15/32"     | 1"           | 3"          | 143-2468      | 143-4468      | \$42.68    |
| 31/64"     | 1"           | 3"          | 143-2484      | 143-4484      | \$41.71    |
| 1/2"       | 1"           | 3"          | 143-2500      | 143-4500      | \$40.14    |

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## SOLID CARBIDE END MILLS

### STANDARD LENGTH

SINGLE END BALL

2-4 FLUTE

TICN COAT - HTC PROGRESSIVE COAT



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 33/64"     | 1-1/4"       | 3-1/2"      | 143-2515      | 143-4515      | \$89.65    |
| 17/32"     | 1-1/4"       | 3-1/2"      | 143-2531      | 143-4531      | \$88.41    |
| 35/64"     | 1-1/4"       | 3-1/2"      | 143-2546      | 143-4546      | \$84.99    |
| 9/16"      | 1-1/4"       | 3-1/2"      | 143-2562      | 143-4562      | \$73.37    |
| 37/64"     | 1-1/4"       | 3-1/2"      | 143-2578      | 143-4578      | \$84.25    |
| 19/32"     | 1-1/4"       | 3-1/2"      | 143-2593      | 143-4593      | \$83.59    |
| 39/64"     | 1-1/4"       | 3-1/2"      | 143-2609      | 143-4609      | \$83.09    |
| 5/8"       | 1-1/4"       | 3-1/2"      | 143-2625      | 143-4625      | \$73.37    |
| 41/64"     | 1-1/2"       | 4"          | 143-2640      | 143-4640      | \$111.80   |
| 21/32"     | 1-1/2"       | 4"          | 143-2656      | 143-4656      | \$110.32   |
| 43/64"     | 1-1/2"       | 4"          | 143-2671      | 143-4671      | \$108.83   |
| 11/16"     | 1-1/2"       | 4"          | 143-2687      | 143-4687      | \$107.77   |
| 45/64"     | 1-1/2"       | 4"          | 143-2703      | 143-4703      | \$109.30   |
| 23/32"     | 1-1/2"       | 4"          | 143-2718      | 143-4718      | \$108.89   |
| 47/64"     | 1-1/2"       | 4"          | 143-2734      | 143-4737      | \$108.37   |
| 3/4"       | 1-1/2"       | 4"          | 143-2750      | 143-4750      | \$97.70    |

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 49/64"     | 1-1/2"       | 4"          | 143-2765      | 143-4765      | \$210.01   |
| 25/32"     | 1-1/2"       | 4"          | 143-2781      | 143-4781      | \$209.56   |
| 51/64"     | 1-1/2"       | 4"          | 143-2796      | 143-4796      | \$209.13   |
| 13/16"     | 1-1/2"       | 4"          | 143-2812      | 143-4812      | \$207.00   |
| 53/64"     | 1-1/2"       | 4"          | 143-2828      | 143-4828      | \$207.97   |
| 27/32"     | 1-1/2"       | 4"          | 143-2843      | 143-4843      | \$207.54   |
| 55/64"     | 1-1/2"       | 4"          | 143-2859      | 143-4859      | \$207.00   |
| 7/8"       | 1-1/2"       | 4"          | 143-2875      | 143-4875      | \$187.46   |
| 57/64"     | 1-1/2"       | 4"          | 143-2890      | 143-4890      | \$219.80   |
| 29/32"     | 1-1/2"       | 4"          | 143-2906      | 143-4906      | \$216.60   |
| 59/64"     | 1-1/2"       | 4"          | 143-2921      | 143-4921      | \$213.40   |
| 15/16"     | 1-1/2"       | 4"          | 143-2937      | 143-4937      | \$209.13   |
| 61/64"     | 1-1/2"       | 4"          | 143-2953      | 143-4953      | \$210.22   |
| 31/32"     | 1-1/2"       | 4"          | 143-2968      | 143-4968      | \$209.61   |
| 63/64"     | 1-1/2"       | 4"          | 143-2984      | 143-4984      | \$209.13   |
| 1"         | 1-1/2"       | 4"          | 143-2100      | 143-4100      | \$189.40   |

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**Series 145*****Metalloy*****HTC** **SOLID CARBIDE END MILLS****STANDARD LENGTH****SINGLE END BALL****2-4 FLUTE****ALTIN COATED - **HTC** HARD COAT**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/64"      | 1/16"        | 1-1/2"      | 145-2015      | 145-4015      | \$11.90    |
| 1/32"      | 3/32"        | 1-1/2"      | 145-2031      | 145-4031      | \$10.78    |
| 3/64"      | 1/8"         | 1-1/2"      | 145-2046      | 145-4046      | \$10.78    |
| 1/16"      | 3/16"        | 1-1/2"      | 145-2062      | 145-4062      | \$9.78     |
| 5/64"      | 1/4"         | 1-1/2"      | 145-2078      | 145-4078      | \$9.12     |
| 3/32"      | 3/8"         | 1-1/2"      | 145-2093      | 145-4093      | \$9.78     |
| 7/64"      | 3/8"         | 1-1/2"      | 145-2109      | 145-4109      | \$8.40     |
| 1/8"       | 1/2"         | 1-1/2"      | 145-2125      | 145-4125      | \$8.18     |
| 9/64"      | 9/16"        | 2"          | 145-2140      | 145-4140      | \$14.48    |
| 5/32"      | 9/16"        | 2"          | 145-2156      | 145-4156      | \$13.20    |
| 11/64"     | 9/16"        | 2"          | 145-2171      | 145-4171      | \$14.18    |
| 3/16"      | 5/8"         | 2"          | 145-2187      | 145-4187      | \$13.20    |
| 13/64"     | 5/8"         | 2-1/2"      | 145-2203      | 145-4203      | \$18.92    |
| 7/32"      | 5/8"         | 2-1/2"      | 145-2218      | 145-4218      | \$17.66    |
| 15/64"     | 3/4"         | 2-1/2"      | 145-2234      | 145-4234      | \$18.36    |
| 1/4"       | 3/4"         | 2-1/2"      | 145-2250      | 145-4250      | \$16.86    |

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 17/64"     | 7/8"         | 2-1/2"      | 145-2265      | 145-4265      | \$23.86    |
| 9/32"      | 7/8"         | 2-1/2"      | 145-2281      | 145-4281      | \$22.56    |
| 19/64"     | 7/8"         | 2-1/2"      | 145-2296      | 145-4296      | \$23.02    |
| 5/16"      | 7/8"         | 2-1/2"      | 145-2312      | 145-4312      | \$22.16    |
| 21/64"     | 7/8"         | 2-1/2"      | 145-2328      | 145-4328      | \$27.96    |
| 11/32"     | 7/8"         | 2-1/2"      | 145-2343      | 145-4343      | \$25.56    |
| 23/64"     | 7/8"         | 2-1/2"      | 145-2359      | 145-4359      | \$26.18    |
| 3/8"       | 7/8"         | 2-1/2"      | 145-2375      | 145-4375      | \$25.56    |
| 25/64"     | 7/8"         | 2-1/2"      | 145-2390      | 145-4390      | \$41.46    |
| 13/32"     | 7/8"         | 2-1/2"      | 145-2406      | 145-4406      | \$39.68    |
| 27/64"     | 7/8"         | 2-1/2"      | 145-2421      | 145-4421      | \$38.76    |
| 7/16"      | 1"           | 2-1/2"      | 145-2437      | 145-4437      | \$39.38    |
| 29/64"     | 1"           | 3"          | 145-2453      | 145-4453      | \$46.00    |
| 15/32"     | 1"           | 3"          | 145-2468      | 145-4468      | \$44.00    |
| 31/64"     | 1"           | 3"          | 145-2484      | 145-4484      | \$43.00    |
| 1/2"       | 1"           | 3"          | 145-2500      | 145-4500      | \$41.38    |

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## SOLID CARBIDE END MILLS

### STANDARD LENGTH

SINGLE END BALL

2-4 FLUTE

ALTIN COATED - **HTC** HARD COAT



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 33/64"     | 1-1/4"       | 3-1/2"      | 145-2515      | 145-4515      | \$92.42    |
| 17/32"     | 1-1/4"       | 3-1/2"      | 145-2531      | 145-4531      | \$91.14    |
| 35/64"     | 1-1/4"       | 3-1/2"      | 145-2546      | 145-4546      | \$87.62    |
| 9/16"      | 1-1/4"       | 3-1/2"      | 145-2562      | 145-4562      | \$75.64    |
| 37/64"     | 1-1/4"       | 3-1/2"      | 145-2578      | 145-4578      | \$86.86    |
| 19/32"     | 1-1/4"       | 3-1/2"      | 145-2593      | 145-4593      | \$86.18    |
| 39/64"     | 1-1/4"       | 3-1/2"      | 145-2609      | 145-4609      | \$85.66    |
| 5/8"       | 1-1/4"       | 3-1/2"      | 145-2625      | 145-4625      | \$75.64    |
| 41/64"     | 1-1/2"       | 4"          | 145-2640      | 145-4640      | \$115.26   |
| 21/32"     | 1-1/2"       | 4"          | 145-2656      | 145-4656      | \$113.74   |
| 43/64"     | 1-1/2"       | 4"          | 145-2671      | 145-4671      | \$112.20   |
| 11/16"     | 1-1/2"       | 4"          | 145-2687      | 145-4687      | \$111.10   |
| 45/64"     | 1-1/2"       | 4"          | 145-2703      | 145-4703      | \$112.68   |
| 23/32"     | 1-1/2"       | 4"          | 145-2718      | 145-4718      | \$112.26   |
| 47/64"     | 1-1/2"       | 4"          | 145-2734      | 145-4737      | \$111.72   |
| 3/4"       | 1-1/2"       | 4"          | 145-2750      | 145-4750      | \$100.72   |

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 49/64"     | 1-1/2"       | 4"          | 145-2765      | 145-4765      | \$216.50   |
| 25/32"     | 1-1/2"       | 4"          | 145-2781      | 145-4781      | \$216.04   |
| 51/64"     | 1-1/2"       | 4"          | 145-2796      | 145-4796      | \$215.60   |
| 13/16"     | 1-1/2"       | 4"          | 145-2812      | 145-4812      | \$213.40   |
| 53/64"     | 1-1/2"       | 4"          | 145-2828      | 145-4828      | \$214.40   |
| 27/32"     | 1-1/2"       | 4"          | 145-2843      | 145-4843      | \$213.96   |
| 55/64"     | 1-1/2"       | 4"          | 145-2859      | 145-4859      | \$213.40   |
| 7/8"       | 1-1/2"       | 4"          | 145-2875      | 145-4875      | \$193.26   |
| 57/64"     | 1-1/2"       | 4"          | 145-2890      | 145-4890      | \$226.60   |
| 29/32"     | 1-1/2"       | 4"          | 145-2906      | 145-4906      | \$223.90   |
| 59/64"     | 1-1/2"       | 4"          | 145-2921      | 145-4921      | \$220.00   |
| 15/16"     | 1-1/2"       | 4"          | 145-2937      | 145-4937      | \$215.60   |
| 61/64"     | 1-1/2"       | 4"          | 145-2953      | 145-4953      | \$216.72   |
| 31/32"     | 1-1/2"       | 4"          | 145-2968      | 145-4968      | \$216.10   |
| 63/64"     | 1-1/2"       | 4"          | 145-2984      | 145-4984      | \$215.60   |
| 1"         | 1-1/2"       | 4"          | 145-2100      | 145-4100      | \$195.26   |

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## Series 150

Metalloy



## SOLID CARBIDE END MILLS

LONG LENGTH / SINGLE END SQUARE / 2-4 FLUTE / UNCOATED

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/8"       | 3/4"         | 2-1/2"      | 150-2125      | 150-4125      | \$8.30     |
| 3/16"      | 3/4"         | 2-1/2"      | 150-2187      | 150-4187      | \$12.12    |
| 1/4"       | 1-1/8"       | 3"          | 150-2250      | 150-4250      | \$14.50    |
| 5/16"      | 1-1/8"       | 3"          | 150-2312      | 150-4312      | \$18.00    |
| 3/8"       | 1-1/8"       | 3"          | 150-2375      | 150-4375      | \$25.00    |
| 7/16"      | 2"           | 4"          | 150-2437      | 150-4437      | \$39.64    |
| 1/2"       | 1-1/2"       | 4"          | 150-2504      | 150-4504      | \$40.30    |
| 1/2"       | 2"           | 4"          | 150-2500      | 150-4500      | \$42.84    |
| 5/8"       | 2-1/4"       | 5"          | 150-2625      | 150-4625      | \$78.00    |
| 3/4"       | 2-1/4"       | 5"          | 150-2750      | 150-4750      | \$110.00   |
| 1"         | 2-1/4"       | 5"          | 150-2100      | 150-4100      | \$170.00   |



## Series 155

## SOLID CARBIDE END MILLS

LONG LENGTH / SINGLE END BALL / 2-4 FLUTE / UNCOATED

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/8"       | 3/4"         | 2-1/2"      | 155-2125      | 155-4125      | \$13.60    |
| 3/16"      | 3/4"         | 2-1/2"      | 155-2187      | 155-4187      | \$16.24    |
| 1/4"       | 1-1/8"       | 3"          | 155-2250      | 155-4250      | \$21.06    |
| 5/16"      | 1-1/8"       | 3"          | 155-2312      | 155-4312      | \$25.50    |
| 3/8"       | 1-1/8"       | 3"          | 155-2375      | 155-4375      | \$33.00    |
| 7/16"      | 2"           | 4"          | 155-2437      | 155-4437      | \$48.17    |
| 1/2"       | 1-1/2"       | 4"          | 155-2504      | 155-4504      | \$50.36    |
| 1/2"       | 2"           | 4"          | 155-2500      | 155-4500      | \$52.74    |
| 5/8"       | 2-1/4"       | 5"          | 155-2625      | 155-4625      | \$98.86    |
| 3/4"       | 2-1/4"       | 5"          | 155-2750      | 155-4750      | \$139.00   |
| 1"         | 2-1/4"       | 5"          | 155-2100      | 155-4100      | \$216.00   |


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## SOLID CARBIDE END MILLS

**LONG LENGTH** / SINGLE END SQUARE / 2-4 FLUTE / **TIN COATED**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/8"       | 3/4"         | 2-1/2"      | 152-2125      | 152-4125      | \$9.51     |
| 3/16"      | 3/4"         | 2-1/2"      | 152-2187      | 152-4187      | \$13.72    |
| 1/4"       | 1-1/8"       | 3"          | 152-2250      | 152-4250      | \$16.83    |
| 5/16"      | 1-1/8"       | 3"          | 152-2312      | 152-4312      | \$21.23    |
| 3/8"       | 1-1/8"       | 3"          | 152-2375      | 152-4375      | \$28.28    |
| 7/16"      | 2"           | 4"          | 152-2437      | 152-4437      | \$44.44    |
| 1/2"       | 1-1/2"       | 4"          | 152-2504      | 152-4504      | \$46.65    |
| 1/2"       | 2"           | 4"          | 152-2500      | 152-4500      | \$48.70    |
| 5/8"       | 2-1/4"       | 5"          | 152-2625      | 152-4625      | \$86.80    |
| 3/4"       | 2-1/4"       | 5"          | 152-2750      | 152-4750      | \$120.02   |
| 1"         | 2-1/4"       | 5"          | 152-2100      | 152-4100      | \$187.56   |



### Series 157

## SOLID CARBIDE END MILLS

**LONG LENGTH** / SINGLE END BALL / 2-4 FLUTE / **TIN COATED**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/8"       | 3/4"         | 2-1/2"      | 157-2125      | 157-4125      | \$14.81    |
| 3/16"      | 3/4"         | 2-1/2"      | 157-2187      | 157-4187      | \$17.84    |
| 1/4"       | 1-1/8"       | 3"          | 157-2250      | 157-4250      | \$23.21    |
| 5/16"      | 1-1/8"       | 3"          | 157-2312      | 157-4312      | \$28.73    |
| 3/8"       | 1-1/8"       | 3"          | 157-2375      | 157-4375      | \$36.28    |
| 7/16"      | 2"           | 4"          | 157-2437      | 157-4437      | \$52.26    |
| 1/2"       | 1-1/2"       | 4"          | 157-2504      | 157-4504      | \$60.54    |
| 1/2"       | 2"           | 4"          | 157-2500      | 157-4500      | \$58.60    |
| 5/8"       | 2-1/4"       | 5"          | 157-2625      | 157-4625      | \$107.66   |
| 3/4"       | 2-1/4"       | 5"          | 157-2750      | 157-4750      | \$149.02   |
| 1"         | 2-1/4"       | 5"          | 157-2100      | 157-4100      | \$233.56   |



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**Series 154*****Metalloy*****HTC** **SOLID CARBIDE END MILLS****LONG LENGTH / SINGLE END SQUARE / 2-4 FLUTE****TICN COAT - HTC PROGRESSIVE COAT**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/8"       | 3/4"         | 2-1/2"      | 154-2125      | 154-4125      | \$10.40    |
| 3/16"      | 3/4"         | 2-1/2"      | 154-2187      | 154-4187      | \$14.86    |
| 1/4"       | 1-1/8"       | 3"          | 154-2250      | 154-4250      | \$18.59    |
| 5/16"      | 1-1/8"       | 3"          | 154-2312      | 154-4312      | \$23.73    |
| 3/8"       | 1-1/8"       | 3"          | 154-2375      | 154-4375      | \$30.61    |
| 7/16"      | 2"           | 4"          | 154-2437      | 154-4437      | \$47.76    |
| 1/2"       | 1-1/2"       | 4"          | 154-2504      | 154-4504      | \$51.41    |
| 1/2"       | 2"           | 4"          | 154-2500      | 154-4500      | \$52.92    |
| 5/8"       | 2-1/4"       | 5"          | 154-2625      | 154-4625      | \$92.73    |
| 3/4"       | 2-1/4"       | 5"          | 154-2750      | 154-4750      | \$126.14   |
| 1"         | 2-1/4"       | 5"          | 154-2100      | 154-4100      | \$198.97   |

**Series 159****SOLID CARBIDE END MILLS****LONG LENGTH / SINGLE END BALL / 2-4 FLUTE****TICN COAT - HTC PROGRESSIVE COAT**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/8"       | 3/4"         | 2-1/2"      | 159-2125      | 159-4125      | \$15.54    |
| 3/16"      | 3/4"         | 2-1/2"      | 159-2187      | 159-4187      | \$18.86    |
| 1/4"       | 1-1/8"       | 3"          | 159-2250      | 159-4250      | \$24.60    |
| 5/16"      | 1-1/8"       | 3"          | 159-2312      | 159-4312      | \$31.00    |
| 3/8"       | 1-1/8"       | 3"          | 159-2375      | 159-4375      | \$38.37    |
| 7/16"      | 2"           | 4"          | 159-2437      | 159-4437      | \$54.65    |
| 1/2"       | 1-1/2"       | 4"          | 159-2504      | 159-4504      | \$58.72    |
| 1/2"       | 2"           | 4"          | 159-2500      | 159-4500      | \$62.53    |
| 5/8"       | 2-1/4"       | 5"          | 159-2625      | 159-4625      | \$112.97   |
| 3/4"       | 2-1/4"       | 5"          | 159-2750      | 159-4750      | \$154.27   |
| 1"         | 2-1/4"       | 5"          | 159-2100      | 159-4100      | \$243.59   |

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## SOLID CARBIDE END MILLS

**LONG LENGTH** / SINGLE END SQUARE / 2-4 FLUTE  
ALTIN COATED - **HTC** HARD COAT

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/8"       | 3/4"         | 2-1/2"      | 160-2125      | 160-4125      | \$10.72    |
| 3/16"      | 3/4"         | 2-1/2"      | 160-2187      | 160-4187      | \$15.32    |
| 1/4"       | 1-1/8"       | 3"          | 160-2250      | 160-4250      | \$19.16    |
| 5/16"      | 1-1/8"       | 3"          | 160-2312      | 160-4312      | \$24.46    |
| 3/8"       | 1-1/8"       | 3"          | 160-2375      | 160-4375      | \$31.56    |
| 7/16"      | 2"           | 4"          | 160-2437      | 160-4437      | \$49.24    |
| 1/2"       | 1-1/2"       | 4"          | 160-2504      | 160-4504      | \$53.00    |
| 1/2"       | 2"           | 4"          | 160-2500      | 160-4500      | \$54.56    |
| 5/8"       | 2-1/4"       | 5"          | 160-2625      | 160-4625      | \$95.60    |
| 3/4"       | 2-1/4"       | 5"          | 160-2750      | 160-4750      | \$130.04   |
| 1"         | 2-1/4"       | 5"          | 160-2100      | 160-4100      | \$205.12   |



### Series 166

## SOLID CARBIDE END MILLS

**LONG LENGTH** / SINGLE END BALL / 2-4 FLUTE  
ALTIN COATED - **HTC** HARD COAT

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/8"       | 3/4"         | 2-1/2"      | 165-2125      | 165-4125      | \$16.02    |
| 3/16"      | 3/4"         | 2-1/2"      | 165-2187      | 165-4187      | \$19.44    |
| 1/4"       | 1-1/8"       | 3"          | 165-2250      | 165-4250      | \$25.36    |
| 5/16"      | 1-1/8"       | 3"          | 165-2312      | 165-4312      | \$31.96    |
| 3/8"       | 1-1/8"       | 3"          | 165-2375      | 165-4375      | \$39.56    |
| 7/16"      | 2"           | 4"          | 165-2437      | 165-4437      | \$56.34    |
| 1/2"       | 1-1/2"       | 4"          | 165-2504      | 165-4504      | \$60.54    |
| 1/2"       | 2"           | 4"          | 165-2500      | 165-4500      | \$64.46    |
| 5/8"       | 2-1/4"       | 5"          | 165-2625      | 165-4625      | \$116.46   |
| 3/4"       | 2-1/4"       | 5"          | 165-2750      | 165-4750      | \$159.04   |
| 1"         | 2-1/4"       | 5"          | 165-2100      | 165-4100      | \$251.12   |



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**Series 170*****Metalloy*****HTC** **SOLID CARBIDE END MILLS****EXTRA LONG LENGTH****SINGLE END SQUARE / 2-4 FLUTE****UNCOATED**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/8"       | 1"           | 3"          | 170-2125      | 170-4145      | \$12.42    |
| 3/16"      | 1-1/8"       | 3"          | 170-2187      | 170-4187      | \$13.00    |
| 1/4"       | 1-1/2"       | 4"          | 170-2250      | 170-4250      | \$17.00    |
| 1/4"       | 1-1/2"       | 6"          | 170-2256      | 170-4256      | \$24.50    |
| 5/16"      | 1-5/8"       | 4"          | 170-2312      | 170-4312      | \$21.00    |
| 5/16"      | 1-1/2"       | 6"          | 170-2316      | 170-4316      | \$34.20    |
| 3/8"       | 1-3/4"       | 4"          | 170-2375      | 170-4375      | \$27.50    |
| 3/8"       | 1-1/2"       | 6"          | 170-2376      | 170-4376      | \$37.00    |
| 3/8"       | 3"           | 6"          | 170-2336      | 170-4336      | \$42.00    |
| 1/2"       | 3"           | 6"          | 170-2500      | 170-4500      | \$67.00    |
| 1/2"       | 1-1/2"       | 6"          | 170-2506      | 170-4506      | \$58.00    |
| 5/8"       | 3"           | 6"          | 170-2625      | 170-4625      | \$88.00    |
| 3/4"       | 3"           | 6"          | 170-2750      | 170-4750      | \$122.00   |
| 3/4"       | 4"           | 7"          | 170-2757      | 170-4757      | \$152.00   |
| 1"         | 3"           | 6"          | 170-2100      | 170-4100      | \$230.00   |
| 1"         | 4"           | 7"          | 170-2107      | 170-4107      | \$290.00   |

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## SOLID CARBIDE END MILLS

**EXTRA LONG LENGTH**  
**SINGLE END BALL / 2-4 FLUTE**  
**UNCOATED**



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/8"       | 1"           | 3"          | 170-2125      | 170-4145      | \$16.12    |
| 3/16"      | 1-1/8"       | 3"          | 170-2187      | 170-4187      | \$17.88    |
| 1/4"       | 1-1/2"       | 4"          | 170-2250      | 170-4250      | \$23.50    |
| 1/4"       | 1-1/2"       | 6"          | 170-2256      | 170-4256      | \$29.00    |
| 5/16"      | 1-5/8"       | 4"          | 170-2312      | 170-4312      | \$28.70    |
| 5/16"      | 1-1/2"       | 6"          | 170-2316      | 170-4316      | \$38.00    |
| 3/8"       | 1-3/4"       | 4"          | 170-2375      | 170-4375      | \$38.00    |
| 3/8"       | 1-1/2"       | 6"          | 170-2376      | 170-4376      | \$49.50    |
| 3/8"       | 3"           | 6"          | 170-2336      | 170-4336      | \$54.50    |
| 1/2"       | 3"           | 6"          | 170-2500      | 170-4500      | \$83.00    |
| 1/2"       | 1-1/2"       | 6"          | 170-2506      | 170-4506      | \$74.00    |
| 5/8"       | 3"           | 6"          | 170-2625      | 170-4625      | \$116.00   |
| 3/4"       | 3"           | 6"          | 170-2750      | 170-4750      | \$156.00   |
| 3/4"       | 4"           | 7"          | 170-2757      | 170-4757      | \$192.00   |
| 1"         | 3"           | 6"          | 170-2100      | 170-4100      | \$270.00   |
| 1"         | 4"           | 7"          | 170-2107      | 170-4107      | \$336.00   |

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**Series 172*****Metalloy***

# SOLID CARBIDE END MILLS

**EXTRA LONG LENGTH**

**SINGLE END SQUARE / 2-4 FLUTE**

**TIN COATED**



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/8"       | 1"           | 3"          | 172-2125      | 172-4145      | \$13.63    |
| 3/16"      | 1-1/8"       | 3"          | 172-2187      | 172-4187      | \$14.60    |
| 1/4"       | 1-1/2"       | 4"          | 172-2250      | 172-4250      | \$19.92    |
| 1/4"       | 1-1/2"       | 6"          | 172-2256      | 172-4256      | \$29.80    |
| 5/16"      | 1-5/8"       | 4"          | 172-2312      | 172-4312      | \$24.65    |
| 5/16"      | 1-1/2"       | 6"          | 172-2316      | 172-4316      | \$41.81    |
| 3/8"       | 1-3/4"       | 4"          | 172-2375      | 172-4375      | \$31.50    |
| 3/8"       | 1-1/2"       | 6"          | 172-2376      | 172-4376      | \$45.31    |
| 3/8"       | 3"           | 6"          | 172-2336      | 172-4336      | \$46.81    |
| 1/2"       | 3"           | 6"          | 172-2500      | 172-4500      | \$75.18    |
| 1/2"       | 1-1/2"       | 6"          | 172-2506      | 172-4506      | \$67.18    |
| 5/8"       | 3"           | 6"          | 172-2625      | 172-4625      | \$98.25    |
| 3/4"       | 3"           | 6"          | 172-2750      | 172-4750      | \$134.16   |
| 3/4"       | 4"           | 7"          | 172-2757      | 172-4757      | \$165.38   |
| 1"         | 3"           | 6"          | 172-2100      | 172-4100      | \$250.47   |
| 1"         | 4"           | 7"          | 172-2107      | 172-4107      | \$313.39   |

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## SOLID CARBIDE END MILLS

**EXTRA LONG LENGTH**  
**SINGLE END BALL / 2-4 FLUTE**  
**TIN COATED**



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/8"       | 1"           | 3"          | 177-2125      | 177-4145      | \$17.33    |
| 3/16"      | 1-1/8"       | 3"          | 177-2187      | 177-4187      | \$19.48    |
| 1/4"       | 1-1/2"       | 4"          | 177-2250      | 177-4250      | \$26.42    |
| 1/4"       | 1-1/2"       | 6"          | 177-2256      | 177-4256      | \$34.10    |
| 5/16"      | 1-5/8"       | 4"          | 177-2312      | 177-4312      | \$32.50    |
| 5/16"      | 1-1/2"       | 6"          | 177-2316      | 177-4316      | \$49.87    |
| 3/8"       | 1-3/4"       | 4"          | 177-2375      | 177-4375      | \$51.15    |
| 3/8"       | 1-1/2"       | 6"          | 177-2376      | 177-4376      | \$53.12    |
| 3/8"       | 3"           | 6"          | 177-2336      | 177-4336      | \$55.49    |
| 1/2"       | 3"           | 6"          | 177-2500      | 177-4500      | \$84.68    |
| 1/2"       | 1-1/2"       | 6"          | 177-2506      | 177-4506      | \$83.13    |
| 5/8"       | 3"           | 6"          | 177-2625      | 177-4625      | \$126.25   |
| 3/4"       | 3"           | 6"          | 177-2750      | 177-4750      | \$167.71   |
| 3/4"       | 4"           | 7"          | 177-2757      | 177-4757      | \$205.38   |
| 1"         | 3"           | 6"          | 177-2100      | 177-4100      | \$290.47   |
| 1"         | 4"           | 7"          | 177-2107      | 177-4107      | \$359.39   |

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**Series 174*****Metalloy*****HTC** **SOLID CARBIDE END MILLS****EXTRA LONG LENGTH****SINGLE END SQUARE / 2-4 FLUTE****TICN COAT-**HTC** PROGRESSIVE COAT**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/8"       | 1"           | 3"          | 174-2125      | 174-4145      | \$14.39    |
| 3/16"      | 1-1/8"       | 3"          | 174-2187      | 174-4187      | \$15.71    |
| 1/4"       | 1-1/2"       | 4"          | 174-2250      | 174-4250      | \$22.15    |
| 1/4"       | 1-1/2"       | 6"          | 174-2256      | 174-4256      | \$34.05    |
| 5/16"      | 1-5/8"       | 4"          | 174-2312      | 174-4312      | \$27.45    |
| 5/16"      | 1-1/2"       | 6"          | 174-2316      | 174-4316      | \$47.94    |
| 3/8"       | 1-3/4"       | 4"          | 174-2375      | 174-4375      | \$33.76    |
| 3/8"       | 1-1/2"       | 6"          | 174-2376      | 174-4376      | \$52.01    |
| 3/8"       | 3"           | 6"          | 174-2336      | 174-4336      | \$52.98    |
| 1/2"       | 3"           | 6"          | 174-2500      | 174-4500      | \$80.86    |
| 1/2"       | 1-1/2"       | 6"          | 174-2506      | 174-4506      | \$74.07    |
| 5/8"       | 3"           | 6"          | 174-2625      | 174-4625      | \$105.25   |
| 3/4"       | 3"           | 6"          | 174-2750      | 174-4750      | \$141.93   |
| 3/4"       | 4"           | 7"          | 174-2757      | 174-4757      | \$173.40   |
| 1"         | 3"           | 6"          | 174-2100      | 174-4100      | \$262.81   |
| 1"         | 4"           | 7"          | 174-2107      | 174-4107      | \$326.67   |

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## SOLID CARBIDE END MILLS

**EXTRA LONG LENGTH**  
**SINGLE END BALL / 2-4 FLUTE**  
**TICN COAT-**HTC** PROGRESSIVE COAT**



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/8"       | 1"           | 3"          | 179-2125      | 179-4145      | \$17.98    |
| 3/16"      | 1-1/8"       | 3"          | 179-2187      | 179-4187      | \$20.45    |
| 1/4"       | 1-1/2"       | 4"          | 179-2250      | 179-4250      | \$28.46    |
| 1/4"       | 1-1/2"       | 6"          | 179-2256      | 179-4256      | \$38.02    |
| 5/16"      | 1-5/8"       | 4"          | 179-2312      | 179-4312      | \$35.21    |
| 5/16"      | 1-1/2"       | 6"          | 179-2316      | 179-4316      | \$51.04    |
| 3/8"       | 1-3/4"       | 4"          | 179-2375      | 179-4375      | \$43.94    |
| 3/8"       | 1-1/2"       | 6"          | 179-2376      | 179-4376      | \$55.04    |
| 3/8"       | 3"           | 6"          | 179-2336      | 179-4336      | \$57.95    |
| 1/2"       | 3"           | 6"          | 179-2500      | 179-4500      | \$92.50    |
| 1/2"       | 1-1/2"       | 6"          | 179-2506      | 179-4506      | \$89.59    |
| 5/8"       | 3"           | 6"          | 179-2625      | 179-4625      | \$132.41   |
| 3/4"       | 3"           | 6"          | 179-2750      | 179-4750      | \$174.04   |
| 3/4"       | 4"           | 7"          | 179-2757      | 179-4757      | \$212.20   |
| 1"         | 3"           | 6"          | 179-2100      | 179-4100      | \$301.61   |
| 1"         | 4"           | 7"          | 179-2107      | 179-4107      | \$371..30  |

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**Series 180****Metalloy****HTC** **SOLID CARBIDE END MILLS****EXTRA LONG LENGTH****SINGLE END SQUARE / 2-4 FLUTE****ALTIN COATED - HTC HARD COAT**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/8"       | 1"           | 3"          | 180-2125      | 180-4145      | \$14.84    |
| 3/16"      | 1-1/8"       | 3"          | 180-2187      | 180-4187      | \$16.20    |
| 1/4"       | 1-1/2"       | 4"          | 180-2250      | 180-4250      | \$22.84    |
| 1/4"       | 1-1/2"       | 6"          | 180-2256      | 180-4256      | \$35.10    |
| 5/16"      | 1-5/8"       | 4"          | 180-2312      | 180-4312      | \$28.30    |
| 5/16"      | 1-1/2"       | 6"          | 180-2316      | 180-4316      | \$49.42    |
| 3/8"       | 1-3/4"       | 4"          | 180-2375      | 180-4375      | \$34.80    |
| 3/8"       | 1-1/2"       | 6"          | 180-2376      | 180-4376      | \$53.62    |
| 3/8"       | 3"           | 6"          | 180-2336      | 180-4336      | \$54.62    |
| 1/2"       | 3"           | 6"          | 180-2500      | 180-4500      | \$83.36    |
| 1/2"       | 1-1/2"       | 6"          | 180-2506      | 180-4506      | \$76.36    |
| 5/8"       | 3"           | 6"          | 180-2625      | 180-4625      | \$108.50   |
| 3/4"       | 3"           | 6"          | 180-2750      | 180-4750      | \$146.32   |
| 3/4"       | 4"           | 7"          | 180-2757      | 180-4757      | \$178.76   |
| 1"         | 3"           | 6"          | 180-2100      | 180-4100      | \$270.94   |
| 1"         | 4"           | 7"          | 180-2107      | 180-4107      | \$336.78   |

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## SOLID CARBIDE END MILLS

**EXTRA LONG LENGTH**

**SINGLE END BALL / 2-4 FLUTE  
ALTIN COATED - HTC HARD COAT**



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/8"       | 1"           | 3"          | 185-2125      | 185-4145      | \$18.54    |
| 3/16"      | 1-1/8"       | 3"          | 185-2187      | 185-4187      | \$21.08    |
| 1/4"       | 1-1/2"       | 4"          | 185-2250      | 185-4250      | \$29.34    |
| 1/4"       | 1-1/2"       | 6"          | 185-2256      | 185-4256      | \$39.20    |
| 5/16"      | 1-5/8"       | 4"          | 185-2312      | 185-4312      | \$36.30    |
| 5/16"      | 1-1/2"       | 6"          | 185-2316      | 185-4316      | \$55.77    |
| 3/8"       | 1-3/4"       | 4"          | 185-2375      | 185-4375      | \$55.30    |
| 3/8"       | 1-1/2"       | 6"          | 185-2376      | 185-4376      | \$56.74    |
| 3/8"       | 3"           | 6"          | 185-2336      | 185-4336      | \$59.74    |
| 1/2"       | 3"           | 6"          | 185-2500      | 185-4500      | \$95.36    |
| 1/2"       | 1-1/2"       | 6"          | 185-2506      | 185-4506      | \$92.36    |
| 5/8"       | 3"           | 6"          | 185-2625      | 185-4625      | \$135.50   |
| 3/4"       | 3"           | 6"          | 185-2750      | 185-4750      | \$179.42   |
| 3/4"       | 4"           | 7"          | 185-2757      | 185-4757      | \$218.76   |
| 1"         | 3"           | 6"          | 185-2100      | 185-4100      | \$310.94   |
| 1"         | 4"           | 7"          | 185-2107      | 185-4107      | \$382.78   |

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**Series 100*****Metalloy*****HTC** **SOLID CARBIDE END MILLS****STUB LENGTH****SINGLE END SQUARE****2-3-4 FLUTE****UNCOATED**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 3 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|---------------|------------|
| 1/32"      | 1/16"        | 1-1/2"      | 100-2013      | 100-3013      | 100-4013      | \$5.70     |
| 3/64"      | 3/32"        | 1-1/2"      | 100-2046      | 100-3046      | 100-4046      | \$5.70     |
| 1/16"      | 1/8"         | 1-1/2"      | 100-2062      | 100-3062      | 100-4062      | \$4.56     |
| 3/32"      | 3/16"        | 1-1/2"      | 100-2093      | 100-3093      | 100-4093      | \$4.00     |
| 1/8"       | 1/4"         | 1-1/2"      | 100-2125      | 100-3125      | 100-4125      | \$3.80     |
| 5/32"      | 5/16"        | 2"          | 100-2156      | 100-3156      | 100-4156      | \$8.46     |
| 3/16"      | 3/8"         | 2"          | 100-2187      | 100-3187      | 100-4187      | \$8.18     |
| 7/32"      | 7/16"        | 2"          | 100-2218      | 100-3218      | 100-4218      | \$9.88     |
| 1/4"       | 1/2"         | 2"          | 100-2250      | 100-3250      | 100-4250      | \$8.08     |
| 5/16"      | 1/2"         | 2"          | 100-2312      | 100-3312      | 100-4312      | \$10.92    |
| 3/8"       | 5/8"         | 2"          | 100-2375      | 100-3375      | 100-4375      | \$13.88    |
| 7/16"      | 5/8"         | 2-1/2"      | 100-2437      | 100-3437      | 100-4437      | \$19.00    |
| 1/2"       | 5/8"         | 2-1/2"      | 100-2500      | 100-3500      | 100-4500      | \$23.76    |
| 5/8"       | 3/4"         | 3"          | 100-2625      | 100-3625      | 100-4625      | \$48.46    |
| 3/4"       | 1"           | 3"          | 100-2750      | 100-3750      | 100-4750      | \$67.46    |
| 1"         | 1"           | 3"          | 100-2100      | 100-3100      | 100-4100      | \$119.60   |

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## SOLID CARBIDE END MILLS

### STUB LENGTH

### SINGLE END BALL

### 2-3-4 FLUTE

### UNCOATED



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 3 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|---------------|------------|
| 1/32"      | 1/16"        | 1-1/2"      | 105-2031      | 105-3031      | 105-4031      | \$8.56     |
| 3/64"      | 3/32"        | 1-1/2"      | 105-2046      | 105-3046      | 105-4046      | \$8.56     |
| 1/16"      | 1/8"         | 1-1/2"      | 105-2062      | 105-3062      | 105-4062      | \$7.60     |
| 3/32"      | 3/16"        | 1-1/2"      | 105-2093      | 105-3093      | 105-4093      | \$7.60     |
| 1/8"       | 1/4"         | 1-1/2"      | 105-2125      | 105-3125      | 105-4125      | \$6.08     |
| 5/32"      | 5/16"        | 2"          | 105-2156      | 105-3156      | 105-4156      | \$10.08    |
| 3/16"      | 3/8"         | 2"          | 105-2187      | 105-3187      | 105-4187      | \$10.08    |
| 7/32"      | 7/16"        | 2"          | 105-2218      | 105-3218      | 105-4218      | \$12.36    |
| 1/4"       | 1/2"         | 2"          | 105-2250      | 105-3250      | 105-4250      | \$11.60    |
| 5/16"      | 1/2"         | 2"          | 105-2312      | 105-3312      | 105-4312      | \$14.82    |
| 3/8"       | 5/8"         | 2"          | 105-2375      | 105-3375      | 105-4375      | \$18.06    |
| 7/16"      | 5/8"         | 2-1/2"      | 105-2437      | 105-3437      | 105-4437      | \$27.56    |
| 1/2"       | 5/8"         | 2-1/2"      | 105-2500      | 105-3500      | 105-4500      | \$30.40    |
| 5/8"       | 3/4"         | 3"          | 105-2625      | 105-3625      | 105-4625      | \$57.96    |
| 3/4"       | 1"           | 3"          | 105-2750      | 105-3750      | 105-4750      | \$79.80    |
| 1"         | 1"           | 3"          | 105-2100      | 105-3100      | 105-4100      | \$153.70   |

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**Series 107*****Metalloy*****HTC** 

## SOLID CARBIDE END MILLS

**STUB LENGTH****SINGLE END SQUARE****2-3-4 FLUTE****TIN COATED**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 3 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|---------------|------------|
| 1/32"      | 1/16"        | 1-1/2"      | 107-2031      | 107-3031      | 107-4031      | \$7.00     |
| 3/64"      | 3/32"        | 1-1/2"      | 107-2046      | 107-3046      | 107-4046      | \$7.00     |
| 1/16"      | 1/8"         | 1-1/2"      | 107-2062      | 107-3062      | 107-4062      | \$6.26     |
| 3/32"      | 3/16"        | 1-1/2"      | 107-2093      | 107-3093      | 107-4093      | \$5.50     |
| 1/8"       | 1/4"         | 1-1/2"      | 107-2125      | 107-3125      | 107-4125      | \$5.50     |
| 5/32"      | 5/16"        | 2"          | 107-2156      | 107-3156      | 107-4156      | \$10.40    |
| 3/16"      | 3/8"         | 2"          | 107-2187      | 107-3187      | 107-4187      | \$10.20    |
| 7/32"      | 7/16"        | 2"          | 107-2218      | 107-3218      | 107-4218      | \$13.20    |
| 1/4"       | 1/2"         | 2"          | 107-2250      | 107-3250      | 107-4250      | \$12.80    |
| 5/16"      | 1/2"         | 2"          | 107-2312      | 107-3312      | 107-4312      | \$16.00    |
| 3/8"       | 5/8"         | 2"          | 107-2375      | 107-3375      | 107-4375      | \$18.00    |
| 7/16"      | 5/8"         | 2-1/2"      | 107-2437      | 107-3437      | 107-4437      | \$24.50    |
| 1/2"       | 5/8"         | 2-1/2"      | 107-2500      | 107-3500      | 107-4500      | \$29.00    |
| 5/8"       | 3/4"         | 3"          | 107-2625      | 107-3625      | 107-4625      | \$56.00    |
| 3/4"       | 1"           | 3"          | 107-2750      | 107-3750      | 107-4750      | \$72.00    |
| 1"         | 1"           | 3"          | 107-2100      | 107-3100      | 107-4100      | \$135.00   |

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## SOLID CARBIDE END MILLS

### STUB LENGTH

### SINGLE END BALL

### 2-3-4 FLUTE

### TIN COATED



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 3 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|---------------|------------|
| 1/32"      | 1/16"        | 1-1/2"      | 109-2031      | 109-3031      | 109-4031      | \$9.70     |
| 3/64"      | 3/32"        | 1-1/2"      | 109-2046      | 109-3046      | 109-4046      | \$9.60     |
| 1/16"      | 1/8"         | 1-1/2"      | 109-2062      | 109-3062      | 109-4062      | \$8.80     |
| 3/32"      | 3/16"        | 1-1/2"      | 109-2093      | 109-3093      | 109-4093      | \$8.50     |
| 1/8"       | 1/4"         | 1-1/2"      | 109-2125      | 109-3125      | 109-4125      | \$7.20     |
| 5/32"      | 5/16"        | 2"          | 109-2156      | 109-3156      | 109-4156      | \$12.00    |
| 3/16"      | 3/8"         | 2"          | 109-2187      | 109-3187      | 109-4187      | \$11.80    |
| 7/32"      | 7/16"        | 2"          | 109-2218      | 109-3218      | 109-4218      | \$16.00    |
| 1/4"       | 1/2"         | 2"          | 109-2250      | 109-3250      | 109-4250      | \$15.60    |
| 5/16"      | 1/2"         | 2"          | 109-2312      | 109-3312      | 109-4312      | \$19.00    |
| 3/8"       | 5/8"         | 2"          | 109-2375      | 109-3375      | 109-4375      | \$21.00    |
| 7/16"      | 5/8"         | 2-1/2"      | 109-2437      | 109-3437      | 109-4437      | \$24.00    |
| 1/2"       | 5/8"         | 2-1/2"      | 109-2500      | 109-3500      | 109-4500      | \$33.00    |
| 5/8"       | 3/4"         | 3"          | 109-2625      | 109-3625      | 109-4625      | \$64.00    |
| 3/4"       | 1"           | 3"          | 109-2750      | 109-3750      | 109-4750      | \$88.00    |
| 1"         | 1"           | 3"          | 109-2100      | 109-3100      | 109-4100      | \$176.00   |

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**Series 111*****Metalloy*****HTC** **SOLID CARBIDE END MILLS****STUB LENGTH****SINGLE END SQUARE****2-3-4 FLUTE****TICN COAT - HTC PROGRESSIVE COAT**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 3 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|---------------|------------|
| 1/32"      | 1/16"        | 1-1/2"      | 111-2031      | 111-3031      | 111-4031      | \$7.18     |
| 3/64"      | 3/32"        | 1-1/2"      | 111-2046      | 111-3046      | 111-4046      | \$7.18     |
| 1/16"      | 1/8"         | 1-1/2"      | 111-2062      | 111-3062      | 111-4062      | \$6.07     |
| 3/32"      | 3/16"        | 1-1/2"      | 111-2093      | 111-3093      | 111-4093      | \$5.51     |
| 1/8"       | 1/4"         | 1-1/2"      | 111-2125      | 111-3125      | 111-4125      | \$5.34     |
| 5/32"      | 5/16"        | 2"          | 111-2156      | 111-3156      | 111-4156      | \$10.61    |
| 3/16"      | 3/8"         | 2"          | 111-2187      | 111-3187      | 111-4187      | \$10.32    |
| 7/32"      | 7/16"        | 2"          | 111-2218      | 111-3218      | 111-4218      | \$13.87    |
| 1/4"       | 1/2"         | 2"          | 111-2250      | 111-3250      | 111-4250      | \$12.13    |
| 5/16"      | 1/2"         | 2"          | 111-2312      | 111-3312      | 111-4312      | \$16.65    |
| 3/8"       | 5/8"         | 2"          | 111-2375      | 111-3375      | 111-4375      | \$19.50    |
| 7/16"      | 5/8"         | 2-1/2"      | 111-2437      | 111-3437      | 111-4437      | \$27.08    |
| 1/2"       | 5/8"         | 2-1/2"      | 111-2500      | 111-3500      | 111-4500      | \$31.68    |
| 5/8"       | 3/4"         | 3"          | 111-2625      | 111-3625      | 111-4625      | \$60.49    |
| 3/4"       | 1"           | 3"          | 111-2750      | 111-3750      | 111-4750      | \$80.84    |
| 1"         | 1"           | 3"          | 111-2100      | 111-3100      | 111-4100      | \$144.92   |

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## SOLID CARBIDE END MILLS

**STUB LENGTH**

SINGLE END SQUARE

2-3-4 FLUTE

ALTIN COATED - **HTC** HARD COAT



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 3 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|---------------|------------|
| 1/32"      | 1/16"        | 1-1/2"      | 110-2031      | 110-3031      | 110-4031      | \$7.40     |
| 3/64"      | 3/32"        | 1-1/2"      | 110-2046      | 110-3046      | 110-4046      | \$7.40     |
| 1/16"      | 1/8"         | 1-1/2"      | 110-2062      | 110-3062      | 110-4062      | \$6.26     |
| 3/32"      | 3/16"        | 1-1/2"      | 110-2093      | 110-3093      | 110-4093      | \$5.68     |
| 1/8"       | 1/4"         | 1-1/2"      | 110-2125      | 110-3125      | 110-4125      | \$5.50     |
| 5/32"      | 5/16"        | 2"          | 110-2156      | 110-3156      | 110-4156      | \$10.94    |
| 3/16"      | 3/8"         | 2"          | 110-2187      | 110-3187      | 110-4187      | \$10.64    |
| 7/32"      | 7/16"        | 2"          | 110-2218      | 110-3218      | 110-4218      | \$14.30    |
| 1/4"       | 1/2"         | 2"          | 110-2250      | 110-3250      | 110-4250      | \$12.50    |
| 5/16"      | 1/2"         | 2"          | 110-2312      | 110-3312      | 110-4312      | \$17.16    |
| 3/8"       | 5/8"         | 2"          | 110-2375      | 110-3375      | 110-4375      | \$20.10    |
| 7/16"      | 5/8"         | 2-1/2"      | 110-2437      | 110-3437      | 110-4437      | \$27.92    |
| 1/2"       | 5/8"         | 2-1/2"      | 110-2500      | 110-3500      | 110-4500      | \$32.66    |
| 5/8"       | 3/4"         | 3"          | 110-2625      | 110-3625      | 110-4625      | \$62.36    |
| 3/4"       | 1"           | 3"          | 110-2750      | 110-3750      | 110-4750      | \$83.34    |
| 1"         | 1"           | 3"          | 110-2100      | 110-3100      | 110-4100      | \$149.40   |

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**Series 115****Metalloy****HTC** **SOLID CARBIDE END MILLS****STUB LENGTH****SINGLE END BALL****2-3-4 FLUTE****ALTIN COATED - **HTC** HARD COAT**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 3 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|---------------|------------|
| 1/32"      | 1/16"        | 1-1/2"      | 115-2031      | 115-3031      | 115-4031      | \$10.24    |
| 3/64"      | 3/32"        | 1-1/2"      | 115-2046      | 115-3046      | 115-4046      | \$10.24    |
| 1/16"      | 1/8"         | 1-1/2"      | 115-2062      | 115-3062      | 115-4062      | \$9.30     |
| 3/32"      | 3/16"        | 1-1/2"      | 115-2093      | 115-3093      | 115-4093      | \$9.30     |
| 1/8"       | 1/4"         | 1-1/2"      | 115-2125      | 115-3125      | 115-4125      | \$7.78     |
| 5/32"      | 5/16"        | 2"          | 115-2156      | 115-3156      | 115-4156      | \$12.54    |
| 3/16"      | 3/8"         | 2"          | 115-2187      | 115-3187      | 115-4187      | \$12.54    |
| 7/32"      | 7/16"        | 2"          | 115-2218      | 115-3218      | 115-4218      | \$16.78    |
| 1/4"       | 1/2"         | 2"          | 115-2250      | 115-3250      | 115-4250      | \$16.02    |
| 5/16"      | 1/2"         | 2"          | 115-2312      | 115-3312      | 115-4312      | \$21.06    |
| 3/8"       | 5/8"         | 2"          | 115-2375      | 115-3375      | 115-4375      | \$24.28    |
| 7/16"      | 5/8"         | 2-1/2"      | 115-2437      | 115-3437      | 115-4437      | \$36.46    |
| 1/2"       | 5/8"         | 2-1/2"      | 115-2500      | 115-3500      | 115-4500      | \$39.42    |
| 5/8"       | 3/4"         | 3"          | 115-2625      | 115-3625      | 115-4625      | \$71.86    |
| 3/4"       | 1"           | 3"          | 115-2750      | 115-3750      | 115-4750      | \$95.68    |
| 1"         | 1"           | 3"          | 115-2100      | 115-3100      | 115-4100      | \$185.50   |

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## SOLID CARBIDE END MILLS

### DOUBLE END - STUB LENGTH

DOUBLE END SQUARE AND BALL

2-4 FLUTE

### UNCOATED



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/32"      | 1/16"        | 1-1/2"      | 190-2031      | 190-4031      | \$9.00     |
| 3/64"      | 3/32"        | 1-1/2"      | 190-2046      | 190-4046      | \$9.00     |
| 1/16"      | 1/8"         | 1-1/2"      | 190-2062      | 190-4062      | \$8.00     |
| 3/32"      | 3/16"        | 1-1/2"      | 190-2093      | 190-4093      | \$7.60     |
| 7/64"      | 7/32"        | 1-1/2"      | 190-2109      | 190-4109      | \$7.40     |
| 1/8"       | 1/4"         | 1-1/2"      | 190-2125      | 190-4125      | \$7.20     |
| 5/32"      | 5/16"        | 2"          | 190-2156      | 190-4156      | \$11.00    |
| 3/16"      | 5/16"        | 2"          | 190-2187      | 190-4187      | \$10.50    |
| 7/32"      | 3/8"         | 2"          | 190-2218      | 190-4218      | \$12.40    |
| 1/4"       | 1/2"         | 2-1/2"      | 190-2250      | 190-4250      | \$12.20    |
| 9/32"      | 1/2"         | 2-1/2"      | 190-2281      | 190-4281      | \$15.00    |
| 5/16"      | 1/2"         | 2-1/2"      | 190-2312      | 190-4312      | \$14.60    |
| 3/8"       | 9/16"        | 2-1/2"      | 190-2375      | 190-4375      | \$19.00    |
| 7/16"      | 9/16"        | 2-3/4"      | 190-2437      | 190-4437      | \$29.00    |
| 1/2"       | 5/8"         | 3"          | 190-2500      | 190-4500      | \$32.00    |
| 9/16"      | 11/16"       | 3-1/2"      | 190-2562      | 190-4562      | \$70.00    |
| 5/8"       | 11/16"       | 3-1/2"      | 190-2625      | 190-4625      | \$68.00    |
| 3/4"       | 7/8"         | 2"          | 190-2750      | 190-4750      | \$86.00    |

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/32"      | 1/16"        | 1-1/2"      | 195-2031      | 195-4031      | \$16.00    |
| 3/64"      | 3/32"        | 1-1/2"      | 195-2046      | 195-4046      | \$16.00    |
| 1/16"      | 1/8"         | 1-1/2"      | 195-2062      | 195-4062      | \$14.40    |
| 3/32"      | 3/16"        | 1-1/2"      | 195-2093      | 195-4093      | \$14.00    |
| 7/64"      | 7/32"        | 1-1/2"      | 195-2109      | 195-4109      | \$14.00    |
| 1/8"       | 1/4"         | 1-1/2"      | 195-2125      | 195-4125      | \$13.60    |
| 5/32"      | 5/16"        | 2"          | 195-2156      | 195-4156      | \$16.00    |
| 3/16"      | 5/16"        | 2"          | 195-2187      | 195-4187      | \$15.60    |
| 7/32"      | 3/8"         | 2"          | 195-2218      | 195-4218      | \$16.60    |
| 1/4"       | 1/2"         | 2-1/2"      | 195-2250      | 195-4250      | \$16.20    |
| 9/32"      | 1/2"         | 2-1/2"      | 195-2281      | 195-4281      | \$19.00    |
| 5/16"      | 1/2"         | 2-1/2"      | 195-2312      | 195-4312      | \$18.00    |
| 3/8"       | 9/16"        | 2-1/2"      | 195-2375      | 195-4375      | \$28.00    |
| 7/16"      | 9/16"        | 2-3/4"      | 195-2437      | 195-4437      | \$36.00    |
| 1/2"       | 5/8"         | 3"          | 195-2500      | 195-4500      | \$42.00    |
| 9/16"      | 11/16"       | 3-1/2"      | 195-2562      | 195-4562      | \$94.00    |
| 5/8"       | 11/16"       | 3-1/2"      | 195-2625      | 195-4625      | \$88.00    |
| 3/4"       | 7/8"         | 2"          | 195-2750      | 195-4750      | \$112.00   |

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**Series 197 / 199****Metalloy****SOLID CARBIDE END MILLS****DOUBLE END - STUB LENGTH****DOUBLE END SQUARE AND BALL****2-4 FLUTE****TIN COATED**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/32"      | 1/16"        | 1-1/2"      | 197-2031      | 190-4031      | \$10.20    |
| 3/64"      | 3/32"        | 1-1/2"      | 197-2046      | 197-4046      | \$10.10    |
| 1/16"      | 1/8"         | 1-1/2"      | 197-2062      | 197-4062      | \$8.88     |
| 3/32"      | 3/16"        | 1-1/2"      | 197-2093      | 197-4093      | \$8.80     |
| 7/64"      | 7/32"        | 1-1/2"      | 197-2109      | 197-4109      | \$8.80     |
| 1/8"       | 1/4"         | 1-1/2"      | 197-2125      | 197-4125      | \$8.70     |
| 5/32"      | 5/16"        | 2"          | 197-2156      | 197-4156      | \$12.30    |
| 3/16"      | 5/16"        | 2"          | 197-2187      | 197-4187      | \$12.20    |
| 7/32"      | 3/8"         | 2"          | 197-2218      | 197-4218      | \$14.72    |
| 1/4"       | 1/2"         | 2-1/2"      | 197-2250      | 197-4250      | \$14.50    |
| 9/32"      | 1/2"         | 2-1/2"      | 197-2281      | 197-4281      | \$17.90    |
| 5/16"      | 1/2"         | 2-1/2"      | 197-2312      | 197-4312      | \$17.50    |
| 3/8"       | 9/16"        | 2-1/2"      | 197-2375      | 197-4375      | \$21.90    |
| 7/16"      | 9/16"        | 2-3/4"      | 197-2437      | 197-4437      | \$33.68    |
| 1/2"       | 5/8"         | 3"          | 197-2500      | 197-4500      | \$36.60    |
| 9/16"      | 11/16"       | 3-1/2"      | 197-2562      | 197-4562      | \$66.10    |
| 5/8"       | 11/16"       | 3-1/2"      | 197-2625      | 197-4625      | \$77.32    |
| 3/4"       | 7/8"         | 2"          | 197-2750      | 197-4750      | \$98.36    |

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/32"      | 1/16"        | 1-1/2"      | 199-2031      | 199-4031      | \$17.00    |
| 3/64"      | 3/32"        | 1-1/2"      | 199-2046      | 199-4046      | \$17.00    |
| 1/16"      | 1/8"         | 1-1/2"      | 199-2062      | 199-4062      | \$15.80    |
| 3/32"      | 3/16"        | 1-1/2"      | 199-2093      | 199-4093      | \$15.20    |
| 7/64"      | 7/32"        | 1-1/2"      | 199-2109      | 199-4109      | \$15.20    |
| 1/8"       | 1/4"         | 1-1/2"      | 199-2125      | 199-4125      | \$14.90    |
| 5/32"      | 5/16"        | 2"          | 199-2156      | 199-4156      | \$17.10    |
| 3/16"      | 5/16"        | 2"          | 199-2187      | 199-4187      | \$16.80    |
| 7/32"      | 3/8"         | 2"          | 199-2218      | 199-4218      | \$18.10    |
| 1/4"       | 1/2"         | 2-1/2"      | 199-2250      | 199-4250      | \$18.00    |
| 9/32"      | 1/2"         | 2-1/2"      | 199-2281      | 199-4281      | \$21.00    |
| 5/16"      | 1/2"         | 2-1/2"      | 199-2312      | 199-4312      | \$20.50    |
| 3/8"       | 9/16"        | 2-1/2"      | 199-2375      | 199-4375      | \$31.00    |
| 7/16"      | 9/16"        | 2-3/4"      | 199-2437      | 199-4437      | \$42.00    |
| 1/2"       | 5/8"         | 3"          | 199-2500      | 199-4500      | \$48.00    |
| 9/16"      | 11/16"       | 3-1/2"      | 199-2562      | 199-4562      | \$102.00   |
| 5/8"       | 11/16"       | 3-1/2"      | 199-2625      | 199-4625      | \$96.00    |
| 3/4"       | 7/8"         | 2"          | 199-2750      | 199-4750      | \$122.00   |

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## SOLID CARBIDE END MILLS

### DOUBLE END - STUB LENGTH

DOUBLE END SQUARE AND BALL

2-4 FLUTE

TICN COAT- HTC PROGRESSIVE COAT



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/32"      | 1/16"        | 1-1/2"      | 192-2031      | 192-4031      | \$9.70     |
| 3/64"      | 3/32"        | 1-1/2"      | 192-2046      | 192-4046      | \$9.70     |
| 1/16"      | 1/8"         | 1-1/2"      | 192-2062      | 192-4062      | \$8.73     |
| 3/32"      | 3/16"        | 1-1/2"      | 192-2093      | 192-4093      | \$8.34     |
| 7/64"      | 7/32"        | 1-1/2"      | 192-2109      | 192-4109      | \$8.15     |
| 1/8"       | 1/4"         | 1-1/2"      | 192-2125      | 192-4125      | \$7.96     |
| 5/32"      | 5/16"        | 2"          | 192-2156      | 192-4156      | \$13.19    |
| 3/16"      | 5/16"        | 2"          | 192-2187      | 192-4187      | \$12.61    |
| 7/32"      | 3/8"         | 2"          | 192-2218      | 192-4218      | \$16.49    |
| 1/4"       | 1/2"         | 2-1/2"      | 192-2250      | 192-4250      | \$15.91    |
| 9/32"      | 1/2"         | 2-1/2"      | 192-2281      | 192-4281      | \$20.37    |
| 5/16"      | 1/2"         | 2-1/2"      | 192-2312      | 192-4312      | \$19.79    |
| 3/8"       | 9/16"        | 2-1/2"      | 192-2375      | 192-4375      | \$24.25    |
| 7/16"      | 9/16"        | 2-3/4"      | 192-2437      | 192-4437      | \$35.89    |
| 1/2"       | 5/8"         | 3"          | 192-2500      | 192-4500      | \$36.86    |
| 9/16"      | 11/16"       | 3-1/2"      | 192-2562      | 192-4562      | \$77.60    |
| 5/8"       | 11/16"       | 3-1/2"      | 192-2625      | 192-4625      | \$73.72    |
| 3/4"       | 7/8"         | 2"          | 192-2750      | 192-4750      | \$98.94    |

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/32"      | 1/16"        | 1-1/2"      | 194-2031      | 194-4031      | \$16.49    |
| 3/64"      | 3/32"        | 1-1/2"      | 194-2046      | 194-4046      | \$16.49    |
| 1/16"      | 1/8"         | 1-1/2"      | 194-2062      | 194-4062      | \$15.52    |
| 3/32"      | 3/16"        | 1-1/2"      | 194-2093      | 194-4093      | \$15.52    |
| 7/64"      | 7/32"        | 1-1/2"      | 194-2109      | 194-4109      | \$15.13    |
| 1/8"       | 1/4"         | 1-1/2"      | 194-2125      | 194-4125      | \$15.13    |
| 5/32"      | 5/16"        | 2"          | 194-2156      | 194-4156      | \$18.04    |
| 3/16"      | 5/16"        | 2"          | 194-2187      | 194-4187      | \$17.46    |
| 7/32"      | 3/8"         | 2"          | 194-2218      | 194-4218      | \$20.37    |
| 1/4"       | 1/2"         | 2-1/2"      | 194-2250      | 194-4250      | \$19.40    |
| 9/32"      | 1/2"         | 2-1/2"      | 194-2281      | 194-4281      | \$24.25    |
| 5/16"      | 1/2"         | 2-1/2"      | 194-2312      | 194-4312      | \$23.28    |
| 3/8"       | 9/16"        | 2-1/2"      | 194-2375      | 194-4375      | \$32.98    |
| 7/16"      | 9/16"        | 2-3/4"      | 194-2437      | 194-4437      | \$42.68    |
| 1/2"       | 5/8"         | 3"          | 194-2500      | 194-4500      | \$48.50    |
| 9/16"      | 11/16"       | 3-1/2"      | 194-2562      | 194-4562      | \$104.76   |
| 5/8"       | 11/16"       | 3-1/2"      | 194-2625      | 194-4625      | \$99.91    |
| 3/4"       | 7/8"         | 2"          | 194-2750      | 194-4750      | \$128.04   |

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**Series 200 / 205****Metalloy****HTC** **SOLID CARBIDE END MILLS****DOUBLE END - STUB LENGTH****DOUBLE END SQUARE AND BALL****2-4 FLUTE****ALTIN COATED - HTC HARD COAT**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/32"      | 1/16"        | 1-1/2"      | 200-2031      | 200-4031      | \$10.00    |
| 3/64"      | 3/32"        | 1-1/2"      | 200-2046      | 200-4046      | \$10.00    |
| 1/16"      | 1/8"         | 1-1/2"      | 200-2062      | 200-4062      | \$9.00     |
| 3/32"      | 3/16"        | 1-1/2"      | 200-2093      | 200-4093      | \$8.60     |
| 7/64"      | 7/32"        | 1-1/2"      | 200-2109      | 200-4109      | \$8.40     |
| 1/8"       | 1/4"         | 1-1/2"      | 200-2125      | 200-4125      | \$8.20     |
| 5/32"      | 5/16"        | 2"          | 200-2156      | 200-4156      | \$13.60    |
| 3/16"      | 5/16"        | 2"          | 200-2187      | 200-4187      | \$13.00    |
| 7/32"      | 3/8"         | 2"          | 200-2218      | 200-4218      | \$17.00    |
| 1/4"       | 1/2"         | 2-1/2"      | 200-2250      | 200-4250      | \$16.40    |
| 9/32"      | 1/2"         | 2-1/2"      | 200-2281      | 200-4281      | \$21.00    |
| 5/16"      | 1/2"         | 2-1/2"      | 200-2312      | 200-4312      | \$20.40    |
| 3/8"       | 9/16"        | 2-1/2"      | 200-2375      | 200-4375      | \$25.00    |
| 7/16"      | 9/16"        | 2-3/4"      | 200-2437      | 200-4437      | \$37.00    |
| 1/2"       | 5/8"         | 3"          | 200-2500      | 200-4500      | \$38.00    |
| 9/16"      | 11/16"       | 3-1/2"      | 200-2562      | 200-4562      | \$80.00    |
| 5/8"       | 11/16"       | 3-1/2"      | 200-2625      | 200-4625      | \$76.00    |
| 3/4"       | 7/8"         | 2"          | 200-2750      | 200-4750      | \$102.00   |

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/32"      | 1/16"        | 1-1/2"      | 205-2031      | 205-4031      | \$17.00    |
| 3/64"      | 3/32"        | 1-1/2"      | 205-2046      | 205-4046      | \$17.00    |
| 1/16"      | 1/8"         | 1-1/2"      | 205-2062      | 205-4062      | \$16.00    |
| 3/32"      | 3/16"        | 1-1/2"      | 205-2093      | 205-4093      | \$16.00    |
| 7/64"      | 7/32"        | 1-1/2"      | 205-2109      | 205-4109      | \$15.60    |
| 1/8"       | 1/4"         | 1-1/2"      | 205-2125      | 205-4125      | \$15.60    |
| 5/32"      | 5/16"        | 2"          | 205-2156      | 205-4156      | \$18.60    |
| 3/16"      | 5/16"        | 2"          | 205-2187      | 205-4187      | \$18.00    |
| 7/32"      | 3/8"         | 2"          | 205-2218      | 205-4218      | \$21.00    |
| 1/4"       | 1/2"         | 2-1/2"      | 205-2250      | 205-4250      | \$20.00    |
| 9/32"      | 1/2"         | 2-1/2"      | 205-2281      | 205-4281      | \$25.00    |
| 5/16"      | 1/2"         | 2-1/2"      | 205-2312      | 205-4312      | \$24.00    |
| 3/8"       | 9/16"        | 2-1/2"      | 205-2375      | 205-4375      | \$34.00    |
| 7/16"      | 9/16"        | 2-3/4"      | 205-2437      | 205-4437      | \$44.00    |
| 1/2"       | 5/8"         | 3"          | 205-2500      | 205-4500      | \$50.00    |
| 9/16"      | 11/16"       | 3-1/2"      | 205-2562      | 205-4562      | \$108.00   |
| 5/8"       | 11/16"       | 3-1/2"      | 205-2625      | 205-4625      | \$103.00   |
| 3/4"       | 7/8"         | 2"          | 205-2750      | 205-4750      | \$132.00   |

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## SOLID CARBIDE END MILLS

**DOUBLE END - W/WELDON FLATS • DOUBLE END SQUARE / 2-4 FLUTE**  
**UNCOATED**

| CUTTER DIA | SHANK DIAMETER | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|----------------|--------------|-------------|---------------|---------------|------------|
| 3/32"      | 3/8"           | 5/16"        | 3"          | 210-2093      | 210-4093      | \$28.40    |
| 1/8"       | 3/8"           | 3/8"         | 3-1/16"     | 210-2125      | 210-4125      | \$28.00    |
| 5/32"      | 3/8"           | 7/16"        | 3-1/8"      | 210-2156      | 210-4156      | \$27.60    |
| 3/16"      | 3/8"           | 1/2"         | 3-1/4"      | 210-2187      | 210-4187      | \$27.00    |
| 7/32"      | 3/8"           | 9/16"        | 3-1/2"      | 210-2218      | 210-4218      | \$27.00    |
| 1/4"       | 3/8"           | 5/8"         | 3-1/2"      | 210-2250      | 210-4250      | \$27.00    |
| 5/16"      | 3/8"           | 3/4"         | 3-1/2"      | 210-2312      | 210-4312      | \$28.40    |
| 11/32"     | 3/8"           | 3/4"         | 3-1/2"      | 210-2343      | 210-4343      | \$30.40    |
| 3/8"       | 3/8"           | 3/4"         | 3-1/2"      | 210-2375      | 210-4375      | \$30.00    |
| 7/16"      | 1/2"           | 7/8"         | 4"          | 210-2437      | 210-4437      | \$46.00    |
| 1/2"       | 1/2"           | 1"           | 4"          | 210-2500      | 210-4500      | \$42.00    |
| 9/16"      | 5/8"           | 1-1/4"       | 5"          | 210-2532      | 210-4532      | \$78.00    |
| 5/8"       | 5/8"           | 1-1/2"       | 6"          | 210-2625      | 210-4625      | \$84.00    |
| 3/4"       | 3/4"           | 1-1/2"       | 6"          | 210-2750      | 210-4750      | \$122.00   |



## Series 215

## SOLID CARBIDE END MILLS

**DOUBLE END - W/WELDON FLATS • DOUBLE END BALL / 2-4 FLUTE**  
**UNCOATED**

| CUTTER DIA | SHANK DIAMETER | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|----------------|--------------|-------------|---------------|---------------|------------|
| 3/32"      | 3/8"           | 5/16"        | 3"          | 210-2093      | 210-4093      | \$36.00    |
| 1/8"       | 3/8"           | 3/8"         | 3-1/16"     | 210-2125      | 210-4125      | \$34.00    |
| 5/32"      | 3/8"           | 7/16"        | 3-1/8"      | 210-2156      | 210-4156      | \$34.00    |
| 3/16"      | 3/8"           | 1/2"         | 3-1/4"      | 210-2187      | 210-4187      | \$33.00    |
| 7/32"      | 3/8"           | 9/16"        | 3-1/2"      | 210-2218      | 210-4218      | \$33.00    |
| 1/4"       | 3/8"           | 5/8"         | 3-1/2"      | 210-2250      | 210-4250      | \$33.00    |
| 5/16"      | 3/8"           | 3/4"         | 3-1/2"      | 210-2312      | 210-4312      | \$38.00    |
| 11/32"     | 3/8"           | 3/4"         | 3-1/2"      | 210-2343      | 210-4343      | \$38.00    |
| 3/8"       | 3/8"           | 3/4"         | 3-1/2"      | 210-2375      | 210-4375      | \$38.00    |
| 7/16"      | 1/2"           | 7/8"         | 4"          | 210-2437      | 210-4437      | \$56.00    |
| 1/2"       | 1/2"           | 1"           | 4"          | 210-2500      | 210-4500      | \$54.00    |
| 9/16"      | 5/8"           | 1-1/4"       | 5"          | 210-2532      | 210-4532      | \$98.86    |
| 5/8"       | 5/8"           | 1-1/2"       | 6"          | 210-2625      | 210-4625      | \$116.00   |
| 3/4"       | 3/4"           | 1-1/2"       | 6"          | 210-2750      | 210-4750      | \$156.00   |





**Series 212****Metalloy****HTC** **SOLID CARBIDE END MILLS****DOUBLE END - W/WELDON FLATS • DOUBLE END SQUARE / 2-4 FLUTE**  
**ALTIN COATED - HTC HARD COAT**

| CUTTER DIA | SHANK DIAMETER | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|----------------|--------------|-------------|---------------|---------------|------------|
| 3/32"      | 3/8"           | 5/16"        | 3"          | 212-2093      | 212-4093      | \$32.40    |
| 1/8"       | 3/8"           | 3/8"         | 3-1/16"     | 212-2125      | 212-4125      | \$32.00    |
| 5/32"      | 3/8"           | 7/16"        | 3-1/8"      | 212-2156      | 212-4156      | \$32.10    |
| 3/16"      | 3/8"           | 1/2"         | 3-1/4"      | 212-2187      | 212-4187      | \$31.50    |
| 7/32"      | 3/8"           | 9/16"        | 3-1/2"      | 212-2218      | 212-4218      | \$31.50    |
| 1/4"       | 3/8"           | 5/8"         | 3-1/2"      | 212-2250      | 212-4250      | \$31.50    |
| 5/16"      | 3/8"           | 3/4"         | 3-1/2"      | 212-2312      | 212-4312      | \$33.10    |
| 11/32"     | 3/8"           | 3/4"         | 3-1/2"      | 212-2343      | 212-4343      | \$35.10    |
| 3/8"       | 3/8"           | 3/4"         | 3-1/2"      | 212-2375      | 212-4375      | \$34.70    |
| 7/16"      | 1/2"           | 7/8"         | 4"          | 212-2437      | 212-4437      | \$51.20    |
| 1/2"       | 1/2"           | 1"           | 4"          | 212-2500      | 212-4500      | \$49.00    |
| 9/16"      | 5/8"           | 1-1/4"       | 5"          | 212-2532      | 212-4532      | \$87.00    |
| 5/8"       | 5/8"           | 1-1/2"       | 6"          | 212-2625      | 212-4625      | \$93.00    |
| 3/4"       | 3/4"           | 1-1/2"       | 6"          | 212-2750      | 212-4750      | \$132.00   |

**Series 217****SOLID CARBIDE END MILLS****DOUBLE END - W/WELDON FLATS • DOUBLE END BALL / 2-4 FLUTE**  
**ALTIN COATED - HTC HARD COAT**

| CUTTER DIA | SHANK DIAMETER | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|----------------|--------------|-------------|---------------|---------------|------------|
| 3/32"      | 3/8"           | 5/16"        | 3"          | 217-2093      | 217-4093      | \$40.00    |
| 1/8"       | 3/8"           | 3/8"         | 3-1/16"     | 217-2125      | 217-4125      | \$38.00    |
| 5/32"      | 3/8"           | 7/16"        | 3-1/8"      | 217-2156      | 217-4156      | \$38.50    |
| 3/16"      | 3/8"           | 1/2"         | 3-1/4"      | 217-2187      | 217-4187      | \$37.50    |
| 7/32"      | 3/8"           | 9/16"        | 3-1/2"      | 217-2218      | 217-4218      | \$37.50    |
| 1/4"       | 3/8"           | 5/8"         | 3-1/2"      | 217-2250      | 217-4250      | \$37.50    |
| 5/16"      | 3/8"           | 3/4"         | 3-1/2"      | 217-2312      | 217-4312      | \$42.70    |
| 11/32"     | 3/8"           | 3/4"         | 3-1/2"      | 217-2343      | 217-4343      | \$43.10    |
| 3/8"       | 3/8"           | 3/4"         | 3-1/2"      | 217-2375      | 217-4375      | \$42.70    |
| 7/16"      | 1/2"           | 7/8"         | 4"          | 217-2437      | 217-4437      | \$61.20    |
| 1/2"       | 1/2"           | 1"           | 4"          | 217-2500      | 217-4500      | \$61.00    |
| 9/16"      | 5/8"           | 1-1/4"       | 5"          | 217-2532      | 217-4532      | \$107.86   |
| 5/8"       | 5/8"           | 1-1/2"       | 6"          | 217-2625      | 217-4625      | \$125.00   |
| 3/4"       | 3/4"           | 1-1/2"       | 6"          | 217-2750      | 217-4750      | \$166.00   |



## SOLID CARBIDE END MILLS

### EXTRA-EXTRA LONG LENGTHS

SINGLE END SQUARE

2-4 FLUTE

UNCOATED & ALTIN COATED - **HTC** HARD COAT



### UNCOATED

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/4"       | 3"           | 6"          | 770-2256      | 770-4256      | \$34.50    |
| 5/16"      | 3"           | 6"          | 770-2316      | 770-4316      | \$42.18    |
| 3/8"       | 4"           | 7"          | 770-2757      | 770-4757      | \$52.88    |
| 7/16"      | 3"           | 6"          | 770-2436      | 770-4436      | \$64.32    |
| 1/2"       | 4"           | 7"          | 770-2507      | 770-4507      | \$77.90    |
| 1/2"       | 5"           | 8"          | 770-2508      | 770-4508      | \$91.24    |
| 5/8"       | 4"           | 7"          | 770-2627      | 770-4627      | \$103.94   |
| 5/8"       | 5"           | 8"          | 770-2628      | 770-4628      | \$127.48   |
| 5/8"       | 6"           | 9"          | 770-2629      | 770-4629      | \$159.18   |
| 3/4"       | 5"           | 8"          | 770-2758      | 770-4757      | \$176.00   |
| 3/4"       | 6"           | 9"          | 770-2759      | 770-4759      | \$192.32   |
| 3/4"       | 8"           | 12"         | 770-2712      | 770-4712      | \$224.00   |
| 1"         | 5"           | 8"          | 770-2108      | 770-4108      | \$386.00   |
| 1"         | 6"           | 9"          | 770-2109      | 770-4109      | \$448.00   |
| 1"         | 7"           | 10"         | 770-2110      | 770-4110      | \$482.00   |
| 1"         | 8"           | 12"         | 770-2112      | 770-4112      | \$537.00   |

### ALTIN COATED - **HTC** HARD COAT

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/4"       | 3"           | 6"          | 777-2256      | 777-4256      | \$45.15    |
| 5/16"      | 3"           | 6"          | 777-2316      | 777-4316      | \$53.22    |
| 3/8"       | 4"           | 7"          | 777-2757      | 777-4757      | \$64.81    |
| 7/16"      | 3"           | 6"          | 777-2436      | 777-4436      | \$73.94    |
| 1/2"       | 4"           | 7"          | 777-2507      | 777-4507      | \$89.17    |
| 1/2"       | 5"           | 8"          | 777-2508      | 777-4508      | \$114.28   |
| 5/8"       | 4"           | 7"          | 777-2627      | 777-4627      | \$118.13   |
| 5/8"       | 5"           | 8"          | 777-2628      | 777-4628      | \$143.71   |
| 5/8"       | 6"           | 9"          | 777-2629      | 777-4629      | \$176.08   |
| 3/4"       | 5"           | 8"          | 777-2758      | 777-4757      | \$194.74   |
| 3/4"       | 6"           | 9"          | 777-2759      | 777-4759      | \$207.33   |
| 3/4"       | 8"           | 12"         | 777-2712      | 777-4712      | \$241.17   |
| 1"         | 5"           | 8"          | 777-2108      | 777-4108      | \$403.09   |
| 1"         | 6"           | 9"          | 777-2109      | 777-4109      | \$465.61   |
| 1"         | 7"           | 10"         | 777-2110      | 777-4110      | \$503.96   |
| 1"         | 8"           | 12"         | 777-2112      | 777-4112      | \$552.19   |

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Series 775 / 778

*Metalloy*HTC **SOLID CARBIDE END MILLS****EXTRA-EXTRA LONG LENGTHS**

SINGLE END BALL

2-4 FLUTE

**UNCOATED & ALTiN COATED - HTC HARD COAT****UNCOATED**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/4"       | 3"           | 6"          | 775-2256      | 775-4256      | \$38.50    |
| 5/16"      | 3"           | 6"          | 775-2316      | 775-4316      | \$46.90    |
| 3/8"       | 4"           | 7"          | 775-2757      | 775-4757      | \$57.00    |
| 7/16"      | 3"           | 6"          | 775-2436      | 775-4436      | \$70.00    |
| 1/2"       | 4"           | 7"          | 775-2507      | 775-4507      | \$83.00    |
| 1/2"       | 5"           | 8"          | 775-2508      | 775-4508      | \$97.00    |
| 5/8"       | 4"           | 7"          | 775-2627      | 775-4627      | \$113.00   |
| 5/8"       | 5"           | 8"          | 775-2628      | 775-4628      | \$135.00   |
| 5/8"       | 6"           | 9"          | 775-2629      | 775-4629      | \$169.00   |
| 3/4"       | 5"           | 8"          | 775-2758      | 775-4757      | \$193.00   |
| 3/4"       | 6"           | 9"          | 775-2759      | 775-4759      | \$218.00   |
| 3/4"       | 8"           | 12"         | 775-2712      | 775-4712      | \$243.00   |
| 1"         | 5"           | 8"          | 775-2108      | 775-4108      | \$407.00   |
| 1"         | 6"           | 9"          | 775-2109      | 775-4109      | \$479.00   |
| 1"         | 7"           | 10"         | 775-2110      | 775-4110      | \$509.00   |
| 1"         | 8"           | 12"         | 775-2112      | 775-4112      | \$561.00   |

**ALTiN COATED - HTC HARD COAT**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/4"       | 3"           | 6"          | 778-2256      | 778-4256      | \$49.15    |
| 5/16"      | 3"           | 6"          | 778-2316      | 778-4316      | \$57.94    |
| 3/8"       | 4"           | 7"          | 778-2757      | 778-4757      | \$68.93    |
| 7/16"      | 3"           | 6"          | 778-2436      | 778-4436      | \$79.62    |
| 1/2"       | 4"           | 7"          | 778-2507      | 778-4507      | \$94.27    |
| 1/2"       | 5"           | 8"          | 778-2508      | 778-4508      | \$120.04   |
| 5/8"       | 4"           | 7"          | 778-2627      | 778-4627      | \$127.19   |
| 5/8"       | 5"           | 8"          | 778-2628      | 778-4628      | \$151.23   |
| 5/8"       | 6"           | 9"          | 778-2629      | 778-4629      | \$185.90   |
| 3/4"       | 5"           | 8"          | 778-2758      | 778-4757      | \$211.94   |
| 3/4"       | 6"           | 9"          | 778-2759      | 778-4759      | \$233.01   |
| 3/4"       | 8"           | 12"         | 778-2712      | 778-4712      | \$260.77   |
| 1"         | 5"           | 8"          | 778-2108      | 778-4108      | \$430.09   |
| 1"         | 6"           | 9"          | 778-2109      | 778-4109      | \$496.61   |
| 1"         | 7"           | 10"         | 778-2110      | 778-4110      | \$530.96   |
| 1"         | 8"           | 12"         | 778-2112      | 778-4112      | \$576.19   |

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## SOLID CARBIDE END MILLS

**STRAIGHT FLUTE • SINGLE END • 2-4 FLUTE**

**UNCOATED**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/8"       | 1/2"         | 1-1/2"      | 780-2125      | 780-4125      | \$5.50     |
| 5/32"      | 5/8"         | 2"          | 780-2156      | 780-4156      | \$10.00    |
| 3/16"      | 5/8"         | 2"          | 780-2187      | 780-4187      | \$9.60     |
| 1/4"       | 3/4"         | 2-1/2"      | 780-2250      | 780-4250      | \$12.20    |
| 9/32"      | 13/16"       | 2-1/2"      | 780-2282      | 780-4282      | \$17.50    |
| 5/16"      | 13/16"       | 2-1/2"      | 780-2312      | 780-4312      | \$16.50    |
| 3/8"       | 1"           | 2-1/2"      | 780-2375      | 780-4375      | \$20.30    |
| 7/16"      | 1"           | 2-3/4"      | 780-2437      | 780-4437      | \$28.20    |
| 1/2"       | 1"           | 3"          | 780-2500      | 780-4500      | \$34.50    |
| 5/8"       | 1-1/4"       | 3-1/2"      | 780-2625      | 780-4625      | \$76.00    |
| 3/4"       | 1-1/2"       | 4"          | 780-2750      | 780-4750      | \$104.00   |
| 1"         | 1-1/2"       | 4"          | 780-2100      | 780-4100      | \$166.00   |



## Series 795

## SOLID CARBIDE END MILLS

**LEFT HAND • SINGLE END SQUARE • 4 FLUTE**

**UNCOATED**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|------------|
| 3/16"      | 5/8"         | 2"          | 795-18LH      | \$17.20    |
| 1/4"       | 3/4"         | 2-1/2"      | 795-25LH      | \$17.00    |
| 5/16"      | 13/16"       | 2-1/2"      | 795-31LH      | \$23.00    |
| 3/8"       | 1"           | 2-1/2"      | 795-37LH      | \$29.20    |
| 7/16"      | 1"           | 2-3/4"      | 795-43LH      | \$42.00    |
| 1/2"       | 1"           | 3"          | 795-50LH      | \$50.00    |
| 5/8"       | 1-1/4"       | 3-1/2"      | 795-62LH      | \$87.00    |
| 3/4"       | 1-1/2"       | 4"          | 795-75LH      | \$134.00   |
| 1"         | 1-1/2"       | 4"          | 795-10LH      | \$186.00   |



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**PROUD TO BE MADE IN THE U.S.A.**



Series 790 / 792

*Metalloy*HTC **SOLID CARBIDE END MILLS****6 FLUTE SQUARE**

SINGLE END SQUARE

6 FLUTE

**UNCOATED & ALTIM COATED - HTC HARD COAT****UNCOATED**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 6 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|------------|
| 1/8"       | 1/2"         | 1-1/2"      | 790-6125      | \$4.50     |
| 3/16"      | 5/8"         | 2"          | 790-6187      | \$9.20     |
| 1/4"       | 3/4"         | 2-1/2"      | 790-6250      | \$10.10    |
| 5/16"      | 7/8"         | 2-1/2"      | 790-6312      | \$12.20    |
| 3/8"       | 1"           | 2-1/2"      | 790-6375      | \$15.30    |
| 7/16"      | 1"           | 2-1/4"      | 790-6437      | \$22.44    |
| 1/2"       | 1"           | 3"          | 790-6500      | \$28.60    |
| 9/16"      | 1-1/4"       | 3-1/2"      | 790-6562      | \$52.50    |
| 5/8"       | 1-1/4"       | 3-1/2"      | 790-6625      | \$54.80    |
| 3/4"       | 1-1/2"       | 4"          | 790-6750      | \$75.30    |
| 7/8"       | 1-1/2"       | 4"          | 790-6875      | \$130.00   |
| 1"         | 1-1/2"       | 4"          | 790-6100      | \$134.00   |

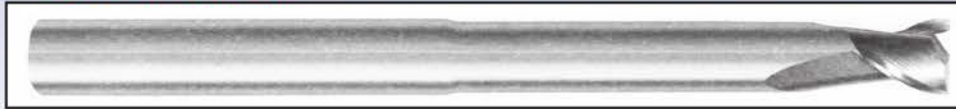
**ALTIM COATED - HTC HARD COAT**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 6 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|------------|
| 1/8"       | 1/2"         | 1-1/2"      | 792-6125      | \$6.28     |
| 3/16"      | 5/8"         | 2"          | 792-6187      | \$11.80    |
| 1/4"       | 3/4"         | 2-1/2"      | 792-6250      | \$14.76    |
| 5/16"      | 7/8"         | 2-1/2"      | 792-6312      | \$18.76    |
| 3/8"       | 1"           | 2-1/2"      | 792-6375      | \$21.86    |
| 7/16"      | 1"           | 2-1/4"      | 792-6437      | \$31.82    |
| 1/2"       | 1"           | 3"          | 792-6500      | \$37.98    |
| 9/16"      | 1-1/4"       | 3-1/2"      | 792-6562      | \$67.14    |
| 5/8"       | 1-1/4"       | 3-1/2"      | 792-6625      | \$69.44    |
| 3/4"       | 1-1/2"       | 4"          | 792-6750      | \$92.02    |
| 7/8"       | 1-1/2"       | 4"          | 792-6875      | \$159.26   |
| 1"         | 1-1/2"       | 4"          | 792-6100      | \$163.24   |

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## SOLID CARBIDE END MILLS

**LONG REACH • SINGLE END SQUARE • 2 FLUTE**



| FLUTE DIA. | SHANK DIA. | LENGTH OF CUT | OVERALL LENGTH | LBS.  | NO. OF FLUTES | CATALOG NO. | 2 FLUTE PART# | UNCOATED LIST PRICE | 2 FLUTE PART# | ALTIN COATED LIST PRICE |
|------------|------------|---------------|----------------|-------|---------------|-------------|---------------|---------------------|---------------|-------------------------|
| 3/16       | 3/16       | 3/8           | 3              | 1-5/8 | 2             | HSMM-2-6    | 95408         | \$46.02             | 99691         | \$50.43                 |
| 1/4        | 1/4        | 3/8           | 4              | 2-1/8 | 2             | HSMM-2-8    | 95412         | \$52.40             | 99692         | \$59.85                 |
| 5/16       | 5/16       | 7/16          | 4              | 2-1/8 | 2             | HSMM-2-10   | 95416         | \$59.24             | 99693         | \$66.69                 |
| 3/8        | 3/8        | 1/2           | 4              | 2-1/8 | 2             | HSMM-2-12   | 95420         | \$64.18             | 99694         | \$71.64                 |
| 1/2        | 1/2        | 5/8           | 6              | 3-3/8 | 2             | HSML-2-16   | 94928         | \$89.58             | 99687         | \$104.13                |
| 1/2        | 1/2        | 5/8           | 4              | 2-1/8 | 2             | HSMM-2-16   | 95428         | \$74.48             | 99695         | \$89.03                 |
| 5/8        | 5/8        | 3/4           | 6              | 3-3/8 | 2             | HSML-2-20   | 94930         | \$148.46            | 99698         | \$164.92                |
| 5/8        | 5/8        | 3/4           | 6              | 2-3/8 | 2             | HSMM-2-20   | 95430         | \$139.98            | 99696         | \$156.43                |
| 3/4        | 3/4        | 1             | 6              | 2-1/2 | 2             | HSML-2-24   | 94932         | \$194.68            | 99689         | \$215.02                |
| 3/4        | 3/4        | 1             | 6              | 2-1/2 | 2             | HSMM-2-24   | 95432         | \$183.40            | 99697         | \$203.73                |
| 1          | 1          | 1-1/4         | 7              | 4-3/8 | 2             | HSML-2-32   | 94934         | \$324.34            | 99690         | \$351.89                |
| 1          | 1          | 1-1/4         | 6              | 3-3/8 | 2             | HSMM-2-32   | 95434         | \$282.18            | 99698         | \$308.02                |

## Series 765

## SOLID CARBIDE END MILLS

**LONG REACH • SINGLE END BALL • 2 FLUTE**



| FLUTE DIA. | SHANK DIA. | LENGTH OF CUT | OVERALL LENGTH | LBS.  | NO. OF FLUTES | CATALOG NO. | 2 FLUTE PART# | UNCOATED LIST PRICE | 2 FLUTE PART# | ALTIN COATED LIST PRICE |
|------------|------------|---------------|----------------|-------|---------------|-------------|---------------|---------------------|---------------|-------------------------|
| 3/16       | 3/16       | 3/8           | 3              | 1-5/8 | 2             | RHSMM-2-6   | 95508         | \$49.83             | 99699         | \$54.24                 |
| 1/4        | 1/4        | 3/8           | 4              | 2-1/8 | 2             | RHSMM-2-8   | 95512         | \$56.64             | 99700         | \$64.09                 |
| 5/16       | 5/16       | 7/16          | 4              | 2-1/8 | 2             | RHSMM-2-10  | 95516         | \$63.48             | 99701         | \$70.93                 |
| 3/8        | 3/8        | 1/2           | 4              | 2-1/8 | 2             | RHSMM-2-12  | 95520         | \$70.54             | 99702         | \$77.99                 |
| 1/2        | 1/2        | 5/8           | 6              | 2-1/8 | 2             | RHSML-2-16  | 95928         | \$99.60             | 99707         | \$114.15                |
| 1/2        | 1/2        | 5/8           | 4              | 3-3/8 | 2             | RHSMM-2-16  | 95528         | \$84.37             | 99703         | \$98.93                 |
| 5/8        | 5/8        | 3/4           | 6              | 3-3/8 | 2             | RHSML-2-20  | 95530         | \$158.34            | 99704         | \$174.79                |
| 5/8        | 5/8        | 3/4           | 6              | 2-3/8 | 2             | RHSMM-2-20  | 95930         | \$166.81            | 99708         | \$183.27                |
| 3/4        | 3/4        | 1             | 6              | 2-1/2 | 2             | RHSML-2-24  | 95532         | \$210.21            | 99705         | \$230.54                |
| 3/4        | 3/4        | 1             | 6              | 3-3/8 | 2             | RHSMM-2-24  | 95932         | \$221.48            | 99709         | \$241.82                |
| 1          | 1          | 1-1/4         | 6              | 3-3/8 | 2             | RHSML-2-32  | 95534         | \$324.48            | 99706         | \$350.34                |
| 1          | 1          | 1-1/4         | 7              | 4-3/8 | 2             | RHSMM-2-32  | 95934         | \$366.83            | 99710         | \$394.24                |



**Series 772*****Metalloy*****SOLID CARBIDE END MILLS****LONG REACH • SINGLE END SQUARE • 4 FLUTE**

| FLUTE DIA. | SHANK DIA. | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | CATALOG NO. | 4 FLUTE PART# | UNCOATED LIST PRICE | 4 FLUTE PART# | ALTIN COATED LIST PRICE |
|------------|------------|---------------|----------------|---------------|-------------|---------------|---------------------|---------------|-------------------------|
| 1/4        | 1/4        | 3/4           | 4              | 4             | SHXL-4-8    | 96012         | \$23.82             | 99739         | \$31.28                 |
| 5/16       | 5/16       | 13/16         | 4              | 4             | SHXL-4-10   | 96016         | \$28.95             | 99740         | \$36.40                 |
| 3/8        | 3/8        | 1             | 4              | 4             | SHXL-4-12   | 96020         | \$32.98             | 99741         | \$40.44                 |
| 7/16       | 7/16       | 1             | 6              | 4             | SHXL-4-14   | 96025         | \$45.99             | 99742         | \$56.00                 |
| 1/2        | 1/2        | 1             | 6              | 4             | SHXL-4-16   | 96028         | \$64.23             | 99743         | \$78.78                 |
| 5/8        | 5/8        | 1-1/4         | 6              | 4             | SHXL-4-20   | 96030         | \$97.25             | 99744         | \$113.71                |
| 3/4        | 3/4        | 1-1/2         | 6              | 4             | SHXL-4-24   | 96032         | \$149.85            | 99745         | \$170.18                |
| 1          | 1          | 1-1/2         | 6              | 4             | SHXL-4-32   | 96034         | \$243.48            | 99746         | \$269.34                |

**Series 774****SOLID CARBIDE END MILLS****LONG REACH • SINGLE END BALL • 4 FLUTE**

| FLUTE DIA. | SHANK DIA. | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | CATALOG NO. | 4 FLUTE PART# | UNCOATED LIST PRICE | 4 FLUTE PART# | ALTIN COATED LIST PRICE |
|------------|------------|---------------|----------------|---------------|-------------|---------------|---------------------|---------------|-------------------------|
| 1/4        | 1/4        | 3/4           | 4              | 4             | RSHXL-4-8   | 96112         | \$27.06             | 99731         | \$34.53                 |
| 5/16       | 5/16       | 13/16         | 4              | 4             | RSHXL-4-10  | 96116         | \$33.43             | 99732         | \$40.87                 |
| 3/8        | 3/8        | 1             | 4              | 4             | RSHXL-4-12  | 96120         | \$38.51             | 99733         | \$45.96                 |
| 7/16       | 7/16       | 1             | 4              | 4             | RSHXL-4-14  | 96125         | \$53.17             | 99734         | \$60.61                 |
| 1/2        | 1/2        | 1             | 6              | 4             | RSHXL-4-16  | 96128         | \$71.93             | 99735         | \$86.47                 |
| 5/8        | 5/8        | 1-1/4         | 6              | 4             | RSHXL-4-20  | 96130         | \$111.72            | 99736         | \$126.26                |
| 3/4        | 3/4        | 1-1/2         | 6              | 4             | RSHXL-4-24  | 96132         | \$170.31            | 99737         | \$184.85                |
| 1          | 1          | 1-1/2         | 6              | 4             | RSHXL-4-32  | 96134         | \$277.72            | 99738         | \$292.27                |

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## SOLID CARBIDE END MILLS

**EXTRA LONG REACH** • SINGLE END SQUARE / 2-4 FLUTE  
**UNCOATED**



| CUTTER DIA | LENGTH OF CUT | CORNER RADIUS | OVERALL REACH | OVERALL LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|---------------|---------------|---------------|----------------|---------------|---------------|------------|
| 1/4"       | 3/8"          | .015          | 4-3/8"        | 6"             | 750-2256      | 750-4256      | \$51.00    |
| 5/16"      | 1/2"          | .015          | 4-5/16"       | 6"             | 750-2316      | 750-4316      | \$57.00    |
| 3/8"       | 1/2"          | .030          | 4-5/16"       | 6"             | 750-2376      | 750-4376      | \$65.00    |
| 1/2"       | 3/4"          | .030          | 5-3/4"        | 8"             | 750-2508      | 750-4508      | \$107.00   |
| 5/8"       | 7/8"          | .030          | 5-5/8"        | 8"             | 750-2628      | 750-4628      | \$137.00   |
| 3/4"       | 1"            | .030          | 5-5/8"        | 8"             | 750-2758      | 750-4758      | \$213.00   |
| 1"         | 1-1/4"        | .060          | 5-5/8"        | 10"            | 750-2110      | 750-4110      | \$386.00   |

## Series 755

## SOLID CARBIDE END MILLS

**EXTRA LONG REACH** • SINGLE END BALL / 2-4 FLUTE  
**UNCOATED**



| CUTTER DIA | LENGTH OF CUT | OVERALL REACH | OVERALL LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|---------------|---------------|----------------|---------------|---------------|------------|
| 1/4"       | 3/8"          | 4-3/8"        | 6"             | 755-2256      | 755-4256      | \$54.00    |
| 5/16"      | 1/2"          | 4-5/16"       | 6"             | 755-2316      | 755-4316      | \$59.00    |
| 3/8"       | 1/2"          | 4-5/16"       | 6"             | 755-2376      | 755-4376      | \$68.00    |
| 1/2"       | 3/4"          | 5-3/4"        | 8"             | 755-2508      | 755-4508      | \$113.00   |
| 5/8"       | 7/8"          | 5-5/8"        | 8"             | 755-2628      | 755-4628      | \$142.00   |
| 3/4"       | 1"            | 5-5/8"        | 8"             | 755-2758      | 755-4758      | \$221.00   |
| 1"         | 1-1/4"        | 5-5/8"        | 10"            | 755-2110      | 755-4110      | \$394.00   |

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**PROUD TO BE MADE IN THE U.S.A.**





# HTC-HOT MILLS

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PROUD TO BE MADE IN THE U.S.A.

# HTC-HOT MILLS

OUR UNIQUE HIGH PERFORMANCE 4-FLUTE FINISHING VARIABLE-INDEXED ACCELERATOR CARBIDE END MILLS CUT STAINLESS STEEL AND OTHER TOUGH ALLOYS AT HIGH METAL REMOVAL RATES. SPECIAL TOOL GEOMETRICS OFFER REDUCED VIBRATION, GREATER STRENGTH, TOOL LIFE AND FEEDS & SPEEDS. OUR UNIQUE HIGH PERFORMANCE VARIABLE INDEXED 4-FLUTE ACCELERATOR CARBIDE END MILL STANDARD OFFERING INCLUDE:

- VARIABLE INDEXED FLUTE TO FLUTE; REDUCES VIBRATIONS ALLOWING INCREASED FEEDS & SPEEDS.
- ECCENTRIC-RADIAL O.D. RELIEVED; INCREASES TOOL STRENGTH ALLOWING GREATER FEEDS & SPEEDS.
- OUR BEST HARD COATING FOR HEAVY FAST METAL REMOVAL RATES—CAN BE USED DRY
- SHANK O.D. COOLANT GROOVE-EACH FLUTE; TO MAXIMIZE COOLING AND CHIP EVACUATION VELOCITY
- ECCENTRIC O.D. PRIMARY RELIEF
- 35 HELIX/RHC-RHS
- STD WITH CORNER RADIUS
- FLUTE DIAMETER  $+.000-.002$
- SHANK DIAMETER  $-.0001-.0004$
- HTC —ALTIN HARD COAT
- STD. WITH SHANK O.D. COOLANT GROOVES FEED SLOTS MAXIMIZE COOLING & CHIP EVACUATION

**HIGH PERFORMANCE 4-FLUTE FINISHING VARIABLE  
INDEXED CARBIDE END MILLS-THE ACCELERATOR SERIES**

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# Metalloy

# HTC

**Series 800**

## SOLID CARBIDE END MILLS

**HTC HOT MILLS****SINGLE END SQUARE****4 FLUTE****ALTIN COATED - HTC HARD COAT**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | CORNER RADIUS | PART#    | LIST PRICE |
|------------|--------------|-------------|---------------|----------|------------|
| 1/8"       | 1/2"         | 1-1/2"      | .010          | 800-1250 | \$12.00    |
| 3/16"      | 5/8"         | 2"          | .010          | 800-1870 | \$14.00    |
| 1/4"       | 3/4"         | 2-1/2"      | .015          | 800-2500 | \$18.00    |
| 5/16"      | 7/8"         | 2-1/2"      | .015          | 800-3120 | \$26.00    |
| 3/8"       | 1"           | 2-1/2"      | .020          | 800-3750 | \$32.00    |
| 7/16"      | 1-1/8"       | 2-3/4"      | .025          | 800-4370 | \$48.00    |
| 1/2"       | 1-1/4"       | 3"          | .030          | 800-5000 | \$58.00    |
| 5/8"       | 1-1/2"       | 3-1/2"      | .030          | 800-6250 | \$94.00    |
| 3/4"       | 1-3/4"       | 4"          | .040          | 800-7500 | \$136.00   |
| 1"         | 1-3/4"       | 4"          | .045          | 800-1000 | \$216.00   |

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## SOLID CARBIDE END MILLS

**HTC BALL END HOT MILLS**

**SINGLE END BALL**

**4 FLUTE**

**ALTIN COATED - HTC HARD COAT**



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | PART#    | LIST PRICE |
|------------|--------------|-------------|----------|------------|
| 1/8"       | 1/2"         | 1-1/2"      | 810-125B | \$16.46    |
| 3/16"      | 5/8"         | 2"          | 810-187B | \$18.24    |
| 1/4"       | 3/4"         | 2-1/2"      | 810-250B | \$26.00    |
| 5/16"      | 7/8"         | 2-1/2"      | 810-312B | \$36.00    |
| 3/8"       | 1"           | 2-1/2"      | 810-375B | \$40.00    |
| 7/16"      | 1-1/8"       | 2-3/4"      | 810-437B | \$56.00    |
| 1/2"       | 1-1/4"       | 3"          | 810-500B | \$72.00    |
| 5/8"       | 1-1/2"       | 3-1/2"      | 810-625B | \$128.00   |
| 3/4"       | 1-3/4"       | 4"          | 810-750B | \$175.00   |
| 1"         | 1-3/4"       | 4"          | 810-100B | \$278.00   |

HTC-HOT MILLS

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*Metalloy***HTC** **Series 815****SOLID CARBIDE END MILLS****HTC STUB HOT MILLS****SINGLE END SQUARE****4 FLUTE****ALTIN COATED - **HTC** HARD COAT**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | CORNER RADIUS | PART#    | LIST PRICE |
|------------|--------------|-------------|---------------|----------|------------|
| 1/8"       | 1/4"         | 1-1/2"      | .010          | 815-1250 | \$10.00    |
| 3/16"      | 1/4"         | 2"          | .010          | 815-1870 | \$11.00    |
| 1/4"       | 5/16"        | 2"          | .015          | 815-2500 | \$16.00    |
| 5/16"      | 3/8"         | 2"          | .015          | 815-3120 | \$23.00    |
| 3/8"       | 1/2"         | 2"          | .020          | 815-3750 | \$29.00    |
| 7/16"      | 5/8"         | 2-1/2"      | .025          | 815-4370 | \$44.00    |
| 1/2"       | 5/8"         | 2-1/2"      | .030          | 815-5000 | \$53.00    |
| 5/8"       | 1"           | 3"          | .030          | 815-6250 | \$88.00    |
| 3/4"       | 1"           | 3"          | .040          | 815-7500 | \$129.00   |
| 1"         | 1"           | 3"          | .045          | 815-1000 | \$193.00   |

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## SOLID CARBIDE END MILLS

**HTC STUB END HOT MILLS**

**SINGLE END BALL**

**4 FLUTE**

**ALTIN COATED - HTC HARD COAT**



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | PART#    | LIST PRICE |
|------------|--------------|-------------|----------|------------|
| 1/8"       | 1/4"         | 1-1/2"      | 820-125B | \$14.00    |
| 3/16"      | 1/4"         | 2"          | 820-187B | \$16.00    |
| 1/4"       | 5/16"        | 2"          | 820-250B | \$24.00    |
| 5/16"      | 3/8"         | 2"          | 820-312B | \$32.00    |
| 3/8"       | 1/2"         | 2"          | 820-375B | \$37.00    |
| 7/16"      | 5/8"         | 2-1/2"      | 820-437B | \$51.00    |
| 1/2"       | 5/8"         | 2-1/2"      | 820-500B | \$66.00    |
| 5/8"       | 1"           | 3"          | 820-625B | \$121.00   |
| 3/4"       | 1"           | 3"          | 820-750B | \$164.00   |
| 1"         | 1"           | 3"          | 820-100B | \$263.00   |

HTC-HOT MILLS

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# Metalloy

**HTC** **Series 822**

## SOLID CARBIDE END MILLS

**HTC LONG REACH HOT MILLS****SINGLE END SQUARE****4 FLUTE****ALTIN COATED - HTC HARD COAT**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | CORNER RADIUS | PART#    | LIST PRICE |
|------------|--------------|-------------|---------------|----------|------------|
| 1/4"       | 3/4"         | 4"          | .015          | 822-2500 | \$34.50    |
| 5/16"      | 7/8"         | 4"          | .015          | 822-3120 | \$36.20    |
| 3/8"       | 1"           | 4"          | .020          | 822-3750 | \$42.15    |
| 1/2"       | 1-1/4"       | 4"          | .030          | 822-5000 | \$78.00    |
| 1/2"       | 1-1/4"       | 6"          | .030          | 822-5100 | \$87.90    |
| 5/8"       | 1-1/2"       | 6"          | .030          | 822-6255 | \$153.00   |
| 3/4"       | 1-3/4"       | 6"          | .040          | 822-7500 | \$196.00   |
| 1"         | 1-3/4"       | 6"          | .045          | 822-1000 | \$278.00   |

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## SOLID CARBIDE END MILLS

**BEEFY MILL** • C/C, SE, STRAIGHT FLUTE • 2 FLUTE

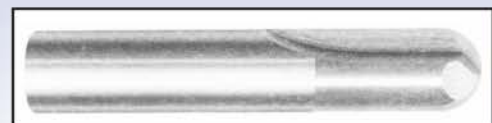


| FLUTE DIA. | SHANK DIA. | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | CATALOG NO. | 2 FLUTE PART# | UNCOATED LIST PRICE | 2 FLUTE PART# | ALTIN COATED LIST PRICE |
|------------|------------|---------------|----------------|---------------|-------------|---------------|---------------------|---------------|-------------------------|
| 1/8        | 1/8        | 1/2           | 1-1/2          | 2             | SB-2-4      | 91704         | \$11.58             | 99622         | \$15.00                 |
| 3/16       | 3/16       | 5/8           | 2              | 2             | SB-2-6      | 91708         | \$15.99             | 99623         | \$19.41                 |
| 1/4        | 1/4        | 3/4           | 2-1/2          | 2             | SB-2-8      | 91712         | \$20.20             | 99624         | \$23.62                 |
| 5/16       | 5/16       | 13/16         | 2-1/2          | 2             | SB-2-10     | 91716         | \$24.88             | 99625         | \$30.41                 |
| 3/8        | 3/8        | 1             | 2-1/2          | 2             | SB-2-12     | 91720         | \$29.49             | 99626         | \$35.03                 |
| 1/2        | 1/2        | 1             | 3              | 2             | SB-2-16     | 91728         | \$46.04             | 99627         | \$52.24                 |

## Series 783

## SOLID CARBIDE END MILLS

**BEEFY MILL** • BALL END, SE, STRAIGHT FLUTE • 2 FLUTE



| FLUTE DIA. | SHANK DIA. | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | CATALOG NO. | 2 FLUTE PART# | UNCOATED LIST PRICE | 2 FLUTE PART# | ALTIN COATED LIST PRICE |
|------------|------------|---------------|----------------|---------------|-------------|---------------|---------------------|---------------|-------------------------|
| 1/8        | 1/8        | 1/2           | 1-1/2          | 2             | RSB-2-4     | 91604         | \$14.00             | 99628         | \$17.42                 |
| 3/16       | 3/16       | 5/8           | 2              | 2             | RSB-2-6     | 91608         | \$19.23             | 99629         | \$22.65                 |
| 1/4        | 1/4        | 3/4           | 2-1/2          | 2             | RSB-2-8     | 91612         | \$24.25             | 99630         | \$27.68                 |
| 5/16       | 5/16       | 13/16         | 2-1/2          | 2             | RSB-2-10    | 91616         | \$31.02             | 99631         | \$36.55                 |
| 3/8        | 3/8        | 1             | 2-1/2          | 2             | RSB-2-12    | 91620         | \$35.43             | 99632         | \$40.96                 |
| 1/2        | 1/2        | 1             | 3              | 2             | RSB-2-16    | 91628         | \$61.20             | 99633         | \$67.40                 |

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**Series 416**

# Metalloy

**HTC** 

## SOLID CARBIDE END MILLS

**SPOON CUTTER • C/C, SE, 45° HELIX • 2 FLUTE****FOR ALUMINUM & NON-FERROUS MACHINING**

| FLUTE DIA. | SHANK DIA. | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | CATALOG NO. | 2 FLUTE PART# | UNCOATED LIST PRICE | 2 FLUTE PART# | ZrN COATED LIST PRICE |
|------------|------------|---------------|----------------|---------------|-------------|---------------|---------------------|---------------|-----------------------|
| 1/8        | 1/8        | 1/4           | 1-1/2          | 2             | AFS-2-4     | 92504         | \$11.28             | 98184         | \$14.21               |
| 1/8        | 1/8        | 1/2           | 1-1/2          | 2             | AF-2-4      | 92404         | \$12.42             | 98185         | \$15.35               |
| 3/16       | 3/16       | 5/16          | 2              | 2             | AFS-2-6     | 92508         | \$15.54             | 98186         | \$18.46               |
| 3/16       | 3/16       | 9/16          | 2              | 2             | AF-2-6      | 92408         | \$17.36             | 98187         | \$20.29               |
| 1/4        | 1/4        | 3/8           | 2-1/2          | 2             | AFS-208     | 92512         | \$20.94             | 98188         | \$23.86               |
| 1/4        | 1/4        | 3/4           | 2-1/2          | 2             | AF-2-8      | 92412         | \$23.31             | 98189         | \$26.24               |
| 1/4        | 1/4        | 1-1/8         | 3              | 2             | AFM-2-8     | 91312         | \$33.21             | 98640         | \$37.00               |
| 1/4        | 1/4        | 1-1/2         | 4              | 2             | AFL-2-8     | 91412         | \$36.28             | 98641         | \$42.67               |
| 5/16       | 5/16       | 7/16          | 2-1/2          | 2             | AFS-2-10    | 92516         | \$22.68             | 98190         | \$27.43               |
| 5/16       | 5/16       | 13/16         | 2-1/2          | 2             | AF-2-10     | 92416         | \$25.19             | 98191         | \$29.94               |
| 5/16       | 5/16       | 1-1/8         | 3              | 2             | AFM-2-10    | 91316         | \$38.03             | 98642         | \$42.78               |
| 5/16       | 5/16       | 1-5/8         | 4              | 2             | AFL-2-10    | 91416         | \$55.15             | 98643         | \$61.53               |
| 3/8        | 3/8        | 1/2           | 2-1/2          | 2             | AFS-2-12    | 92520         | \$26.44             | 98192         | \$31.19               |
| 3/8        | 3/8        | 1             | 2-1/2          | 2             | AF-2-12     | 92420         | \$29.20             | 98193         | \$33.94               |
| 3/8        | 3/8        | 1-1/8         | 3              | 2             | AFM-2-12    | 91320         | \$41.17             | 98644         | \$45.92               |
| 3/8        | 3/8        | 1-3/4         | 4              | 2             | AFL-2-12    | 91420         | \$55.77             | 98645         | \$62.16               |
| 7/16       | 7/16       | 9/16          | 2-3/4          | 2             | AFS-2-14    | 92525         | \$37.40             | 98194         | \$42.71               |
| 7/16       | 7/16       | 1             | 2-3/4          | 2             | AF-2-14     | 92425         | \$41.86             | 98195         | \$47.17               |
| 7/16       | 7/16       | 2             | 4              | 2             | AFM-2-14    | 91325         | \$64.74             | 98646         | \$73.32               |
| 7/16       | 7/16       | 3             | 6              | 2             | AFL-2-14    | 91425         | \$89.33             | 98647         | \$101.80              |
| 1/2        | 1/2        | 5/8           | 3              | 2             | AFS-2-16    | 92528         | \$42.61             | 98196         | \$48.37               |
| 1/2        | 1/2        | 1-1/4         | 3              | 2             | AF-2-16     | 92428         | \$47.31             | 98197         | \$53.07               |
| 1/2        | 1/2        | 2             | 4              | 2             | AFM-2-16    | 91328         | \$74.57             | 98648         | \$83.15               |
| 1/2        | 1/2        | 3             | 6              | 2             | AFL-2-16    | 91428         | \$124.95            | 98649         | \$37.42               |
| 5/8        | 5/8        | 3/4           | 3-1/2          | 2             | AFS-2-20    | 92530         | \$81.46             | 98198         | \$89.98               |
| 5/8        | 5/8        | 1-5/8         | 3-1/2          | 2             | AF-2-20     | 92430         | \$90.48             | 98199         | \$99.01               |
| 5/8        | 5/8        | 2-1/4         | 5              | 2             | AFM-2-20    | 91330         | \$137.04            | 98650         | \$49.52               |
| 5/8        | 5/8        | 3             | 6              | 2             | AFL-2-20    | 91430         | \$198.26            | 98651         | \$212.37              |
| 3/4        | 3/4        | 1             | 4              | 2             | AFS-2-24    | 92532         | \$114.29            | 98200         | \$127.01              |
| 3/4        | 3/4        | 1-5/8         | 4              | 2             | AF-2-24     | 92432         | \$126.95            | 98201         | \$139.67              |
| 3/4        | 3/4        | 2-1/4         | 5              | 2             | AFM-2-24    | 91332         | \$167.37            | 98652         | \$181.65              |
| 3/4        | 3/4        | 3             | 6              | 2             | AFL-2-24    | 91432         | \$195.63            | 98653         | \$213.05              |
| 1          | 1          | 1-1/4         | 4              | 2             | AFS-2-32    | 92534         | \$207.41            | 98202         | \$225.22              |
| 1          | 1          | 2             | 4              | 2             | AF-2-32     | 92434         | \$229.46            | 98203         | \$247.27              |
| 1          | 1          | 2-1/4         | 5              | 2             | AFM-2-32    | 91334         | \$261.42            | 98654         | \$280.91              |
| 1          | 1          | 3             | 6              | 2             | AFL-2-32    | 91434         | \$275.08            | 98655         | \$297.25              |

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## SOLID CARBIDE END MILLS

**SPOON CUTTER** • BALL END, SE, 45° HELIX • 2 FLUTE

FOR ALUMINUM & NON-FERROUS MACHINING



| FLUTE DIA. | SHANK DIA. | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | CATALOG NO. | 2 FLUTE PART# | UNCOATED LIST PRICE | 2 FLUTE PART# | ZrN COATED LIST PRICE |
|------------|------------|---------------|----------------|---------------|-------------|---------------|---------------------|---------------|-----------------------|
| 1/4        | 1/4        | 3/8           | 2-1/2          | 2             | ARFS-2-8    | 85412         | \$23.06             | 99887         | \$26.48               |
| 1/4        | 1/4        | 3/4           | 2-1/2          | 2             | ARF-2-8     | 85512         | \$25.63             | 99879         | \$29.05               |
| 5/16       | 5/16       | 7/16          | 2-1/2          | 2             | ARFS-2-10   | 85416         | \$25.06             | 99888         | \$30.60               |
| 5/16       | 5/16       | 13/16         | 2-1/2          | 2             | ARF-2-10    | 85516         | \$27.88             | 99880         | \$33.42               |
| 3/8        | 3/8        | 1/2           | 2-1/2          | 2             | ARFS-2-12   | 85420         | \$22.22             | 99889         | \$34.76               |
| 3/8        | 3/8        | 1             | 2-1/2          | 2             | ARF2-12     | 85520         | \$32.52             | 99881         | \$38.03               |
| 7/16       | 7/16       | 9/16          | 2-3/4          | 2             | ARFS-2-14   | 85425         | \$41.78             | 99890         | \$47.97               |
| 7/16       | 7/16       | 1             | 2-3/4          | 2             | ARF-2-14    | 85525         | \$46.42             | 99882         | \$52.61               |
| 1/2        | 1/2        | 5/8           | 3              | 2             | ARFS-2-16   | 85428         | \$47.12             | 99891         | \$53.84               |
| 1/2        | 1/2        | 1-1/4         | 3              | 2             | ARF-2-16    | 85528         | \$52.37             | 99883         | \$59.09               |
| 5/8        | 5/8        | 3/4           | 3-1/2          | 2             | ARFS-2-20   | 85430         | \$90.64             | 99892         | \$100.59              |
| 5/8        | 5/8        | 1-5/8         | 3-1/2          | 2             | ARF-2-20    | 85530         | \$100.72            | 99884         | \$110.66              |
| 3/4        | 3/4        | 1             | 4              | 2             | ARFS-2-24   | 85432         | \$127.46            | 99893         | \$142.29              |
| 3/4        | 3/4        | 1-5/8         | 4              | 2             | ARF-2-24    | 85532         | \$141.62            | 99885         | \$156.45              |
| 1          | 1          | 1-1/4         | 4              | 2             | ARFS-2-32   | 85434         | \$228.06            | 99894         | \$248.84              |
| 1          | 1          | 2             | 4              | 2             | ARF-2-32    | 85534         | \$251.05            | 99886         | \$271.83              |

## Series 422

## SOLID CARBIDE END MILLS

**SPOON CUTTER** • C/C, SE, 60° HELIX • 3 & 4 FLUTE

EXCELLENT FOR HIGH SPEED FINISHING



| FLUTE DIA. | SHANK DIA. | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | CATALOG NO. | 4 FLUTE PART# | UNCOATED LIST PRICE | 4 FLUTE PART# | ZrN COATED LIST PRICE |
|------------|------------|---------------|----------------|---------------|-------------|---------------|---------------------|---------------|-----------------------|
| 1/4        | 1/4        | 3/4           | 2-1/2          | 3             | HH-3-8      | 93112         | \$15.99             | 99232         | \$19.41               |
| 5/16       | 5/16       | 13/16         | 2-1/2          | 3             | HH-3-10     | 93116         | \$26.27             | 99233         | \$31.79               |
| 3/8        | 3/8        | 1             | 2-1/2          | 3             | HH-3-12     | 93120         | \$29.78             | 99234         | \$35.31               |
| 7/16       | 7/16       | 1             | 2-3/4          | 3             | HH-3-14     | 93125         | \$34.44             | 99235         | \$39.62               |
| 1/2        | 1/2        | 1             | 3              | 3             | HH-3-16     | 93128         | \$42.87             | 99236         | \$49.59               |
| 9/16       | 9/16       | 1-1/4         | 3-1/2          | 3             | HH-3-18     | 93129         | \$74.59             | 99237         | \$84.54               |
| 5/8        | 5/8        | 1-1/4         | 3-1/2          | 3             | HH-3-20     | 93130         | \$75.34             | 99238         | \$85.28               |
| 3/4        | 3/4        | 1-1/2         | 4              | 3             | HH-3-24     | 93132         | \$106.85            | 99239         | \$121.68              |
| 3/4        | 3/4        | 1-1/2         | 4              | 4             | HH-4-24     | 93632         | \$106.85            | 99240         | \$121.68              |
| 1          | 1          | 1-1/2         | 4              | 3             | HH-3-32     | 93134         | \$176.75            | 99241         | \$197.52              |
| 1          | 1          | 1-1/2         | 4              | 4             | HH-4-32     | 93634         | \$176.75            | 99242         | \$197.52              |

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Series 410

*Metalloy*HTC **SOLID CARBIDE END MILLS****SPOON CUTTER • C/C, SE, 38° HELIX • 3 FLUTE**  
**FOR ALUMINUM & NON-FERROUS MACHINING**

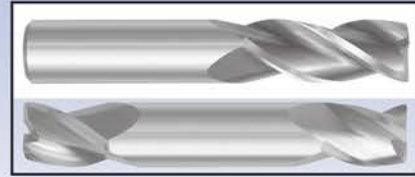
| FLUTE DIA. | SHANK DIA. | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | CATALOG NO. | 3 FLUTE PART# | UNCOATED LIST PRICE | 3 FLUTE PART# | ZrN COATED LIST PRICE |
|------------|------------|---------------|----------------|---------------|-------------|---------------|---------------------|---------------|-----------------------|
| 1/8        | 1/8        | 1/4           | 1-1/3          | 3             | AFS-3-4     | 92304         | \$11.72             | 99106         | \$15.14               |
| 1/8        | 1/8        | 1/2           | 1-1/2          | 3             | AF-3-4      | 92204         | \$12.41             | 99098         | \$15.83               |
| 3/16       | 3/16       | 5/16          | 2              | 3             | AFS-3-6     | 92308         | \$16.12             | 99107         | \$19.54               |
| 3/16       | 3/16       | 9/16          | 2              | 3             | AF-3-6      | 92208         | \$17.36             | 99099         | \$20.78               |
| 1/4        | 1/4        | 3/8           | 2-1/2          | 3             | AFS-3-8     | 92312         | \$21.75             | 99108         | \$25.17               |
| 1/4        | 1/4        | 3/4           | 2-1/2          | 3             | AF-3-8      | 92212         | \$23.31             | 99100         | \$26.73               |
| 1/4        | 1/4        | 1-1/8         | 3              | 3             | AFM-3-8     | 91112         | \$33.21             | 99656         | \$37.62               |
| 1/4        | 1/4        | 1-1/2         | 4              | 3             | AFL-3-8     | 91212         | \$36.28             | 99657         | \$43.75               |
| 5/16       | 5/16       | 1-1/8         | 3              | 3             | AFM-3-10    | 91116         | \$34.71             | 99658         | \$40.22               |
| 5/16       | 5/16       | 1-5/8         | 4              | 3             | AFL-3-10    | 91216         | \$45.12             | 99659         | \$52.58               |
| 3/8        | 3/8        | 1/2           | 2-1/2          | 3             | AFS-3-12    | 92316         | \$32.02             | 99109         | \$37.55               |
| 3/8        | 3/8        | 1             | 2-1/2          | 3             | AF-3-12     | 92216         | \$34.27             | 99101         | \$39.80               |
| 3/8        | 3/8        | 1-1/8         | 3              | 3             | AFM-3-12    | 91120         | \$43.24             | 99660         | \$48.77               |
| 3/8        | 3/8        | 1-3/4         | 4              | 3             | AFL-3-12    | 91220         | \$52.38             | 99661         | \$59.84               |
| 7/16       | 7/16       | 2             | 4              | 3             | AFM-3-14    | 91125         | \$64.74             | 99662         | \$74.75               |
| 7/16       | 7/16       | 3             | 6              | 3             | AFL-3-14    | 91225         | \$89.33             | 99663         | \$103.88              |
| 1/2        | 1/2        | 5/8           | 3              | 3             | AFS-3-16    | 92320         | \$48.96             | 99110         | \$55.68               |
| 1/2        | 1/2        | 1-1/4         | 3              | 3             | AF-3-16     | 92220         | \$52.38             | 99102         | \$59.11               |
| 1/2        | 1/2        | 2             | 4              | 3             | AFM-3-16    | 91128         | \$74.57             | 99664         | \$84.58               |
| 1/2        | 1/2        | 3             | 6              | 3             | AFL-3-16    | 91228         | \$132.97            | 99665         | \$147.53              |
| 5/8        | 5/8        | 3/4           | 3-1/2          | 3             | AFS-3-20    | 92324         | \$92.29             | 99111         | \$102.22              |
| 5/8        | 5/8        | 1-5/8         | 3-1/2          | 3             | AF-3-20     | 92224         | \$98.76             | 99103         | \$108.69              |
| 5/8        | 5/8        | 2-1/4         | 5              | 3             | AFM-3-20    | 91130         | \$137.04            | 99666         | \$151.60              |
| 5/8        | 5/8        | 3             | 6              | 3             | AFL-3-20    | 91230         | \$210.92            | 99667         | \$227.38              |
| 3/4        | 3/4        | 1             | 4              | 3             | AFS-3-24    | 92328         | \$129.97            | 99112         | \$144.80              |
| 3/4        | 3/4        | 1-5/8         | 4              | 3             | AF-3-24     | 92228         | \$139.05            | 99104         | \$153.88              |
| 3/4        | 3/4        | 2-1/4         | 5              | 3             | AFM-3-24    | 91132         | \$167.37            | 99668         | \$184.02              |
| 3/4        | 3/4        | 3             | 6              | 3             | AFL-3-24    | 91232         | \$179.41            | 99669         | \$199.73              |
| 1          | 1          | 1-1/4         | 4              | 3             | AFS-3-32    | 92332         | \$207.21            | 99113         | \$228.00              |
| 1          | 1          | 2             | 4              | 3             | AF-3-32     | 92232         | \$229.46            | 99105         | \$250.25              |
| 1          | 1          | 2-1/4         | 5              | 3             | AFM-3-32    | 91134         | \$261.42            | 99670         | \$284.15              |
| 1          | 1          | 3             | 6              | 3             | AFL-3-32    | 91234         | \$275.08            | 99671         | \$300.95              |

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## SOLID CARBIDE END MILLS

**SPOON CUTTER** • C/C, SE & DE, 35° HELIX • 3 FLUTE

FOR STAINLESS STEEL MACHINING



| FLUTE DIA. | SHANK DIA. | LENGTH OF CUT | OVERALL LENGTH | STD RADIUS | NO. OF FLUTES | CATALOG NO. | 3 FLUTE PART# | UNCOATED LIST PRICE | 3 FLUTE PART# | ALTIM COATED LIST PRICE |
|------------|------------|---------------|----------------|------------|---------------|-------------|---------------|---------------------|---------------|-------------------------|
| 1/8        | 1/8        | 1/4           | 1-1/2          | .008-.010  | 3             | SS-3-4      | 94860         | \$17.80             | 99017         | \$21.22                 |
| 1/8        | 1/8        | 1/2           | 1-1/2          | .008-.010  | 3             | S-3-4       | 94644         | \$18.88             | 99025         | \$22.31                 |
| 3/16       | 3/16       | 5/16          | 2              | .008-.010  | 3             | SS-3-6      | 94864         | \$21.00             | 99018         | \$24.43                 |
| 3/16       | 3/16       | 9/16          | 2              | .008-.010  | 3             | S-3-6       | 94648         | \$22.24             | 99026         | \$25.66                 |
| 1/4        | 1/4        | 3/8           | 2-1/2          | .015-.020  | 3             | SS-3-8      | 94868         | \$25.24             | 99019         | \$28.65                 |
| 1/4        | 1/4        | 3/4           | 2-1/2          | .015-.020  | 3             | S-3-8       | 94652         | \$26.53             | 99027         | \$29.95                 |
| 3/8        | 3/8        | 1/2           | 2-1/2          | .015-.020  | 3             | SS-3-12     | 94876         | \$38.26             | 99020         | \$43.79                 |
| 3/8        | 3/8        | 1             | 2-1/2          | .015-.020  | 3             | S-3-12      | 94660         | \$40.19             | 99028         | \$45.72                 |
| 1/2        | 1/2        | 5/8           | 3              | .030-.035  | 3             | SS-3-16     | 94880         | \$60.22             | 99021         | \$66.94                 |
| 1/2        | 1/2        | 1-1/4         | 3              | .030-.035  | 3             | S-3-16      | 94664         | \$62.66             | 99029         | \$69.38                 |
| 5/8        | 5/8        | 3/4           | 3-1/2          | .030-.035  | 3             | SS-3-20     | 94882         | \$108.16            | 99022         | \$118.09                |
| 5/8        | 5/8        | 1-5/8         | 3-1/2          | .030-.035  | 3             | S-3-20      | 94666         | \$115.09            | 99030         | \$125.03                |
| 3/4        | 3/4        | 1             | 4              | .030-.035  | 3             | SS-3-24     | 94884         | \$153.78            | 99023         | \$168.61                |
| 3/4        | 3/4        | 1-5/8         | 4              | .030-.035  | 3             | S-3-24      | 94668         | \$163.86            | 99031         | \$178.69                |
| 1          | 1          | 1-1/4         | 4              | .030-.035  | 3             | SS-3-32     | 94886         | \$258.22            | 99024         | \$278.99                |
| 1          | 1          | 2             | 4              | .030-.035  | 3             | S-3-32      | 94670         | \$274.78            | 99032         | \$295.55                |

### Series 414

## SOLID CARBIDE END MILLS

**SPOON CUTTER** • BALL END, SE, 35° HELIX • 3 FLUTE

FOR STAINLESS STEEL MACHINING



| FLUTE DIA. | SHANK DIA. | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | CATALOG NO. | 3 FLUTE PART# | UNCOATED LIST PRICE | 3 FLUTE PART# | ALTIM COATED LIST PRICE |
|------------|------------|---------------|----------------|---------------|-------------|---------------|---------------------|---------------|-------------------------|
| 1/8        | 1/8        | 1/4           | 1-1/2          | 3             | RSS-3-4     | 94060         | \$26.88             | 99001         | \$39.31                 |
| 1/8        | 1/8        | 1/2           | 1-1/2          | 3             | RS-3-4      | 93704         | \$28.77             | 99009         | \$32.19                 |
| 3/16       | 3/16       | 5/16          | 2              | 3             | RSS-3-6     | 94064         | \$34.81             | 99002         | \$38.23                 |
| 3/16       | 3/16       | 9/16          | 2              | 3             | RS-3-6      | 93708         | \$37.25             | 99010         | \$40.67                 |
| 1/4        | 1/4        | 3/8           | 2-1/2          | 3             | RSS-3-8     | 94068         | \$41.22             | 99003         | \$44.63                 |
| 1/4        | 1/4        | 3/4           | 2-1/2          | 3             | RS-3-8      | 93712         | \$44.09             | 99011         | \$47.52                 |
| 3/8        | 3/8        | 1/2           | 2-1/2          | 3             | RSS-3-12    | 94076         | \$49.44             | 99004         | \$54.96                 |
| 3/8        | 3/8        | 1             | 2-1/2          | 3             | RS-3-12     | 93720         | \$52.89             | 99012         | \$58.41                 |
| 1/2        | 1/2        | 5/8           | 3              | 3             | RSS-3-16    | 94080         | \$65.25             | 99005         | \$71.98                 |
| 1/2        | 1/2        | 1-1/4         | 3              | 3             | RS-3-16     | 93724         | \$69.83             | 99013         | \$76.55                 |
| 5/8        | 5/8        | 3/4           | 3-1/2          | 3             | RSS-3-20    | 94082         | \$121.48            | 99006         | \$131.41                |
| 5/8        | 5/8        | 1-5/8         | 3-1/2          | 3             | RS-3-20     | 93726         | \$129.97            | 99014         | \$139.91                |
| 3/4        | 3/4        | 1             | 4              | 3             | RSS-3-24    | 94084         | \$180.65            | 99007         | \$195.48                |
| 3/4        | 3/4        | 1-5/8         | 4              | 3             | RS-3-24     | 93728         | \$193.24            | 99015         | \$208.13                |
| 1          | 1          | 1-1/4         | 4              | 3             | RSS-3-32    | 94086         | \$296.68            | 99008         | \$317.46                |
| 1          | 1          | 2             | 4              | 3             | RS-3-32     | 93730         | \$317.46            | 99016         | \$338.24                |

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## Series 650

Metalloy

HTC



## SOLID CARBIDE TAPERED END MILLS

## 3 FLUTE, C/C, SE, TAPERED END MILLS

| Taper Per Side | Tip Dia. | Shank Dia. | Length of Cut | Overall Length | No. of Flutes | Reference No. | Brite   |       | TiN Coated |       | TiCN Coated |       | TiAlN Coated |       |
|----------------|----------|------------|---------------|----------------|---------------|---------------|---------|-------|------------|-------|-------------|-------|--------------|-------|
|                |          |            |               |                |               |               | EDP No. | Price | EDP No.    | Price | EDP No.     | Price | EDP No.      | Price |
| 1/2            | 1/16     | 1/8        | 1             | 3              | 3             | TC1/2-AA-4C   | 96414   | 42.23 | 97345      | 43.79 | 98345       | 44.57 | 99345        | 44.96 |
| 1/2            | 1/16     | 1/8        | 1/2           | 2-1/2          | 3             | TC1/2-AA-2C   | 96410   | 32.81 | 97343      | 34.37 | 98343       | 35.15 | 99343        | 35.54 |
| 1/2            | 1/16     | 1/8        | 3/4           | 2-1/2          | 3             | TC1/2-AA-3C   | 96412   | 34.40 | 97344      | 35.96 | 98344       | 36.74 | 99344        | 37.13 |
| 1/2            | 1/32     | 1/8        | 1/2           | 2-1/2          | 3             | TC1/2-AAA-2C  | 96404   | 30.44 | 97340      | 32.00 | 98340       | 32.78 | 99340        | 33.17 |
| 1/2            | 1/32     | 1/8        | 1/4           | 2-1/2          | 3             | TC1/2-AAA-1C  | 96402   | 28.49 | 97339      | 30.05 | 98339       | 30.83 | 99339        | 31.22 |
| 1/2            | 1/4      | 3/8        | 1-1/4         | 3              | 3             | TC1/2-D-5C    | 96616   | 43.01 | 97258      | 45.53 | 98258       | 46.79 | 99258        | 47.42 |
| 1/2            | 1/4      | 3/8        | 3/4           | 2-1/2          | 3             | TC1/2-D-3C    | 96614   | 40.82 | 97257      | 43.34 | 98257       | 44.60 | 99257        | 45.23 |
| 1/2            | 1/8      | 1/4        | 1             | 3              | 3             | TC1/2-B-4C    | 96608   | 34.99 | 97254      | 37.00 | 98254       | 38.01 | 99254        | 38.51 |
| 1/2            | 1/8      | 1/4        | 3/4           | 2-1/2          | 3             | TC1/2-B-3C    | 96606   | 28.86 | 97253      | 30.42 | 98253       | 31.20 | 99253        | 31.59 |
| 1/2            | 3/16     | 1/4        | 1-1/4         | 3              | 3             | TC1/2-C-5C    | 96612   | 36.45 | 97256      | 38.46 | 98256       | 39.47 | 99256        | 39.97 |
| 1/2            | 3/16     | 1/4        | 3/4           | 2-1/2          | 3             | TC1/2-C-3C    | 96610   | 28.86 | 97255      | 30.42 | 98255       | 31.20 | 99255        | 31.59 |
| 1/2            | 3/32     | 1/8        | 3/4           | 2-1/2          | 3             | TC1/2-A-3C    | 96604   | 26.24 | 97252      | 27.80 | 98252       | 28.58 | 99252        | 28.97 |
| 1/2            | 3/64     | 1/8        | 1/2           | 2-1/2          | 3             | TC1/2-AAX-2C  | 96408   | 30.85 | 97342      | 32.41 | 98342       | 33.19 | 99342        | 33.58 |
| 1/2            | 3/64     | 1/8        | 1/4           | 2-1/2          | 3             | TC1/2-AAX-1C  | 96406   | 28.86 | 97341      | 30.42 | 98341       | 31.20 | 99341        | 31.59 |
| 1/2            | 5/64     | 1/8        | 1             | 3              | 3             | TC1/2-AXA-4C  | 96420   | 42.63 | 97348      | 44.19 | 98348       | 44.97 | 99348        | 45.36 |
| 1/2            | 5/64     | 1/8        | 1/2           | 2-1/2          | 3             | TC1/2-AXA-2C  | 96416   | 33.62 | 97346      | 35.18 | 98346       | 35.96 | 99346        | 36.35 |
| 1/2            | 5/64     | 1/8        | 3/4           | 2-1/2          | 3             | TC1/2-AXA-3C  | 96418   | 32.81 | 97347      | 34.37 | 98347       | 35.15 | 99347        | 35.54 |
| 1              | 1/16     | 1/8        | 1             | 3              | 3             | TC1-AA-4C     | 96434   | 42.63 | 97355      | 44.19 | 98355       | 44.97 | 99355        | 45.36 |
| 1              | 1/16     | 1/8        | 1/2           | 2-1/2          | 3             | TC1-AA-2C     | 96430   | 33.21 | 97353      | 34.77 | 98353       | 35.55 | 99353        | 35.94 |
| 1              | 1/16     | 1/8        | 3/4           | 2-1/2          | 3             | TC1-AA-3C     | 96432   | 34.80 | 97354      | 36.36 | 98354       | 37.14 | 99354        | 37.53 |
| 1              | 1/32     | 1/8        | 1/2           | 2-1/2          | 3             | TC1-AAA-2C    | 96424   | 30.85 | 97350      | 32.41 | 98350       | 33.19 | 99350        | 33.58 |
| 1              | 1/32     | 1/8        | 1/4           | 2-1/2          | 3             | TC1-AAA-1C    | 96422   | 28.86 | 97349      | 30.42 | 98349       | 31.20 | 99349        | 31.59 |
| 1              | 1/4      | 3/8        | 1-1/4         | 3              | 3             | TC1-D-5C      | 96636   | 45.41 | 97268      | 47.93 | 98268       | 49.19 | 99268        | 49.82 |
| 1              | 1/4      | 3/8        | 2             | 4              | 3             | TC1-D-8C      | 96638   | 62.55 | 97269      | 65.95 | 98269       | 67.65 | 99269        | 68.50 |
| 1              | 1/4      | 3/8        | 3/4           | 2-1/2          | 3             | TC1-D-3C      | 96634   | 40.82 | 97267      | 43.34 | 98267       | 44.60 | 99267        | 45.23 |
| 1              | 1/8      | 1/4        | 1             | 3              | 3             | TC1-B-4C      | 96624   | 34.99 | 97262      | 37.00 | 98262       | 38.01 | 99262        | 38.51 |
| 1              | 1/8      | 1/4        | 1-1/2         | 3              | 3             | TC1-B-6C      | 96626   | 39.80 | 97263      | 41.81 | 98263       | 42.82 | 99263        | 43.32 |
| 1              | 1/8      | 1/4        | 3/4           | 2-1/2          | 3             | TC1-B-3C      | 96622   | 33.17 | 97261      | 34.73 | 98261       | 35.51 | 99261        | 35.90 |
| 1              | 3/16     | 1/4        | 1-1/4         | 3              | 3             | TC1-C-5C      | 96630   | 37.91 | 97265      | 39.92 | 98265       | 40.93 | 99265        | 41.43 |
| 1              | 3/16     | 1/4        | 1-3/4         | 3-1/2          | 3             | TC1-C-7C      | 96632   | 49.53 | 97266      | 51.54 | 98266       | 52.55 | 99266        | 53.05 |
| 1              | 3/16     | 1/4        | 3/4           | 2-1/2          | 3             | TC1-C-3C      | 96628   | 33.17 | 97264      | 34.73 | 98264       | 35.51 | 99264        | 35.90 |
| 1              | 3/32     | 1/4        | 1             | 3              | 3             | TC1-A-4C      | 96620   | 29.59 | 97260      | 31.60 | 98260       | 32.61 | 99260        | 33.11 |
| 1              | 3/32     | 1/8        | 1/2           | 2-1/2          | 3             | TC1-A-2C      | 96618   | 26.97 | 97259      | 28.53 | 98259       | 29.31 | 99259        | 29.70 |
| 1              | 3/64     | 1/8        | 1/2           | 2-1/2          | 3             | TC1-AAX-2C    | 96428   | 31.23 | 97352      | 32.79 | 98352       | 33.57 | 99352        | 33.96 |
| 1              | 3/64     | 1/8        | 1/4           | 2-1/2          | 3             | TC1-AAX-1C    | 96426   | 29.27 | 97351      | 30.83 | 98351       | 31.61 | 99351        | 32.00 |
| 1              | 5/64     | 1/8        | 1             | 3              | 3             | TC1-AXA-4C    | 96440   | 43.00 | 97358      | 44.56 | 98358       | 45.34 | 99358        | 45.73 |
| 1              | 5/64     | 1/8        | 1/2           | 2-1/2          | 3             | TC1-AXA-2C    | 96436   | 33.99 | 97356      | 35.55 | 98356       | 36.33 | 99356        | 36.72 |
| 1              | 5/64     | 1/8        | 3/4           | 2-1/2          | 3             | TC1-AXA-3C    | 96438   | 33.21 | 97357      | 34.77 | 98357       | 35.55 | 99357        | 35.94 |
| 1-1/2          | 1/16     | 3/16       | 1             | 3              | 3             | TC12-AA-4C    | 96454   | 43.40 | 97365      | 44.96 | 98365       | 45.74 | 99365        | 46.13 |
| 1-1/2          | 1/16     | 1/8        | 1/2           | 2-1/2          | 3             | TC12-AA-2C    | 96450   | 33.62 | 97363      | 35.18 | 98363       | 35.96 | 99363        | 36.35 |
| 1-1/2          | 1/16     | 1/8        | 3/4           | 2-1/2          | 3             | TC12-AA-3C    | 96452   | 35.17 | 97364      | 36.73 | 98364       | 37.51 | 99364        | 37.90 |
| 1-1/2          | 1/32     | 1/8        | 1/2           | 2-1/2          | 3             | TC12-AAA-2C   | 96444   | 31.23 | 97360      | 32.79 | 98360       | 33.57 | 99360        | 33.96 |
| 1-1/2          | 1/32     | 1/8        | 1/4           | 2-1/2          | 3             | TC12-AAA-1C   | 96442   | 29.27 | 97359      | 30.83 | 98359       | 31.61 | 99359        | 32.00 |
| 1-1/2          | 1/4      | 3/8        | 1-1/4         | 3              | 3             | TC12-D-5C     | 96652   | 45.41 | 97276      | 47.93 | 98276       | 49.19 | 99276        | 49.82 |
| 1-1/2          | 1/4      | 3/8        | 3/4           | 2-1/2          | 3             | TC12-D-3C     | 96650   | 40.82 | 97275      | 43.34 | 98275       | 44.60 | 99275        | 45.23 |
| 1-1/2          | 1/8      | 1/4        | 1-1/2         | 3              | 3             | TC12-B-6C     | 96644   | 40.10 | 97272      | 42.11 | 98272       | 43.12 | 99272        | 43.62 |
| 1-1/2          | 1/8      | 1/4        | 3/4           | 2-1/2          | 3             | TC12-B-3C     | 96642   | 33.17 | 97271      | 34.73 | 98271       | 35.51 | 99271        | 35.90 |
| 1-1/2          | 3/16     | 3/8        | 1-1/4         | 3              | 3             | TC12-C-5C     | 96646   | 43.01 | 97273      | 45.53 | 98273       | 46.79 | 99273        | 47.42 |
| 1-1/2          | 3/16     | 3/8        | 1-3/4         | 3-1/2          | 3             | TC12-C-7C     | 96648   | 45.41 | 97274      | 47.93 | 98274       | 49.19 | 99274        | 49.82 |





### SOLID CARBIDE TAPERED END MILLS

#### 3 FLUTE, C/C, SE, TAPERED END MILLS

| Taper<br>Per<br>Side | Tip<br>Dia. | Shank<br>Dia. | Length<br>of Cut | Overall<br>Length | No. of<br>Flutes | Reference<br>No. | Brite   |       | TiN Coated |       | TiCN Coated |       | TiAlN Coated |       |
|----------------------|-------------|---------------|------------------|-------------------|------------------|------------------|---------|-------|------------|-------|-------------|-------|--------------|-------|
|                      |             |               |                  |                   |                  |                  | EDP No. | Price | EDP No.    | Price | EDP No.     | Price | EDP No.      | Price |
| 1-1/2                | 3/32        | 1/4           | 1                | 3                 | 3                | TC12-A-4C        | 96640   | 29.59 | 97270      | 31.60 | 98270       | 32.61 | 99270        | 33.11 |
| 1-1/2                | 3/64        | 1/8           | 1/2              | 2-1/2             | 3                | TC12-AAX-2C      | 96448   | 31.63 | 97362      | 33.19 | 98362       | 33.97 | 99362        | 34.36 |
| 1-1/2                | 3/64        | 1/8           | 1/4              | 2-1/2             | 3                | TC12-AAX-1C      | 96446   | 29.67 | 97361      | 31.23 | 98361       | 32.01 | 99361        | 32.40 |
| 1-1/2                | 5/64        | 3/16          | 1                | 3                 | 3                | TC12-AXA-4C      | 96460   | 43.40 | 97368      | 44.96 | 98368       | 45.74 | 99368        | 46.13 |
| 1-1/2                | 5/64        | 1/8           | 1/2              | 2-1/2             | 3                | TC12-AXA-2C      | 96456   | 34.40 | 97366      | 35.96 | 98366       | 36.74 | 99366        | 37.13 |
| 1-1/2                | 5/64        | 1/8           | 3/4              | 2-1/2             | 3                | TC12-AXA-3C      | 96458   | 33.62 | 97367      | 35.18 | 98367       | 35.96 | 99367        | 36.35 |
| 2                    | 1/16        | 3/16          | 1                | 3                 | 3                | TC2-AA-4C        | 96520   | 43.81 | 97375      | 45.37 | 98375       | 46.15 | 99375        | 46.54 |
| 2                    | 1/16        | 1/8           | 1/2              | 2-1/2             | 3                | TC2-AA-2C        | 96516   | 33.99 | 97373      | 35.55 | 98373       | 36.33 | 99373        | 36.72 |
| 2                    | 1/16        | 1/8           | 3/4              | 2-1/2             | 3                | TC2-AA-3C        | 96518   | 35.57 | 97374      | 37.13 | 98374       | 37.91 | 99374        | 38.30 |
| 2                    | 1/32        | 1/8           | 1/2              | 2-1/2             | 3                | TC2-AAA-2C       | 96510   | 31.63 | 97370      | 33.19 | 98370       | 33.97 | 99370        | 34.36 |
| 2                    | 1/32        | 1/8           | 1/4              | 2-1/2             | 3                | TC2-AAA-1C       | 96508   | 29.67 | 97369      | 31.23 | 98369       | 32.01 | 99369        | 32.40 |
| 2                    | 1/4         | 3/8           | 1-1/4            | 3                 | 3                | TC2-D-5C         | 96670   | 45.41 | 97285      | 47.93 | 98285       | 49.19 | 99285        | 49.82 |
| 2                    | 1/4         | 1/2           | 2                | 4                 | 3                | TC2-D-8C         | 96672   | 62.55 | 97286      | 67.12 | 98286       | 69.40 | 99286        | 70.54 |
| 2                    | 1/4         | 3/8           | 3/4              | 2-1/2             | 3                | TC2-D-3C         | 96668   | 40.82 | 97284      | 43.34 | 98284       | 44.60 | 99284        | 45.23 |
| 2                    | 1/8         | 1/4           | 1-1/4            | 3                 | 3                | TC2-B-5C         | 96660   | 35.72 | 97280      | 37.73 | 98280       | 38.74 | 99280        | 39.24 |
| 2                    | 1/8         | 1/4           | 3/4              | 2-1/2             | 3                | TC2-B-3C         | 96658   | 33.17 | 97279      | 34.73 | 98279       | 35.51 | 99279        | 35.90 |
| 2                    | 3/16        | 3/8           | 1-1/4            | 3                 | 3                | TC2-C-5C         | 96664   | 37.91 | 97282      | 40.43 | 98282       | 41.69 | 99282        | 42.32 |
| 2                    | 3/16        | 3/8           | 1-3/4            | 3-1/2             | 3                | TC2-C-7C         | 96666   | 49.46 | 97283      | 51.98 | 98283       | 53.24 | 99283        | 53.87 |
| 2                    | 3/16        | 1/4           | 3/4              | 2-1/2             | 3                | TC2-C-3C         | 96662   | 34.26 | 97281      | 35.82 | 98281       | 36.60 | 99281        | 36.99 |
| 2                    | 3/32        | 1/4           | 1                | 3                 | 3                | TC2-A-4C         | 96656   | 34.26 | 97278      | 36.27 | 98278       | 37.28 | 99278        | 37.78 |
| 2                    | 3/32        | 1/4           | 3/4              | 2-1/2             | 3                | TC2-A-3C         | 96654   | 31.59 | 97277      | 33.15 | 98277       | 33.93 | 99277        | 34.32 |
| 2                    | 3/64        | 1/8           | 1/2              | 2-1/2             | 3                | TC2-AAX-2C       | 96514   | 28.49 | 97372      | 30.05 | 98372       | 30.83 | 99372        | 31.22 |
| 2                    | 3/64        | 1/8           | 1/4              | 2-1/2             | 3                | TC2-AAX-1C       | 96512   | 30.04 | 97371      | 31.60 | 98371       | 32.38 | 99371        | 32.77 |
| 2                    | 5/64        | 3/16          | 1                | 3                 | 3                | TC2-AXA-4C       | 96526   | 43.81 | 97378      | 45.37 | 98378       | 46.15 | 99378        | 46.54 |
| 2                    | 5/64        | 1/8           | 1/2              | 2-1/2             | 3                | TC2-AXA-2C       | 96522   | 34.80 | 97376      | 36.36 | 98376       | 37.14 | 99376        | 37.53 |
| 2                    | 5/64        | 3/16          | 3/4              | 2-1/2             | 3                | TC2-AXA-3C       | 96524   | 37.57 | 97377      | 39.13 | 98377       | 39.91 | 99377        | 40.30 |
| 3                    | 1/16        | 3/16          | 1                | 3                 | 3                | TC3-AA-4C        | 96540   | 44.21 | 97385      | 45.77 | 98385       | 46.55 | 99385        | 46.94 |
| 3                    | 1/16        | 1/8           | 1/2              | 2-1/2             | 3                | TC3-AA-2C        | 96536   | 34.40 | 97383      | 35.96 | 98383       | 36.74 | 99383        | 37.13 |
| 3                    | 1/16        | 3/16          | 3/4              | 2-1/2             | 3                | TC3-AA-3C        | 96538   | 35.98 | 97384      | 37.54 | 98384       | 38.32 | 99384        | 38.71 |
| 3                    | 1/32        | 1/8           | 1/2              | 2-1/2             | 3                | TC3-AAA-2C       | 96530   | 32.04 | 97380      | 33.60 | 98380       | 34.38 | 99380        | 34.77 |
| 3                    | 1/32        | 1/8           | 1/4              | 2-1/2             | 3                | TC3-AAA-1C       | 96528   | 30.04 | 97379      | 31.60 | 98379       | 32.38 | 99379        | 32.77 |
| 3                    | 1/4         | 3/8           | 1-1/4            | 3                 | 3                | TC3-D-5C         | 96718   | 45.41 | 97298      | 47.93 | 98298       | 49.19 | 99298        | 49.82 |
| 3                    | 1/4         | 1/2           | 2                | 4                 | 3                | TC3-D-8C         | 96720   | 62.55 | 97299      | 67.12 | 98299       | 69.40 | 99299        | 70.54 |
| 3                    | 1/4         | 3/8           | 3/4              | 2-1/2             | 3                | TC3-D-3C         | 96716   | 40.82 | 97297      | 43.34 | 98297       | 44.60 | 99297        | 45.23 |
| 3                    | 1/8         | 1/4           | 1                | 3                 | 3                | TC3-B-4C         | 96680   | 34.63 | 97290      | 36.64 | 98290       | 37.65 | 99290        | 38.15 |
| 3                    | 1/8         | 3/8           | 1-1/2            | 3-1/2             | 3                | TC3-B-6C         | 96682   | 45.41 | 97291      | 47.93 | 98291       | 49.19 | 99291        | 49.82 |
| 3                    | 1/8         | 3/8           | 2                | 3-1/2             | 3                | TC3-B-8C         | 96706   | 55.40 | 97292      | 57.92 | 98292       | 59.18 | 99292        | 59.81 |
| 3                    | 1/8         | 1/4           | 3/4              | 2-1/2             | 3                | TC3-B-3C         | 96678   | 32.81 | 97289      | 34.37 | 98289       | 35.15 | 99289        | 35.54 |
| 3                    | 3/16        | 3/8           | 1-1/4            | 3                 | 3                | TC3-C-5C         | 96714   | 45.41 | 97296      | 47.93 | 98296       | 49.19 | 99296        | 49.82 |
| 3                    | 3/16        | 3/8           | 3/4              | 2-1/2             | 3                | TC3-C-3C         | 96712   | 40.82 | 97295      | 43.34 | 98295       | 44.60 | 99295        | 45.23 |
| 3                    | 3/32        | 1/4           | 1                | 3                 | 3                | TC3-A-4C         | 96674   | 33.90 | 97287      | 35.91 | 98287       | 36.92 | 99287        | 37.42 |
| 3                    | 3/32        | 1/4           | 1-1/2            | 3                 | 3                | TC3-A-6C         | 96676   | 40.10 | 97288      | 42.11 | 98288       | 43.12 | 99288        | 43.62 |
| 3                    | 3/64        | 1/8           | 1/2              | 2-1/2             | 3                | TC3-AAX-2C       | 96534   | 32.44 | 97382      | 34.00 | 98382       | 34.78 | 99382        | 35.17 |
| 3                    | 3/64        | 1/8           | 1/4              | 2-1/2             | 3                | TC3-AAX-1C       | 96532   | 30.44 | 97381      | 32.00 | 98381       | 32.78 | 99381        | 33.17 |
| 3                    | 5/32        | 3/8           | 1-1/4            | 3                 | 3                | TC3-BX-5C        | 96708   | 43.01 | 97293      | 45.53 | 98293       | 46.79 | 99293        | 47.42 |
| 3                    | 5/32        | 3/8           | 1-3/4            | 3-1/2             | 3                | TC3-BX-7C        | 96710   | 54.53 | 97294      | 57.05 | 98294       | 58.31 | 99294        | 58.94 |
| 3                    | 5/64        | 3/16          | 1                | 3                 | 3                | TC3-AXA-4C       | 96546   | 44.21 | 97388      | 45.77 | 98388       | 46.55 | 99388        | 46.94 |
| 3                    | 5/64        | 3/16          | 1/2              | 2-1/2             | 3                | TC3-AXA-2C       | 96542   | 35.17 | 97386      | 36.73 | 98386       | 37.51 | 99386        | 37.90 |
| 3                    | 5/64        | 3/16          | 3/4              | 2-1/2             | 3                | TC3-AXA-3C       | 96544   | 37.94 | 97387      | 39.50 | 98387       | 40.28 | 99387        | 40.67 |

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## Series 650

Metalloy

HTC

## SOLID CARBIDE TAPERED END MILLS

## 3 FLUTE, C/C, SE, TAPERED END MILLS

| Taper<br>Per<br>Side | Tip<br>Dia. | Shank<br>Dia. | Length<br>of Cut | Overall<br>Length | No. of<br>Flutes | Reference<br>No. | Brite   |        | TiN Coated |        | TiCN Coated |        | TiAlN Coated |        |
|----------------------|-------------|---------------|------------------|-------------------|------------------|------------------|---------|--------|------------|--------|-------------|--------|--------------|--------|
|                      |             |               |                  |                   |                  |                  | EDP No. | Price  | EDP No.    | Price  | EDP No.     | Price  | EDP No.      | Price  |
| 4                    | 1/4         | 1/2           | 1-1/4            | 3-1/2             | 3                | TC4-D-5C         | 96734   | 62.55  | 97306      | 65.61  | 98306       | 67.15  | 99306        | 67.91  |
| 4                    | 1/4         | 3/8           | 3/4              | 2-1/2             | 3                | TC4-D-3C         | 96732   | 40.82  | 97305      | 43.34  | 98305       | 44.60  | 99305        | 45.23  |
| 4                    | 1/8         | 3/8           | 1                | 3                 | 3                | TC4-B-4C         | 96726   | 34.63  | 97302      | 37.15  | 98302       | 38.41  | 99302        | 39.04  |
| 4                    | 1/8         | 1/4           | 3/4              | 2-1/2             | 3                | TC4-B-3C         | 96724   | 32.81  | 97301      | 34.37  | 98301       | 35.15  | 99301        | 35.54  |
| 4                    | 3/16        | 3/8           | 1-1/4            | 3                 | 3                | TC4-C-5C         | 96730   | 45.41  | 97304      | 47.93  | 98304       | 49.19  | 99304        | 49.82  |
| 4                    | 3/16        | 3/8           | 3/4              | 2-1/2             | 3                | TC4-C-3C         | 96728   | 40.82  | 97303      | 43.34  | 98303       | 44.60  | 99303        | 45.23  |
| 4                    | 3/32        | 1/4           | 1                | 3                 | 3                | TC4-A-4C         | 96722   | 29.59  | 97300      | 31.60  | 98300       | 32.61  | 99300        | 33.11  |
| 5                    | 1/16        | 1/4           | 1                | 3                 | 3                | TC5-AA-4C        | 96560   | 46.31  | 97395      | 48.32  | 98395       | 49.33  | 99395        | 49.83  |
| 5                    | 1/16        | 1/4           | 1/2              | 2-1/2             | 3                | TC5-AA-2C        | 96556   | 34.80  | 97393      | 36.36  | 98393       | 37.14  | 99393        | 37.53  |
| 5                    | 1/16        | 1/4           | 3/4              | 2-1/2             | 3                | TC5-AA-3C        | 96558   | 36.38  | 97394      | 37.94  | 98394       | 38.72  | 99394        | 39.11  |
| 5                    | 1/32        | 3/16          | 1/2              | 2-1/2             | 3                | TC5-AAA-2C       | 96550   | 32.44  | 97390      | 34.00  | 98390       | 34.78  | 99390        | 35.17  |
| 5                    | 1/32        | 1/8           | 1/4              | 2-1/2             | 3                | TC5-AAA-1C       | 96548   | 30.44  | 97389      | 32.00  | 98389       | 32.78  | 99389        | 33.17  |
| 5                    | 1/4         | 1/2           | 1                | 3                 | 3                | TC5-D-4C         | 96754   | 52.49  | 97316      | 55.55  | 98316       | 57.09  | 99316        | 57.85  |
| 5                    | 1/4         | 1/2           | 1-1/4            | 3-1/2             | 3                | TC5-D-5C         | 96756   | 62.55  | 97317      | 65.61  | 98317       | 67.15  | 99317        | 67.91  |
| 5                    | 1/4         | 5/8           | 2                | 4                 | 3                | TC5-D-8C         | 96758   | 74.14  | 97318      | 79.86  | 98318       | 82.71  | 99318        | 84.14  |
| 5                    | 1/4         | 1/2           | 3/4              | 2-1/2             | 3                | TC5-D-3C         | 96752   | 47.02  | 97315      | 49.84  | 98315       | 51.25  | 99315        | 51.96  |
| 5                    | 1/8         | 3/8           | 1                | 3                 | 3                | TC5-B-4C         | 96744   | 43.01  | 97311      | 45.53  | 98311       | 46.79  | 99311        | 47.42  |
| 5                    | 1/8         | 3/8           | 1-1/2            | 3-1/2             | 3                | TC5-B-6C         | 96746   | 45.41  | 97312      | 47.93  | 98312       | 49.19  | 99312        | 49.82  |
| 5                    | 1/8         | 1/4           | 3/4              | 2-1/2             | 3                | TC5-B-3C         | 96742   | 30.25  | 97310      | 31.81  | 98310       | 32.59  | 99310        | 32.98  |
| 5                    | 3/16        | 1/2           | 1-1/4            | 3                 | 3                | TC5-C-5C         | 96750   | 62.55  | 97314      | 65.61  | 98314       | 67.15  | 99314        | 67.91  |
| 5                    | 3/16        | 3/8           | 3/4              | 2-1/2             | 3                | TC5-C-3C         | 96748   | 40.82  | 97313      | 43.34  | 98313       | 44.60  | 99313        | 45.23  |
| 5                    | 3/32        | 3/8           | 1                | 3                 | 3                | TC5-A-4C         | 96738   | 41.55  | 97308      | 44.07  | 98308       | 45.33  | 99308        | 45.96  |
| 5                    | 3/32        | 3/8           | 1-1/2            | 3-1/2             | 3                | TC5-A-6C         | 96740   | 45.41  | 97309      | 47.93  | 98309       | 49.19  | 99309        | 49.82  |
| 5                    | 3/32        | 1/4           | 3/4              | 2-1/2             | 3                | TC5-A-3C         | 96736   | 34.63  | 97307      | 36.19  | 98307       | 36.97  | 99307        | 37.36  |
| 5                    | 3/64        | 3/16          | 1/2              | 2-1/2             | 3                | TC5-AAX-2C       | 96554   | 32.81  | 97392      | 34.37  | 98392       | 35.15  | 99392        | 35.54  |
| 5                    | 3/64        | 1/8           | 1/4              | 2-1/2             | 3                | TC5-AAX-1C       | 96552   | 30.85  | 97391      | 32.41  | 98391       | 33.19  | 99391        | 33.58  |
| 5                    | 5/64        | 3/8           | 1                | 3                 | 3                | TC5-AXA-4C       | 96566   | 51.57  | 97398      | 54.09  | 98398       | 55.35  | 99398        | 55.98  |
| 5                    | 5/64        | 3/16          | 1/2              | 2-1/2             | 3                | TC5-AXA-2C       | 96562   | 35.57  | 97396      | 37.13  | 98396       | 37.91  | 99396        | 38.30  |
| 5                    | 5/64        | 1/4           | 3/4              | 2-1/2             | 3                | TC5-AXA-3C       | 96564   | 38.34  | 97397      | 39.90  | 98397       | 40.68  | 99397        | 41.07  |
| 7                    | 1/4         | 5/8           | 1-1/4            | 3-1/2             | 3                | TC7-D-5C         | 96776   | 68.82  | 97327      | 73.35  | 98327       | 75.62  | 99327        | 76.75  |
| 7                    | 1/4         | 1/2           | 3/4              | 2-1/2             | 3                | TC7-D-3C         | 96774   | 55.40  | 97326      | 58.22  | 98326       | 59.63  | 99326        | 60.34  |
| 7                    | 1/8         | 3/8           | 1                | 3                 | 3                | TC7-B-4C         | 96766   | 45.41  | 97322      | 47.93  | 98322       | 49.19  | 99322        | 49.82  |
| 7                    | 1/8         | 3/8           | 1/2              | 2-1/2             | 3                | TC7-B-2C         | 96762   | 39.37  | 97320      | 41.89  | 98320       | 43.15  | 99320        | 43.78  |
| 7                    | 1/8         | 1/2           | 1-1/2            | 3-1/2             | 3                | TC7-B-6C         | 96768   | 55.40  | 97323      | 58.46  | 98323       | 60.00  | 99323        | 60.76  |
| 7                    | 1/8         | 3/8           | 3/4              | 2-1/2             | 3                | TC7-B-3C         | 96764   | 42.28  | 97321      | 44.80  | 98321       | 46.06  | 99321        | 46.69  |
| 7                    | 3/16        | 1/2           | 1-1/4            | 3-1/2             | 3                | TC7-C-5C         | 96772   | 62.55  | 97325      | 65.61  | 98325       | 67.15  | 99325        | 67.91  |
| 7                    | 3/32        | 3/8           | 1                | 3                 | 3                | TC7-A-4C         | 96760   | 42.65  | 97319      | 45.17  | 98319       | 46.43  | 99319        | 47.06  |
| 7                    | 5/32        | 3/8           | 3/4              | 2-1/2             | 3                | TC7-BX-3C        | 96770   | 42.28  | 97324      | 44.80  | 98324       | 46.06  | 99324        | 46.69  |
| 10                   | 1/4         | 5/8           | 1                | 3                 | 3                | TC10-D-4C        | 96792   | 68.82  | 97335      | 73.35  | 98335       | 75.62  | 99335        | 76.75  |
| 10                   | 1/4         | 5/8           | 3/4              | 3                 | 3                | TC10-D-3C        | 96790   | 67.07  | 97334      | 71.60  | 98334       | 73.87  | 99334        | 75.00  |
| 10                   | 1/8         | 5/8           | 1                | 3                 | 3                | TC10-B-5C        | 96784   | 68.82  | 97331      | 73.35  | 98331       | 75.62  | 99331        | 76.75  |
| 10                   | 1/8         | 5/8           | 1-1/4            | 3-1/2             | 3                | TC10-B-4C        | 96786   | 62.55  | 97332      | 67.08  | 98332       | 69.35  | 99332        | 70.48  |
| 10                   | 1/8         | 3/8           | 3/4              | 2-1/2             | 3                | TC10-B-3C        | 96782   | 42.28  | 97330      | 44.80  | 98330       | 46.06  | 99330        | 46.69  |
| 10                   | 3/16        | 5/8           | 1-1/4            | 3-1/2             | 3                | TC10-C-5C        | 96788   | 68.82  | 97333      | 73.35  | 98333       | 75.62  | 99333        | 76.75  |
| 10                   | 3/32        | 1/4           | 1/2              | 2-1/2             | 3                | TC10-A-2C        | 96778   | 28.86  | 97328      | 30.42  | 98328       | 31.20  | 99328        | 31.59  |
| 10                   | 3/32        | 5/8           | 1-1/2            | 3-1/2             | 3                | TC10-A-6C        | 96780   | 68.82  | 97329      | 73.35  | 98329       | 75.62  | 99329        | 76.75  |
| 15                   | 1/4         | 3/4           | 1                | 3                 | 3                | TC15-D-4C        | 96798   | 166.64 | 97338      | 172.02 | 98338       | 174.71 | 99338        | 176.05 |
| 15                   | 1/8         | 3/4           | 1                | 3                 | 3                | TC15-B-4C        | 96794   | 152.02 | 97336      | 157.40 | 98336       | 160.09 | 99336        | 161.43 |
| 15                   | 3/16        | 3/4           | 1                | 3                 | 3                | TC15-C-4C        | 96796   | 160.80 | 97337      | 166.18 | 98337       | 168.87 | 99337        | 170.21 |

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## SOLID CARBIDE END MILLS

**TOUGH MILL • 5, 8 & 12-FLUTE, C/C, SE & DE, 45° HELIX**

**IDEAL FOR PERIPHERAL FINISH MILLING**

| FLUTE DIA. | SHANK DIA. | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | CATALOG NO. | 3 FLUTE BALL PART# | UNCOATED LIST PRICE | 3 FLUTE BALL PART# | ALTiN COATED LIST PRICE |
|------------|------------|---------------|----------------|---------------|-------------|--------------------|---------------------|--------------------|-------------------------|
| 1/8        | 1/8        | 1/4           | 1-1/2          | 5             | MHS-5-4     | 93004              | \$15.39             | 99033              | \$18.81                 |
| 1/8        | 1/8        | 1/2           | 1-1/2          | 5             | MH-5-4      | 92604              | \$16.51             | 99041              | \$19.93                 |
| 3/16       | 3/16       | 5/16          | 2              | 5             | MHS-5-6     | 93008              | \$16.57             | 99034              | \$19.99                 |
| 3/16       | 3/16       | 9/16          | 2              | 5             | MH-5-6      | 92608              | \$17.73             | 99042              | \$21.14                 |
| 1/4        | 1/4        | 3/8           | 2-1/2          | 5             | MHS-5-8     | 93012              | \$17.86             | 99035              | \$21.28                 |
| 1/4        | 1/4        | 3/4           | 2-1/2          | 5             | MH-5-8      | 92612              | \$19.11             | 99043              | \$22.53                 |
| 1/4        | 1/4        | 1-1/8         | 3              | 5             | MHM-5-8     | 90912              | \$27.13             | 99715              | \$31.54                 |
| 1/4        | 1/4        | 1-1/2         | 4              | 5             | MHL-5-8     | 91012              | \$33.07             | 99723              | \$40.53                 |
| 5/16       | 5/16       | 7/16          | 2-1/2          | 5             | MHS-5-10    | 93016              | \$22.51             | 99711              | \$28.03                 |
| 5/16       | 5/16       | 13/16         | 2-1/2          | 5             | MH-5-10     | 92616              | \$24.07             | 99712              | \$29.60                 |
| 5/16       | 5/16       | 1-1/8         | 3              | 5             | MHM-5-10    | 90916              | \$33.12             | 99716              | \$38.63                 |
| 5/16       | 5/16       | 1-5/8         | 4              | 5             | MHL-5-10    | 91016              | \$40.41             | 99724              | \$47.86                 |
| 3/8        | 3/8        | 1/2           | 2-1/2          | 5             | MHS-5-12    | 93020              | \$27.78             | 99036              | \$33.24                 |
| 3/8        | 3/8        | 1             | 2-1/2          | 5             | MH-5-12     | 92620              | \$29.73             | 99044              | \$35.26                 |
| 3/8        | 3/8        | 1-1/8         | 3              | 5             | MHM-5-12    | 90920              | \$41.33             | 99717              | \$46.85                 |
| 3/8        | 3/8        | 1-3/4         | 4              | 5             | MHL-5-12    | 91020              | \$45.78             | 99725              | \$53.24                 |
| 7/16       | 7/16       | 9/16          | 2-3/4          | 5             | MHS-5-14    | 93025              | \$34.87             | 99713              | \$41.06                 |
| 7/16       | 7/16       | 1             | 2-3/4          | 5             | MH-5-14     | 92625              | \$37.29             | 99714              | \$43.49                 |
| 7/16       | 7/16       | 2             | 4              | 5             | MHM-5-14    | 90925              | \$61.94             | 99718              | \$71.96                 |
| 7/16       | 7/16       | 3             | 6              | 5             | MHL-5-14    | 91025              | \$91.05             | 99726              | \$105.50                |
| 1/2        | 1/2        | 5/8           | 3              | 5             | MHS-5-16    | 93028              | \$42.81             | 99037              | \$49.53                 |
| 1/2        | 1/2        | 5/8           | 3              | 8 *           | MHS-8-16    | 93029              | \$49.23             | 99912              | \$55.95                 |
| 1/2        | 1/2        | 1-1/4         | 3              | 5             | MH-5-16     | 92628              | \$45.80             | 99045              | \$52.53                 |
| 1/2        | 1/2        | 1-1/4         | 3              | 8 *           | MH-8-16     | 92629              | \$52.67             | 99456              | \$59.40                 |
| 1/2        | 1/2        | 2             | 4              | 5             | MHM-5-16    | 90928              | \$66.29             | 99719              | \$76.31                 |
| 1/2        | 1/2        | 3             | 6              | 5             | MHL-5-16    | 91028              | \$132.97            | 99727              | \$147.53                |
| 5/8        | 5/8        | 3/4           | 3-1/2          | 5             | MHS-5-20    | 93030              | \$89.91             | 99038              | \$99.85                 |
| 5/8        | 5/8        | 3/4           | 3-1/2          | 8 *           | MHS-8-20    | 93031              | \$103.68            | 99913              | \$113.62                |
| 5/8        | 5/8        | 1-5/8         | 3-1/2          | 5             | MH-5-20     | 92632              | \$96.53             | 99046              | \$106.46                |
| 5/8        | 5/8        | 1-5/8         | 3-1/2          | 8 *           | MH-8-20     | 92631              | \$111.00            | 99457              | \$120.94                |
| 5/8        | 5/8        | 2-1/4         | 5              | 5             | MHM-5-20    | 90930              | \$128.32            | 99720              | \$142.86                |
| 5/8        | 5/8        | 3             | 6              | 5             | MHL-5-20    | 91030              | \$138.57            | 99728              | \$155.03                |
| 3/4        | 3/4        | 1             | 4              | 5             | MHS-5-24    | 93032              | \$116.89            | 99039              | \$131.73                |
| 3/4        | 3/4        | 1             | 4              | 8 *           | MHS-8-24    | 93033              | \$134.42            | 99914              | \$149.25                |
| 3/4        | 3/4        | 1-5/8         | 4              | 5             | MH-5-24     | 92634              | \$125.05            | 99047              | \$158.64                |
| 3/4        | 3/4        | 1-5/8         | 4              | 8 *           | MH-8-24     | 92633              | \$143.81            | 99458              | \$166.48                |
| 3/4        | 3/4        | 2-1/4         | 5              | 5             | MHM-5-24    | 90932              | \$167.37            | 99721              | \$198.40                |
| 3/4        | 3/4        | 3             | 6              | 5             | MHL-5024    | 91032              | \$189.05            | 99729              | \$209.38                |
| 1          | 1          | 1-1/4         | 4              | 5             | MHS-5-32    | 93034              | \$185.93            | 99040              | \$206.72                |
| 1          | 1          | 1-1/4         | 4              | 12 *          | MHS-12-32   | 93035              | \$260.31            | 99915              | \$281.07                |
| 1          | 1          | 2             | 4              | 5             | MH-5-32     | 92638              | \$198.93            | 99048              | \$219.71                |
| 1          | 1          | 2             | 4              | 12 *          | MH-12-32    | 92635              | \$278.49            | 99911              | \$299.27                |
| 1          | 1          | 2-1/4         | 5              | 5             | MHM-5-32    | 90934              | \$248.82            | 99722              | \$271.55                |
| 1          | 1          | 3             | 6              | 5             | MHL-5-32    | 91034              | \$273.71            | 99730              | \$299.55                |
| 3/16       | 3/16       | 5/16          | 2              | 5             | DMHS-5-6    | 85008              | \$25.76             | 99916              | \$28.60                 |
| 1/4        | 1/4        | 3/8           | 2-1/2          | 5             | DMHS-5-8    | 85012              | \$26.99             | 99917              | \$29.83                 |
| 5/16       | 5/16       | 7/16          | 2-1/2          | 5             | DMHS-5-10   | 85016              | \$31.71             | 99918              | \$36.30                 |
| 3/8        | 3/8        | 1/2           | 2-1/2          | 5             | DMHS-5-12   | 85020              | \$39.07             | 99919              | \$43.65                 |
| 7/16       | 7/16       | 9/16          | 2-3/4          | 5             | DMHS-5-14   | 85025              | \$47.97             | 99920              | \$53.10                 |
| 1/2        | 1/2        | 5/8           | 3              | 5             | DMHS-5-16   | 85028              | \$58.34             | 99921              | \$63.92                 |

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**PROUD TO BE MADE IN THE U.S.A.**



**Series 350*****Metalloy*****HTC** **SOLID CARBIDE END MILLS****CORNER RADIUS - .015, .032, .062, .093, .125****SINGLE END SQUARE • 2-4 FLUTE****UNCOATED**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/8"       | 1/2"         | 1-1/2"      | 350-2125      | 350-4125      | \$7.04     |
| 1/8"       | 1"           | 3"          | 350-2123      | 350-4123      | \$16.50    |
| 3/16"      | 5/8"         | 2"          | 350-2187      | 350-4187      | \$11.70    |
| 3/16"      | 1-1/8"       | 3"          | 350-2183      | 350-4183      | \$18.34    |
| 1/4"       | 3/4"         | 2-1/2"      | 350-2250      | 350-4250      | \$13.42    |
| 1/4"       | 1-1/2"       | 4"          | 350-2254      | 350-4254      | \$24.10    |
| 5/16"      | 3/16"        | 2-1/2"      | 350-2312      | 350-4312      | \$17.16    |
| 5/16"      | 1-5/8"       | 4"          | 350-2314      | 350-4314      | \$30.14    |
| 3/8"       | 1"           | 2-1/2"      | 350-2375      | 350-4375      | \$20.90    |
| 3/8"       | 1-1/8"       | 4"          | 350-2374      | 350-4374      | \$39.00    |
| 3/8"       | 1-1/2"       | 6"          | 350-2376      | 350-4376      | \$49.50    |
| 1/2"       | 1"           | 3"          | 350-2500      | 350-4500      | \$35.20    |
| 1/2"       | 1-1/4"       | 4"          | 350-2504      | 350-4504      | \$52.74    |
| 1/2"       | 1-1/2"       | 6"          | 350-2506      | 350-4506      | \$76.00    |
| 5/8"       | 1-1/4"       | 3-1/2"      | 350-2625      | 350-4625      | \$67.10    |
| 5/8"       | 1-1/2"       | 6"          | 350-2626      | 350-4626      | \$116.00   |
| 3/4"       | 1-1/2"       | 4"          | 350-2750      | 350-4750      | \$92.40    |
| 3/4"       | 2"           | 6"          | 350-2756      | 350-4756      | \$156.00   |
| 1"         | 1-1/2"       | 4"          | 350-2100      | 350-4100      | \$166.00   |
| 1"         | 2-1/4"       | 6"          | 350-2106      | 350-4106      | \$270.00   |

**OTHER SIZES AVAILABLE****[www.METALLOYTOOLING.com](http://www.METALLOYTOOLING.com)**

## SOLID CARBIDE END MILLS

CORNER RADIUS - .015, .032, .062, .093, .125

SINGLE END SQUARE • 2-4 FLUTE

ALTIN COATED - **HTC** HARD COAT



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/8"       | 1/2"         | 1-1/2"      | 360-2125      | 360-4125      | \$8.82     |
| 1/8"       | 1"           | 3"          | 360-2123      | 360-4123      | \$18.74    |
| 3/16"      | 5/8"         | 2"          | 360-2187      | 360-4187      | \$14.26    |
| 3/16"      | 1-1/8"       | 3"          | 360-2183      | 360-4183      | \$21.30    |
| 1/4"       | 3/4"         | 2-1/2"      | 360-2250      | 360-4250      | \$18.08    |
| 1/4"       | 1-1/2"       | 4"          | 360-2254      | 360-4254      | \$29.50    |
| 5/16"      | 3/16"        | 2-1/2"      | 360-2312      | 360-4312      | \$23.72    |
| 5/16"      | 1-5/8"       | 4"          | 360-2314      | 360-4314      | \$36.50    |
| 3/8"       | 1"           | 2-1/2"      | 360-2375      | 360-4375      | \$27.46    |
| 3/8"       | 1-1/8"       | 4"          | 360-2374      | 360-4374      | \$45.30    |
| 3/8"       | 1-1/2"       | 6"          | 360-2376      | 360-4376      | \$58.74    |
| 1/2"       | 1"           | 3"          | 360-2500      | 360-4500      | \$44.58    |
| 1/2"       | 1-1/4"       | 4"          | 360-2504      | 360-4504      | \$64.46    |
| 1/2"       | 1-1/2"       | 6"          | 360-2506      | 360-4506      | \$92.36    |
| 5/8"       | 1-1/4"       | 3-1/2"      | 360-2625      | 360-4625      | \$81.74    |
| 5/8"       | 1-1/2"       | 6"          | 360-2626      | 360-4626      | \$136.50   |
| 3/4"       | 1-1/2"       | 4"          | 360-2750      | 360-4750      | \$109.12   |
| 3/4"       | 2"           | 6"          | 360-2756      | 360-4756      | \$179.42   |
| 1"         | 1-1/2"       | 4"          | 360-2100      | 360-4100      | \$191.86   |
| 1"         | 2-1/4"       | 6"          | 360-2106      | 360-4106      | \$310.94   |

## OTHER SIZES AVAILABLE

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PROUD TO BE MADE IN THE U.S.A.



**Series 300*****Metalloy*****HTC** **SOLID CARBIDE END MILLS****ROUGHING "HOG" - HTC TURBO MILL****SINGLE END SQUARE • 4 FLUTE****UNCOATED**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|------------|
| 1/8"       | 3/8"         | 1-1/2"      | 300-4125      | \$11.60    |
| 3/16"      | 5/8"         | 2"          | 300-4187      | \$15.80    |
| 1/4"       | 3/4"         | 2-1/2"      | 300-4250      | \$18.00    |
| 1/4"       | 1-1/8"       | 3"          | 300-4253      | \$36.00    |
| 1/4"       | 1-1/2"       | 4"          | 300-4254      | \$39.40    |
| 5/16"      | 3/4"         | 2-1/2"      | 300-4312      | \$24.00    |
| 5/16"      | 1-1/4"       | 3"          | 300-4313      | \$34.20    |
| 5/16"      | 1-5/8"       | 4"          | 300-4314      | \$50.00    |
| 3/8"       | 1"           | 2-1/2"      | 300-4375      | \$32.00    |
| 3/8"       | 1-1/4"       | 3"          | 300-4373      | \$49.60    |
| 3/8"       | 1-3/4"       | 4"          | 300-4374      | \$64.00    |
| 7/16"      | 1"           | 3"          | 300-4437      | \$34.00    |
| 7/16"      | 2"           | 4"          | 300-4434      | \$70.00    |
| 1/2"       | 1-1/4"       | 3"          | 300-4500      | \$38.00    |
| 1/2"       | 2"           | 4"          | 300-4504      | \$74.20    |
| 1/2"       | 3"           | 6"          | 300-4506      | \$96.00    |
| 5/8"       | 1-1/4"       | 3-1/2"      | 300-4625      | \$84.00    |
| 5/8"       | 2-1/4"       | 5"          | 300-4655      | \$146.00   |
| 5/8"       | 3"           | 6"          | 300-4626      | \$218.00   |
| 3/4"       | 1-1/2"       | 4"          | 300-4750      | \$110.00   |
| 3/4"       | 2-1/4"       | 5"          | 300-4755      | \$208.00   |
| 3/4"       | 3"           | 6"          | 300-4756      | \$258.00   |
| 1"         | 1-1/2"       | 4"          | 300-4100      | \$150.00   |
| 1"         | 2-1/4"       | 5"          | 300-4105      | \$276.00   |
| 1"         | 3"           | 6"          | 300-4106      | \$374.00   |

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## SOLID CARBIDE END MILLS

ROUGHING "HOG" - HTC TURBO MILL

SINGLE END SQUARE • 4 FLUTE

TICN COAT- HTC PROGRESSIVE COAT



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|------------|
| 1/8"       | 3/8"         | 1-1/2"      | 307-4125      | \$13.74    |
| 3/16"      | 5/8"         | 2"          | 307-4187      | \$16.08    |
| 1/4"       | 3/4"         | 2-1/2"      | 307-4250      | \$25.22    |
| 1/4"       | 1-1/8"       | 3"          | 307-4253      | \$40.53    |
| 1/4"       | 1-1/2"       | 4"          | 307-4254      | \$44.62    |
| 5/16"      | 3/4"         | 2-1/2"      | 307-4312      | \$29.10    |
| 5/16"      | 1-1/4"       | 3"          | 307-4313      | \$38.64    |
| 5/16"      | 1-5/8"       | 4"          | 307-4314      | \$58.20    |
| 3/8"       | 1"           | 2-1/2"      | 307-4375      | \$38.80    |
| 3/8"       | 1-1/4"       | 3"          | 307-4373      | \$61.11    |
| 3/8"       | 1-3/4"       | 4"          | 307-4374      | \$75.04    |
| 7/16"      | 1"           | 3"          | 307-4437      | \$42.68    |
| 7/16"      | 2"           | 4"          | 307-4434      | \$89.24    |
| 1/2"       | 1-1/4"       | 3"          | 307-4500      | \$50.44    |
| 1/2"       | 2"           | 4"          | 307-4504      | \$91.18    |
| 1/2"       | 3"           | 6"          | 307-4506      | \$120.28   |
| 5/8"       | 1-1/4"       | 3-1/2"      | 307-4625      | \$99.91    |
| 5/8"       | 2-1/4"       | 5"          | 307-4655      | \$182.36   |
| 5/8"       | 3"           | 6"          | 307-4626      | \$244.44   |
| 3/4"       | 1-1/2"       | 4"          | 307-4750      | \$127.65   |
| 3/4"       | 2-1/4"       | 5"          | 307-4755      | \$240.56   |
| 3/4"       | 3"           | 6"          | 307-4756      | \$302.64   |
| 1"         | 1-1/2"       | 4"          | 307-4100      | \$165.39   |
| 1"         | 2-1/4"       | 5"          | 307-4105      | \$317.19   |
| 1"         | 3"           | 6"          | 307-4106      | \$415.16   |

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PROUD TO BE MADE IN THE U.S.A.



**Series 310****Metalloy****HTC** **SOLID CARBIDE END MILLS****ROUGHING "HOG" - HTC TURBO MILL****SINGLE END SQUARE • 4 FLUTE****ALTIN COATED HTC HARD COAT**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|------------|
| 1/8"       | 3/8"         | 1-1/2"      | 310-4125      | \$14.16    |
| 3/16"      | 5/8"         | 2"          | 310-4187      | \$16.58    |
| 1/4"       | 3/4"         | 2-1/2"      | 310-4250      | \$26.00    |
| 1/4"       | 1-1/8"       | 3"          | 310-4253      | \$41.78    |
| 1/4"       | 1-1/2"       | 4"          | 310-4254      | \$46.00    |
| 5/16"      | 3/4"         | 2-1/2"      | 310-4312      | \$30.00    |
| 5/16"      | 1-1/4"       | 3"          | 310-4313      | \$39.84    |
| 5/16"      | 1-5/8"       | 4"          | 310-4314      | \$60.00    |
| 3/8"       | 1"           | 2-1/2"      | 310-4375      | \$40.00    |
| 3/8"       | 1-1/4"       | 3"          | 310-4373      | \$63.00    |
| 3/8"       | 1-3/4"       | 4"          | 310-4374      | \$77.36    |
| 7/16"      | 1"           | 3"          | 310-4437      | \$44.00    |
| 7/16"      | 2"           | 4"          | 310-4434      | \$92.00    |
| 1/2"       | 1-1/4"       | 3"          | 310-4500      | \$52.00    |
| 1/2"       | 2"           | 4"          | 310-4504      | \$94.00    |
| 1/2"       | 3"           | 6"          | 310-4506      | \$124.00   |
| 5/8"       | 1-1/4"       | 3-1/2"      | 310-4625      | \$103.00   |
| 5/8"       | 2-1/4"       | 5"          | 310-4655      | \$188.00   |
| 5/8"       | 3"           | 6"          | 310-4626      | \$252.00   |
| 3/4"       | 1-1/2"       | 4"          | 310-4750      | \$131.60   |
| 3/4"       | 2-1/4"       | 5"          | 310-4755      | \$248.00   |
| 3/4"       | 3"           | 6"          | 310-4756      | \$312.00   |
| 1"         | 1-1/2"       | 4"          | 310-4100      | \$170.50   |
| 1"         | 2-1/4"       | 5"          | 310-4105      | \$327.00   |
| 1"         | 3"           | 6"          | 310-4106      | \$428.00   |

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## SOLID CARBIDE END MILLS

**ROUGHING 45° HIGH HELIX • SINGLE END SQUARE / 3 FLUTE**  
**UNCOATED**

| CUTTER DIA | SHANK DIAMETER | FLUTE LENGTH | O.A. LENGTH | 4 FLUTE PART# | LIST PRICE |
|------------|----------------|--------------|-------------|---------------|------------|
| 3/16"      | 3/16"          | 5/8"         | 2"          | 830-3187      | \$16.00    |
| 1/4"       | 1/4"           | 3/4"         | 2-1/2"      | 830-3250      | \$21.60    |
| 5/16"      | 5/16"          | 3/4"         | 2-1/2"      | 830-3312      | \$28.80    |
| 3/8"       | 3/8"           | 7/8"         | 2-1/2"      | 830-3375      | \$38.40    |
| 7/16"      | 7/16"          | 1"           | 3"          | 830-3437      | \$40.80    |
| 1/2"       | 1/2"           | 1"           | 3"          | 830-3500      | \$45.60    |
| 5/8"       | 5/8"           | 1-1/4"       | 3-1/2"      | 890-3625      | \$100.80   |
| 3/4"       | 3/4"           | 1-1/2"       | 4"          | 830-3750      | \$132.00   |
| 1"         | 1"             | 1-1/2"       | 4"          | 830-3100      | \$180.00   |



### Series 850

## SOLID CARBIDE END MILLS

**PROFILING • SINGLE END BALL / 2 FLUTE**  
**ALTIN COATED HTC HARD COAT**

| CUTTER DIA | SHANK DIAMETER | O.A. LENGTH | PART #   | LIST PRICE |
|------------|----------------|-------------|----------|------------|
| 1/8"       | 1/4"           | 4"          | 850-2125 | \$21.00    |
| 3/16"      | 1/4"           | 4"          | 850-2187 | \$39.00    |
| 1/4"       | 3/8"           | 4"          | 850-2250 | \$47.00    |
| 3/8"       | 1/2"           | 4"          | 850-2375 | \$64.00    |
| 1/2"       | 3/4"           | 6"          | 850-2500 | \$143.00   |
| 5/8"       | 3/4"           | 6"          | 850-2625 | \$164.00   |
| 3/4"       | 1"             | 6"          | 850-2750 | \$211.00   |



**MORE SIZES AVAILABLE IN  
BALL END OR SQUARE END**

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## Series 833

Metalloy



## SOLID CARBIDE END MILLS

## HOG MILL



C/C, SE MEDIUM PITCH KNUCKLE ROUGHER 25° HELIX • 3,4,6 FLUTE

| FLUTE DIA. | SHANK DIA. | LENGTH OF CUT | OVERALL LENGTH | CHAM. WIDTH | NO. OF FLUTES | CATALOG NO. | 3-4-6 FLUTE PART# | UNCOATED LIST PRICE | 3-4-6 FLUTE PART# | ALTIM COATED LIST PRICE |
|------------|------------|---------------|----------------|-------------|---------------|-------------|-------------------|---------------------|-------------------|-------------------------|
| 1/4        | 1/4        | 3/8           | 2-1/2          | .020        | 3             | KQSHS-3-8   | 90512             | \$47.48             | 99605             | \$50.88                 |
| 1/4        | 1/4        | 3/4           | 2-1/2          | .020        | 3             | KQSH-3-8    | 90612             | \$50.78             | 99606             | \$54.20                 |
| 5/16       | 5/16       | 7/16          | 2-1/2          | .020        | 3             | KQSHS-3-10  | 90516             | \$50.67             | 99607             | \$54.09                 |
| 5/16       | 5/16       | 13/16         | 2-1/2          | .020        | 3             | KQSH-3-10   | 90616             | \$56.94             | 99608             | \$60.36                 |
| 3/8        | 3/8        | 1/2           | 2-1/2          | .020        | 4             | KQSHA-4-12  | 90520             | \$65.92             | 99609             | \$69.34                 |
| 3/8        | 3/8        | 1             | 2-1/2          | .020        | 4             | KQSH-4-12   | 90620             | \$70.55             | 99610             | \$73.97                 |
| 7/16       | 7/16       | 9/16          | 2-3/4          | .020        | 4             | KQSHS-4-14  | 90525             | \$76.71             | 99611             | \$80.13                 |
| 7/16       | 7/16       | 1             | 2-3/4          | .020        | 4             | KQSH-4-14   | 90625             | \$84.37             | 99612             | \$87.79                 |
| 1/2        | 1/2        | 5/8           | 3              | .025        | 4             | KQSHS-4-16  | 90528             | \$83.06             | 99613             | \$86.48                 |
| 1/2        | 1/2        | 1-1/4         | 3              | .025        | 4             | KQSH-4-16   | 90628             | \$88.88             | 99614             | \$92.31                 |
| 9/16       | 9/16       | 1-1/4         | 3-1/2          | .025        | 4             | KQSH-4-18   | 90629             | \$136.52            | 99615             | \$139.95                |
| 5/8        | 5/8        | 3/4           | 3-1/2          | .025        | 4             | KQSHS-4-20  | 90530             | \$143.72            | 99616             | \$147.14                |
| 5/8        | 5/8        | 1-5/8         | 3-1/2          | .025        | 4             | KQSH-4-20   | 90630             | \$153.79            | 99617             | \$157.21                |
| 3/4        | 3/4        | 1             | 4              | .025        | 4             | KQSHS-4-24  | 90532             | \$163.49            | 99618             | \$170.95                |
| 3/4        | 3/4        | 1-5/8         | 4              | .025        | 4             | KQSH-4-24   | 90632             | \$174.94            | 99619             | \$182.40                |
| 1          | 1          | 1-1/4         | 4              | .025        | 6             | KQSH-6-32   | 90534             | \$262.39            | 99620             | \$269.85                |
| 1          | 1          | 2             | 4              | .025        | 6             | KQSH-6-32   | 90634             | \$280.76            | 99621             | \$288.21                |

## Series 835

## SOLID CARBIDE END MILLS

## HOG MILL • C/C, SE, 35° HELIX • 3 FLUTE

FINE KNUCKLE ROUGHERS FOR ALUMINUM



| FLUTE DIA. | SHANK DIA. | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | CATALOG NO. | 3 FLUTE PART# | UNCOATED LIST PRICE | 3 FLUTE PART# | ALTIM COATED LIST PRICE |
|------------|------------|---------------|----------------|---------------|-------------|---------------|---------------------|---------------|-------------------------|
| 1/4        | 1/4        | 3/8           | 2-1/2          | 3             | AFQS-3-8    | 85212         | \$47.48             | 99895         | \$50.88                 |
| 1/4        | 1/4        | 3/4           | 2-1/2          | 3             | AFQ-3-8     | 85312         | \$50.78             | 99896         | \$54.20                 |
| 5/16       | 5/16       | 7/16          | 2-1/2          | 3             | AFQS-3-10   | 85216         | \$50.67             | 99897         | \$54.09                 |
| 5/16       | 5/16       | 13/16         | 2-1/2          | 3             | AFQ-3-10    | 85316         | \$56.94             | 99898         | \$60.36                 |
| 3/8        | 3/8        | 1/2           | 2-1/2          | 3             | AFQS-3-12   | 85220         | \$65.92             | 99899         | \$69.34                 |
| 3/8        | 3/8        | 1             | 2-1/2          | 3             | AFQ-3-12    | 85320         | \$70.55             | 99900         | \$73.97                 |
| 7/16       | 7/16       | 9/16          | 2-3/4          | 3             | AFQS-3-14   | 85225         | \$76.71             | 99901         | \$80.13                 |
| 7/16       | 7/16       | 1             | 2-3/4          | 3             | AFQ-3-14    | 85325         | \$84.37             | 99902         | \$87.79                 |
| 1/2        | 1/2        | 5/8           | 3              | 3             | AFQS-3-16   | 85228         | \$83.06             | 99903         | \$86.48                 |
| 1/2        | 1/2        | 1-1/4         | 3              | 3             | AFQ-3-16    | 85328         | \$88.88             | 99904         | \$92.31                 |
| 5/8        | 5/8        | 3/4           | 3-1/2          | 3             | AFQS-3-20   | 85230         | \$143.72            | 99905         | \$147.14                |
| 5/8        | 5/8        | 1-5/8         | 3-1/2          | 3             | AFQ-3-20    | 85330         | \$153.74            | 99906         | \$157.21                |
| 3/4        | 3/4        | 1             | 4              | 3             | AFQS-3-24   | 85232         | \$163.49            | 99907         | \$170.95                |
| 3/4        | 3/4        | 1-5/8         | 4              | 3             | AFQ-3-24    | 85332         | \$174.94            | 99908         | \$182.40                |
| 1          | 1          | 1-1/4         | 4              | 3             | AFQS-3-32   | 85234         | \$262.39            | 99909         | \$269.85                |
| 1          | 1          | 2             | 4              | 3             | AFQ-3-32    | 85334         | \$280.76            | 99910         | \$288.21                |

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## SOLID CARBIDE END MILLS

### HOG MILL



3,4,6 FLUTE, C/C/ SE. 45° HELIX - TRUNCATED ROUGHER FOR TITANIUM

| FLUTE DIA. | SHANK DIA. | LENGTH OF CUT | OVERALL LENGTH | NO. OF FLUTES | CATALOG NO. | 3-4-6 FLUTE PART# | UNCOATED LIST PRICE | 3-4-6 FLUTE PART# | ALTN COATED LIST PRICE |
|------------|------------|---------------|----------------|---------------|-------------|-------------------|---------------------|-------------------|------------------------|
| 1/4        | 1/4        | 3/8           | 2-1/2          | 3             | TQSHS-3-8   | 90712             | \$47.48             | 99676             | \$50.88                |
| 1/4        | 1/4        | 3/4           | 2-1/2          | 3             | TQSH-3-8    | 90812             | \$50.78             | 99677             | \$54.20                |
| 3/8        | 3/8        | 1/2           | 2-1/2          | 4             | TQSHS-4-12  | 90720             | \$65.92             | 99678             | \$69.34                |
| 3/8        | 3/8        | 1             | 2-1/2          | 4             | TQSH-4-12   | 90820             | \$70.55             | 99679             | \$73.97                |
| 1/2        | 1/2        | 5/8           | 3              | 4             | TQSHS-4-16  | 90728             | \$83.06             | 99680             | \$86.48                |
| 1/2        | 1/2        | 1-1/4         | 3              | 4             | TQSH-4-16   | 90828             | \$88.88             | 99681             | \$92.31                |
| 5/8        | 5/8        | 3/4           | 3-1/2          | 4             | TQSHS-4-20  | 90730             | \$143.72            | 99682             | \$147.14               |
| 5/8        | 5/8        | 1-5/8         | 3-1/2          | 4             | TQSH-4-20   | 90830             | \$153.79            | 99683             | \$157.21               |
| 3/4        | 3/4        | 1             | 4              | 4             | TQSHS-4-24  | 90732             | \$163.49            | 99684             | \$170.95               |
| 3/4        | 3/4        | 1-5/8         | 4              | 4             | TQSH-4-24   | 90832             | \$174.94            | 99685             | \$182.40               |
| 1          | 1          | 1-1/4         | 4              | 6             | TQSHS-6-32  | 90734             | \$262.39            | 99686             | \$269.85               |

## Series 837

## SOLID CARBIDE END MILLS

### HOG MILL



5 FLUTE, C/C, SE FINE KNUCKLE ROUGHER FOR TITANIUM, 45° HELIX  
HIGH SPEED MACHINING SELECT SERIES

| FLUTE DIA. | SHANK DIA. | LENGTH OF CUT | OVERALL LENGTH | CHAM. WIDTH | NO. OF FLUTES | CATALOG NO. | 5 FLUTE PART# | UNCOATED LIST PRICE | 5 FLUTE PART# | ALTN COATED LIST PRICE |
|------------|------------|---------------|----------------|-------------|---------------|-------------|---------------|---------------------|---------------|------------------------|
| 3/8        | 3/8        | 1/2           | 2-1/2          | .020        | 5             | FQMHS-5-12  | 90320         | \$62.64             | 99779         | \$68.17                |
| 3/8        | 3/8        | 1             | 2-1/2          | .020        | 5             | FQMH-5-12   | 90420         | \$79.39             | 99780         | \$84.92                |
| 7/16       | 7/16       | 9/16          | 2-3/4          | .020        | 5             | FQMHS-5-14  | 90325         | \$70.88             | 99781         | \$77.07                |
| 7/16       | 7/16       | 1             | 2-3/4          | .020        | 5             | FQMH-5-14   | 90425         | \$87.85             | 99782         | \$94.04                |
| 1/2        | 1/2        | 5/8           | 3              | .025        | 5             | FQMHS-5-16  | 90328         | \$85.71             | 99783         | \$92.41                |
| 1/2        | 1/2        | 1-1/4         | 3              | .025        | 5             | FQMH-5-16   | 90428         | \$99.88             | 99784         | \$106.60               |
| 5/8        | 5/8        | 3/4           | 3-1/2          | .025        | 5             | FQMHS-5-20  | 90330         | \$136.81            | 99785         | \$146.74               |
| 5/8        | 5/8        | 1-5/8         | 3-1/2          | .025        | 5             | FQMH-5-20   | 90432         | \$173.01            | 99786         | \$182.95               |
| 3/4        | 3/4        | 1             | 4              | .025        | 5             | FQMHS-5-24  | 90332         | \$173.08            | 99787         | \$187.93               |
| 3/4        | 3/4        | 1-5/8         | 4              | .025        | 5             | FQMH-5-24   | 90434         | \$196.82            | 99788         | \$216.66               |
| 1          | 1          | 1-1/4         | 4              | .025        | 5             | FQMHS-5-32  | 90334         | \$283.48            | 99789         | \$304.26               |
| 1          | 1          | 2             | 4              | .025        | 5             | FQMH-5-32   | 90438         | \$315.88            | 99790         | \$336.66               |

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**Series 380*****Metalloy*****HTC** **SOLID CARBIDE END MILLS****HIGH PERFORMANCE - 45° HELIX****SINGLE END • 5-6 FLUTE****ALTIN COATED - **HTC** HARD COAT**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 5 FLUTE PART# | 6 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1/4"       | 3/4"         | 2-1/2"      | 380-5250      | 380-6250      | \$17.50    |
| 1/4"       | 1-1/8"       | 3"          | 380-5253      | 380-6253      | \$26.84    |
| 1/4"       | 1-1/2"       | 4"          | 380-5254      | 380-6254      | \$31.98    |
| 5/16"      | 3/4"         | 2-1/2"      | 380-5312      | 380-6312      | \$25.30    |
| 5/16"      | 1-1/8"       | 3"          | 380-5323      | 380-6323      | \$34.26    |
| 5/16"      | 1-5/8"       | 4"          | 380-5324      | 380-6324      | \$39.62    |
| 3/8"       | 1"           | 2-1/2"      | 380-5375      | 380-6375      | \$28.14    |
| 3/8"       | 1-1/8"       | 3"          | 380-5373      | 380-6373      | \$44.20    |
| 3/8"       | 1-3/4"       | 4"          | 380-5374      | 380-6374      | \$48.72    |
| 7/16"      | 1-3/16"      | 2-3/4"      | 380-5437      | 380-6437      | \$37.00    |
| 1/2"       | 1-1/4"       | 3"          | 380-5500      | 380-6500      | \$45.72    |
| 1/2"       | 2"           | 4"          | 380-5504      | 380-6504      | \$76.40    |
| 1/2"       | 3"           | 6"          | 380-5506      | 380-6506      | \$116.72   |
| 5/8"       | 1-5/8"       | 3-1/2"      | 380-5625      | 380-6625      | \$87.30    |
| 5/8"       | 2-1/4"       | 5"          | 380-5655      | 380-6655      | \$133.84   |
| 5/8"       | 3"           | 6"          | 380-5626      | 380-6626      | \$151.90   |
| 3/4"       | 1-5/8"       | 4"          | 380-5750      | 380-6750      | \$116.66   |
| 3/4"       | 2-1/4"       | 5"          | 380-5755      | 380-6755      | \$182.06   |
| 3/4"       | 3"           | 6"          | 380-5756      | 380-6756      | \$205.00   |
| 1"         | 2"           | 4"          | 380-5100      | 380-6100      | \$209.16   |
| 1"         | 2-1/2"       | 5"          | 380-5105      | 380-6105      | \$307.00   |
| 1"         | 3-1/4"       | 6"          | 380-5106      | 380-6106      | \$379.32   |
| 1"         | 4"           | 7"          | 380-5107      | 380-6107      | \$471.50   |

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## SOLID CARBIDE END MILLS

**METRIC ENDMILLS - STANDARD LENGTH**

**SINGLE END SQUARE • 2-3-4 FLUTE**

**UNCOATED**



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 3 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|---------------|------------|
| 1MM        | 3MM          | 38MM        | 950-2039      | 950-3039      | 950-4039      | \$8.28     |
| 1.5MM      | 5MM          | 38MM        | 950-2059      | 950-3059      | 950-4059      | \$8.20     |
| 2MM        | 6MM          | 38MM        | 950-2078      | 950-3078      | 950-4078      | \$6.60     |
| 2.5MM      | 7MM          | 38MM        | 950-2098      | 950-3098      | 950-4098      | \$6.60     |
| 3MM        | 12MM         | 38MM        | 950-2118      | 950-3118      | 950-4118      | \$5.10     |
| 3.5MM      | 12MM         | 50MM        | 950-2137      | 950-3137      | 950-4137      | \$8.98     |
| 4MM        | 14MM         | 50MM        | 950-2157      | 950-3157      | 950-4157      | \$8.62     |
| 4.5MM      | 14MM         | 50MM        | 950-2177      | 950-3177      | 950-4177      | \$8.98     |
| 5MM        | 16MM         | 50MM        | 950-2196      | 950-3196      | 950-4196      | \$9.68     |
| 6MM        | 19MM         | 63MM        | 950-2236      | 950-3236      | 950-4236      | \$9.50     |
| 7MM        | 19MM         | 63MM        | 950-2275      | 950-3275      | 950-4275      | \$13.50    |
| 8MM        | 19MM         | 63MM        | 950-2315      | 950-3315      | 950-4315      | \$12.50    |
| 9MM        | 22MM         | 70MM        | 950-2354      | 950-3354      | 950-4354      | \$22.44    |
| 10MM       | 22MM         | 70MM        | 950-2393      | 950-3393      | 950-4393      | \$19.80    |
| 11MM       | 25MM         | 70MM        | 950-2433      | 950-3433      | 950-4433      | \$29.92    |
| 12MM       | 25MM         | 75MM        | 950-2472      | 950-3472      | 950-4472      | \$25.00    |
| 14MM       | 30MM         | 88MM        | 950-2551      | 950-3551      | 950-4551      | \$46.20    |
| 16MM       | 32MM         | 88MM        | 950-2629      | 950-3629      | 950-4629      | \$61.60    |
| 18MM       | 36MM         | 100MM       | 950-2708      | 950-3708      | 950-4708      | \$70.40    |
| 20MM       | 38MM         | 100MM       | 950-2787      | 950-3787      | 950-4787      | \$84.48    |
| 22MM       | 38MM         | 100MM       | 950-2866      | 950-3866      | 950-4866      | \$103.84   |
| 25MM       | 38MM         | 100MM       | 950-2984      | 950-3984      | 950-4984      | \$122.00   |

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**PROUD TO BE MADE IN THE U.S.A.**



**Series 952*****Metalloy*****HTC** **SOLID CARBIDE END MILLS****METRIC ENDMILLS - STANDARD LENGTH****SINGLE END SQUARE • 2-3-4 FLUTE****TIN COATED**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 3 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|---------------|------------|
| 1MM        | 3MM          | 38MM        | 952-2039      | 952-3039      | 952-4039      | \$9.26     |
| 1.5MM      | 5MM          | 38MM        | 952-2059      | 952-3059      | 952-4059      | \$9.26     |
| 2MM        | 6MM          | 38MM        | 952-2078      | 952-3078      | 952-4078      | \$7.53     |
| 2.5MM      | 7MM          | 38MM        | 952-2098      | 952-3098      | 952-4098      | \$7.53     |
| 3MM        | 12MM         | 38MM        | 952-2118      | 952-3118      | 952-4118      | \$6.13     |
| 3.5MM      | 12MM         | 50MM        | 952-2137      | 952-3137      | 952-4137      | \$9.77     |
| 4MM        | 14MM         | 50MM        | 952-2157      | 952-3157      | 952-4157      | \$9.59     |
| 4.5MM      | 14MM         | 50MM        | 952-2177      | 952-3177      | 952-4177      | \$10.03    |
| 5MM        | 16MM         | 50MM        | 952-2196      | 952-3196      | 952-4196      | \$10.58    |
| 6MM        | 19MM         | 63MM        | 952-2236      | 952-3236      | 952-4236      | \$10.64    |
| 7MM        | 19MM         | 63MM        | 952-2275      | 952-3275      | 952-4275      | \$14.27    |
| 8MM        | 19MM         | 63MM        | 952-2315      | 952-3315      | 952-4315      | \$13.89    |
| 9MM        | 22MM         | 70MM        | 952-2354      | 952-3354      | 952-4354      | \$23.93    |
| 10MM       | 22MM         | 70MM        | 952-2393      | 952-3393      | 952-4393      | \$21.73    |
| 11MM       | 25MM         | 70MM        | 952-2433      | 952-3433      | 952-4433      | \$31.97    |
| 12MM       | 25MM         | 75MM        | 952-2472      | 952-3472      | 952-4472      | \$27.80    |
| 14MM       | 30MM         | 88MM        | 952-2551      | 952-3551      | 952-4551      | \$48.15    |
| 16MM       | 32MM         | 88MM        | 952-2629      | 952-3629      | 952-4629      | \$64.05    |
| 18MM       | 36MM         | 100MM       | 952-2708      | 952-3708      | 952-4708      | \$74.09    |
| 20MM       | 38MM         | 100MM       | 952-2787      | 952-3787      | 952-4787      | \$88.17    |
| 22MM       | 38MM         | 100MM       | 952-2866      | 952-3866      | 952-4866      | \$107.99   |
| 25MM       | 38MM         | 100MM       | 952-2984      | 952-3984      | 952-4984      | \$126.37   |

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## SOLID CARBIDE END MILLS

**METRIC ENDMILLS - STANDARD LENGTH**

**SINGLE END SQUARE • 2-3-4 FLUTE**

**TICN COAT-HTC PROGRESSIVE COAT**



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 3 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|---------------|------------|
| 1MM        | 3MM          | 38MM        | 953-2039      | 953-3039      | 953-4039      | \$10.09    |
| 1.5MM      | 5MM          | 38MM        | 953-2059      | 953-3059      | 953-4059      | \$10.09    |
| 2MM        | 6MM          | 38MM        | 953-2078      | 953-3078      | 953-4078      | \$8.21     |
| 2.5MM      | 7MM          | 38MM        | 953-2098      | 953-3098      | 953-4098      | \$8.21     |
| 3MM        | 12MM         | 38MM        | 953-2118      | 953-3118      | 953-4118      | \$6.68     |
| 3.5MM      | 12MM         | 50MM        | 953-2137      | 953-3137      | 953-4137      | \$10.65    |
| 4MM        | 14MM         | 50MM        | 953-2157      | 953-3157      | 953-4157      | \$10.46    |
| 4.5MM      | 14MM         | 50MM        | 953-2177      | 953-3177      | 953-4177      | \$10.94    |
| 5MM        | 16MM         | 50MM        | 953-2196      | 953-3196      | 953-4196      | \$11.54    |
| 6MM        | 19MM         | 63MM        | 953-2236      | 953-3236      | 953-4236      | \$11.60    |
| 7MM        | 19MM         | 63MM        | 953-2275      | 953-3275      | 953-4275      | \$15.56    |
| 8MM        | 19MM         | 63MM        | 953-2315      | 953-3315      | 953-4315      | \$15.14    |
| 9MM        | 22MM         | 70MM        | 953-2354      | 953-3354      | 953-4354      | \$26.09    |
| 10MM       | 22MM         | 70MM        | 953-2393      | 953-3393      | 953-4393      | \$23.68    |
| 11MM       | 25MM         | 70MM        | 953-2433      | 953-3433      | 953-4433      | \$34.85    |
| 12MM       | 25MM         | 75MM        | 953-2472      | 953-3472      | 953-4472      | \$30.31    |
| 14MM       | 30MM         | 88MM        | 953-2551      | 953-3551      | 953-4551      | \$52.49    |
| 16MM       | 32MM         | 88MM        | 953-2629      | 953-3629      | 953-4629      | \$69.82    |
| 18MM       | 36MM         | 100MM       | 953-2708      | 953-3708      | 953-4708      | \$80.76    |
| 20MM       | 38MM         | 100MM       | 953-2787      | 953-3787      | 953-4787      | \$96.10    |
| 22MM       | 38MM         | 100MM       | 953-2866      | 953-3866      | 953-4866      | \$117.09   |
| 25MM       | 38MM         | 100MM       | 953-2984      | 953-3984      | 953-4984      | \$137.43   |

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**Series 954****Metalloy****HTC** **SOLID CARBIDE END MILLS****METRIC ENDMILLS - STANDARD LENGTH****SINGLE END SQUARE • 2-3-4 FLUTE****ALTIN COATED - **HTC** HARD COAT**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 3 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|---------------|------------|
| 1MM        | 3MM          | 38MM        | 954-2039      | 953-3039      | 954-4039      | \$10.19    |
| 1.5MM      | 5MM          | 38MM        | 954-2059      | 954-3059      | 954-4059      | \$10.19    |
| 2MM        | 6MM          | 38MM        | 954-2078      | 954-3078      | 954-4078      | \$8.29     |
| 2.5MM      | 7MM          | 38MM        | 954-2098      | 954-3098      | 954-4098      | \$8.29     |
| 3MM        | 12MM         | 38MM        | 954-2118      | 954-3118      | 954-4118      | \$6.75     |
| 3.5MM      | 12MM         | 50MM        | 954-2137      | 954-3137      | 954-4137      | \$10.75    |
| 4MM        | 14MM         | 50MM        | 954-2157      | 954-3157      | 954-4157      | \$10.55    |
| 4.5MM      | 14MM         | 50MM        | 954-2177      | 954-3177      | 954-4177      | \$11.04    |
| 5MM        | 16MM         | 50MM        | 954-2196      | 954-3196      | 954-4196      | \$11.64    |
| 6MM        | 19MM         | 63MM        | 954-2236      | 954-3236      | 954-4236      | \$11.71    |
| 7MM        | 19MM         | 63MM        | 954-2275      | 954-3275      | 954-4275      | \$15.70    |
| 8MM        | 19MM         | 63MM        | 954-2315      | 954-3315      | 954-4315      | \$15.28    |
| 9MM        | 22MM         | 70MM        | 954-2354      | 954-3354      | 954-4354      | \$26.34    |
| 10MM       | 22MM         | 70MM        | 954-2393      | 954-3393      | 954-4393      | \$23.91    |
| 11MM       | 25MM         | 70MM        | 954-2433      | 954-3433      | 954-4433      | \$35.17    |
| 12MM       | 25MM         | 75MM        | 954-2472      | 954-3472      | 954-4472      | \$30.59    |
| 14MM       | 30MM         | 88MM        | 954-2551      | 954-3551      | 954-4551      | \$52.97    |
| 16MM       | 32MM         | 88MM        | 954-2629      | 954-3629      | 954-4629      | \$70.46    |
| 18MM       | 36MM         | 100MM       | 954-2708      | 954-3708      | 954-4708      | \$81.50    |
| 20MM       | 38MM         | 100MM       | 954-2787      | 954-3787      | 954-4787      | \$96.99    |
| 22MM       | 38MM         | 100MM       | 954-2866      | 954-3866      | 954-4866      | \$118.79   |
| 25MM       | 38MM         | 100MM       | 954-2984      | 954-3984      | 954-4984      | \$139.01   |

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## SOLID CARBIDE END MILLS

### METRIC ENDMILLS - STANDARD LENGTH

SINGLE END BALL • 2-4 FLUTE

## UNCOATED



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1MM        | 3MM          | 38MM        | 955-2039      | 955-4039      | \$9.60     |
| 1.5MM      | 5MM          | 38MM        | 955-2059      | 955-4059      | \$9.60     |
| 2MM        | 6MM          | 38MM        | 955-2078      | 955-4078      | \$7.92     |
| 2.5MM      | 7MM          | 38MM        | 955-2098      | 955-4098      | \$7.92     |
| 3MM        | 12MM         | 38MM        | 955-2118      | 955-4118      | \$7.92     |
| 3.5MM      | 12MM         | 50MM        | 955-2137      | 955-4137      | \$10.92    |
| 4MM        | 14MM         | 50MM        | 955-2157      | 955-4157      | \$10.56    |
| 4.5MM      | 14MM         | 50MM        | 955-2177      | 955-4177      | \$10.92    |
| 5MM        | 16MM         | 50MM        | 955-2196      | 955-4196      | \$11.62    |
| 6MM        | 19MM         | 63MM        | 955-2236      | 955-4236      | \$13.56    |
| 7MM        | 19MM         | 63MM        | 955-2275      | 955-4275      | \$21.20    |
| 8MM        | 19MM         | 63MM        | 955-2315      | 955-4315      | \$16.67    |
| 9MM        | 22MM         | 70MM        | 955-2354      | 955-4354      | \$27.54    |
| 10MM       | 22MM         | 70MM        | 955-2393      | 955-4393      | \$24.90    |
| 11MM       | 25MM         | 70MM        | 955-2433      | 955-4433      | \$33.00    |
| 12MM       | 25MM         | 75MM        | 955-2472      | 955-4472      | \$32.00    |
| 14MM       | 30MM         | 88MM        | 955-2551      | 955-4551      | \$47.00    |
| 16MM       | 32MM         | 88MM        | 955-2629      | 955-4629      | \$62.86    |
| 18MM       | 36MM         | 100MM       | 955-2708      | 955-4708      | \$83.52    |
| 20MM       | 38MM         | 100MM       | 955-2787      | 955-4787      | \$103.84   |
| 22MM       | 38MM         | 100MM       | 955-2866      | 955-4866      | \$123.20   |
| 25MM       | 38MM         | 100MM       | 955-2984      | 955-4984      | \$151.36   |

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**Series 957*****Metalloy*****HTC** 

# SOLID CARBIDE END MILLS

**METRIC ENDMILLS - STANDARD LENGTH****SINGLE END BALL • 2-4 FLUTE****TIN COATED**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1MM        | 3MM          | 38MM        | 957-2039      | 957-4039      | \$10.20    |
| 1.5MM      | 5MM          | 38MM        | 957-2059      | 957-4059      | \$10.20    |
| 2MM        | 6MM          | 38MM        | 957-2078      | 957-4078      | \$8.51     |
| 2.5MM      | 7MM          | 38MM        | 957-2098      | 957-4098      | \$8.51     |
| 3MM        | 12MM         | 38MM        | 957-2118      | 957-4118      | \$8.51     |
| 3.5MM      | 12MM         | 50MM        | 957-2137      | 957-4137      | \$11.65    |
| 4MM        | 14MM         | 50MM        | 957-2157      | 957-4157      | \$11.45    |
| 4.5MM      | 14MM         | 50MM        | 957-2177      | 957-4177      | \$11.65    |
| 5MM        | 16MM         | 50MM        | 957-2196      | 957-4196      | \$12.68    |
| 6MM        | 19MM         | 63MM        | 957-2236      | 957-4236      | \$14.61    |
| 7MM        | 19MM         | 63MM        | 957-2275      | 957-4275      | \$22.37    |
| 8MM        | 19MM         | 63MM        | 957-2315      | 957-4315      | \$17.81    |
| 9MM        | 22MM         | 70MM        | 957-2354      | 957-4354      | \$28.97    |
| 10MM       | 22MM         | 70MM        | 957-2393      | 957-4393      | \$26.05    |
| 11MM       | 25MM         | 70MM        | 957-2433      | 957-4433      | \$35.09    |
| 12MM       | 25MM         | 75MM        | 957-2472      | 957-4472      | \$34.11    |
| 14MM       | 30MM         | 88MM        | 957-2551      | 957-4551      | \$49.21    |
| 16MM       | 32MM         | 88MM        | 957-2629      | 957-4629      | \$65.18    |
| 18MM       | 36MM         | 100MM       | 957-2708      | 957-4708      | \$85.74    |
| 20MM       | 38MM         | 100MM       | 957-2787      | 957-4787      | \$106.03   |
| 22MM       | 38MM         | 100MM       | 957-2866      | 957-4866      | \$126.15   |
| 25MM       | 38MM         | 100MM       | 957-2984      | 957-4984      | \$154.00   |

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## SOLID CARBIDE END MILLS

METRIC ENDMILLS - STANDARD LENGTH

SINGLE END BALL • 2-4 FLUTE

TICN COAT - HTC PROGRESSIVE COAT



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1MM        | 3MM          | 38MM        | 958-2039      | 958-4039      | \$10.47    |
| 1.5MM      | 5MM          | 38MM        | 958-2059      | 958-4059      | \$10.47    |
| 2MM        | 6MM          | 38MM        | 958-2078      | 958-4078      | \$8.64     |
| 2.5MM      | 7MM          | 38MM        | 958-2098      | 958-4098      | \$8.64     |
| 3MM        | 12MM         | 38MM        | 958-2118      | 958-4118      | \$8.64     |
| 3.5MM      | 12MM         | 50MM        | 958-2137      | 958-4137      | \$11.91    |
| 4MM        | 14MM         | 50MM        | 958-2157      | 958-4157      | \$11.52    |
| 4.5MM      | 14MM         | 50MM        | 958-2177      | 958-4177      | \$11.93    |
| 5MM        | 16MM         | 50MM        | 958-2196      | 958-4196      | \$12.67    |
| 6MM        | 19MM         | 63MM        | 958-2236      | 958-4236      | \$14.79    |
| 7MM        | 19MM         | 63MM        | 958-2275      | 958-4275      | \$23.12    |
| 8MM        | 19MM         | 63MM        | 958-2315      | 958-4315      | \$18.18    |
| 9MM        | 22MM         | 70MM        | 958-2354      | 958-4354      | \$30.02    |
| 10MM       | 22MM         | 70MM        | 958-2393      | 958-4393      | \$27.15    |
| 11MM       | 25MM         | 70MM        | 958-2433      | 958-4433      | \$35.98    |
| 12MM       | 25MM         | 75MM        | 958-2472      | 958-4472      | \$34.88    |
| 14MM       | 30MM         | 88MM        | 958-2551      | 958-4551      | \$51.23    |
| 16MM       | 32MM         | 88MM        | 958-2629      | 958-4629      | \$66.57    |
| 18MM       | 36MM         | 100MM       | 958-2708      | 958-4708      | \$87.38    |
| 20MM       | 38MM         | 100MM       | 958-2787      | 958-4787      | \$109.18   |
| 22MM       | 38MM         | 100MM       | 958-2866      | 958-4866      | \$129.38   |
| 25MM       | 38MM         | 100MM       | 958-2984      | 958-4984      | \$158.98   |

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**Series 959****Metalloy****HTC** **SOLID CARBIDE END MILLS****METRIC ENDMILLS - STANDARD LENGTH****SINGLE END BALL • 2-4 FLUTE****ALTIN COATED - **HTC** HARD COAT**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 1MM        | 3MM          | 38MM        | 959-2039      | 959-4039      | \$10.56    |
| 1.5MM      | 5MM          | 38MM        | 959-2059      | 959-4059      | \$10.56    |
| 2MM        | 6MM          | 38MM        | 959-2078      | 959-4078      | \$8.72     |
| 2.5MM      | 7MM          | 38MM        | 959-2098      | 959-4098      | \$8.72     |
| 3MM        | 12MM         | 38MM        | 959-2118      | 959-4118      | \$8.72     |
| 3.5MM      | 12MM         | 50MM        | 959-2137      | 959-4137      | \$12.03    |
| 4MM        | 14MM         | 50MM        | 959-2157      | 959-4157      | \$11.64    |
| 4.5MM      | 14MM         | 50MM        | 959-2177      | 959-4177      | \$12.04    |
| 5MM        | 16MM         | 50MM        | 959-2196      | 959-4196      | \$12.79    |
| 6MM        | 19MM         | 63MM        | 959-2236      | 959-4236      | \$14.96    |
| 7MM        | 19MM         | 63MM        | 959-2275      | 959-4275      | \$23.32    |
| 8MM        | 19MM         | 63MM        | 959-2315      | 959-4315      | \$18.47    |
| 9MM        | 22MM         | 70MM        | 959-2354      | 959-4354      | \$30.29    |
| 10MM       | 22MM         | 70MM        | 959-2393      | 959-4393      | \$27.38    |
| 11MM       | 25MM         | 70MM        | 959-2433      | 959-4433      | \$36.30    |
| 12MM       | 25MM         | 75MM        | 959-2472      | 959-4472      | \$35.20    |
| 14MM       | 30MM         | 88MM        | 959-2551      | 959-4551      | \$51.70    |
| 16MM       | 32MM         | 88MM        | 959-2629      | 959-4629      | \$68.14    |
| 18MM       | 36MM         | 100MM       | 959-2708      | 959-4708      | \$89.87    |
| 20MM       | 38MM         | 100MM       | 959-2787      | 959-4787      | \$109.22   |
| 22MM       | 38MM         | 100MM       | 959-2866      | 959-4866      | \$131.52   |
| 25MM       | 38MM         | 100MM       | 959-2984      | 959-4984      | \$160.49   |

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## SOLID CARBIDE END MILLS

### METRIC ENDMILLS - LONG & EXTRA LONG LENGTH

### SINGLE END SQUARE • 2-4 FLUTE

## UNCOATED



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 3MM        | 25MM         | 75MM        | 460-2119      | 460-4119      | \$8.91     |
| 3MM        | 25MM         | 100MM       | 460-2122      | 460-4122      | \$12.93    |
| 4MM        | 19MM         | 57MM        | 460-2160      | 460-4160      | \$11.17    |
| 4MM        | 25MM         | 75MM        | 460-2162      | 460-4162      | \$12.38    |
| 4MM        | 25MM         | 100MM       | 460-2164      | 460-4164      | \$14.80    |
| 4MM        | 50MM         | 100MM       | 460-2166      | 460-4166      | \$16.03    |
| 5MM        | 25MM         | 75MM        | 460-2200      | 460-4200      | \$12.50    |
| 5MM        | 30MM         | 100MM       | 460-2202      | 460-4202      | \$14.09    |
| 6MM        | 25MM         | 75MM        | 460-2240      | 460-4240      | \$15.16    |
| 6MM        | 30MM         | 100MM       | 460-2242      | 460-4242      | \$17.10    |
| 6MM        | 50MM         | 100MM       | 460-2244      | 460-4244      | \$19.05    |
| 8MM        | 30MM         | 100MM       | 460-2320      | 460-4320      | \$18.37    |
| 8MM        | 50MM         | 150MM       | 460-2322      | 460-4322      | \$22.91    |
| 10MM       | 38MM         | 100MM       | 460-2340      | 460-4340      | \$31.57    |
| 10MM       | 75MM         | 150MM       | 460-2342      | 460-4342      | \$46.00    |
| 12MM       | 50MM         | 100MM       | 460-2480      | 460-4480      | \$44.63    |
| 12MM       | 75MM         | 150MM       | 460-2482      | 460-4482      | \$63.94    |
| 14MM       | 50MM         | 125MM       | 460-2554      | 460-4554      | \$71.03    |
| 14MM       | 75MM         | 150MM       | 460-2556      | 460-4556      | \$79.41    |
| 16M        | 75MM         | 150MM       | 460-2640      | 460-4640      | \$92.73    |
| 18MM       | 75MM         | 150MM       | 460-2712      | 460-4712      | \$119.00   |
| 20MM       | 75MM         | 150MM       | 460-2790      | 460-4790      | \$163.00   |
| 25MM       | 75MM         | 150MM       | 460-2990      | 460-4990      | \$231.00   |

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**Series 462*****Metalloy*****HTC** **SOLID CARBIDE END MILLS****METRIC ENDMILLS - LONG & EXTRA LONG LENGTH****SINGLE END SQUARE • 2-4 FLUTE****TIN COATED**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 3MM        | 25MM         | 75MM        | 462-2119      | 462-4119      | \$10.02    |
| 3MM        | 25MM         | 100MM       | 462-2122      | 462-4122      | \$14.16    |
| 4MM        | 19MM         | 57MM        | 462-2160      | 462-4160      | \$12.67    |
| 4MM        | 25MM         | 75MM        | 462-2162      | 462-4162      | \$13.11    |
| 4MM        | 25MM         | 100MM       | 462-2164      | 462-4164      | \$15.40    |
| 4MM        | 50MM         | 100MM       | 462-2166      | 462-4166      | \$17.47    |
| 5MM        | 25MM         | 75MM        | 462-2200      | 462-4200      | \$13.11    |
| 5MM        | 30MM         | 100MM       | 462-2202      | 462-4202      | \$14.99    |
| 6MM        | 25MM         | 75MM        | 462-2240      | 462-4240      | \$16.05    |
| 6MM        | 30MM         | 100MM       | 462-2242      | 462-4242      | \$17.97    |
| 6MM        | 50MM         | 100MM       | 462-2244      | 462-4244      | \$19.03    |
| 8MM        | 30MM         | 100MM       | 462-2320      | 462-4320      | \$19.14    |
| 8MM        | 50MM         | 150MM       | 462-2322      | 462-4322      | \$24.18    |
| 10MM       | 38MM         | 100MM       | 462-2340      | 462-4340      | \$33.57    |
| 10MM       | 75MM         | 150MM       | 462-2342      | 462-4342      | \$47.83    |
| 12MM       | 50MM         | 100MM       | 462-2480      | 462-4480      | \$46.51    |
| 12MM       | 75MM         | 150MM       | 462-2482      | 462-4482      | \$66.92    |
| 14MM       | 50MM         | 125MM       | 462-2554      | 462-4554      | \$72.09    |
| 14MM       | 75MM         | 150MM       | 462-2556      | 462-4556      | \$81.21    |
| 16M        | 75MM         | 150MM       | 462-2640      | 462-4640      | \$96.10    |
| 18MM       | 75MM         | 150MM       | 462-2712      | 462-4712      | \$123.00   |
| 20MM       | 75MM         | 150MM       | 462-2790      | 462-4790      | \$186.00   |
| 25MM       | 75MM         | 150MM       | 462-2990      | 462-4990      | \$235.00   |

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## SOLID CARBIDE END MILLS

### METRIC ENDMILLS - LONG & EXTRA LONG LENGTH

#### SINGLE END SQUARE • 2-4 FLUTE

### ALTIN COATED - **HTC** HARD COAT



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|--------------|-------------|---------------|---------------|------------|
| 3MM        | 25MM         | 75MM        | 464-2119      | 464-4119      | \$10.91    |
| 3MM        | 25MM         | 100MM       | 464-2122      | 464-4122      | \$14.97    |
| 4MM        | 19MM         | 57MM        | 464-2160      | 464-4160      | \$13.51    |
| 4MM        | 25MM         | 75MM        | 464-2162      | 464-4162      | \$14.07    |
| 4MM        | 25MM         | 100MM       | 464-2164      | 464-4164      | \$16.13    |
| 4MM        | 50MM         | 100MM       | 464-2166      | 464-4166      | \$18.57    |
| 5MM        | 25MM         | 75MM        | 464-2200      | 464-4200      | \$14.57    |
| 5MM        | 30MM         | 100MM       | 464-2202      | 464-4202      | \$16.10    |
| 6MM        | 25MM         | 75MM        | 464-2240      | 464-4240      | \$17.15    |
| 6MM        | 30MM         | 100MM       | 464-2242      | 464-4242      | \$19.03    |
| 6MM        | 50MM         | 100MM       | 464-2244      | 464-4244      | \$21.07    |
| 8MM        | 30MM         | 100MM       | 464-2320      | 464-4320      | \$20.14    |
| 8MM        | 50MM         | 150MM       | 464-2322      | 464-4322      | \$26.06    |
| 10MM       | 38MM         | 100MM       | 464-2340      | 464-4340      | \$35.00    |
| 10MM       | 75MM         | 150MM       | 464-2342      | 464-4342      | \$49.88    |
| 12MM       | 50MM         | 100MM       | 464-2480      | 464-4480      | \$48.01    |
| 12MM       | 75MM         | 150MM       | 464-2482      | 464-4482      | \$68.00    |
| 14MM       | 50MM         | 125MM       | 464-2554      | 464-4554      | \$76.00    |
| 14MM       | 75MM         | 150MM       | 464-2556      | 464-4556      | \$84.51    |
| 16M        | 75MM         | 150MM       | 464-2640      | 464-4640      | \$98.11    |
| 18MM       | 75MM         | 150MM       | 464-2712      | 464-4712      | \$126.00   |
| 20MM       | 75MM         | 150MM       | 464-2790      | 464-4790      | \$190.02   |
| 25MM       | 75MM         | 150MM       | 464-2990      | 464-4990      | \$239.00   |

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**Series 585/586/587****Metalloy****HTC** **SOLID CARBIDE DRILLS****CENTER DRILL****60° - 82° - 90°****UNCOATED**

| SIZE | DRILL DIAMETER | O.A. LENGTH | BODY DIAMETER | 60° PART# | LIST PRICE | 82° PART# | LIST PRICE | 90° PART# | LIST PRICE |
|------|----------------|-------------|---------------|-----------|------------|-----------|------------|-----------|------------|
| 00   | .025           | 1-1/2"      | 1/8"          | 585-0250  | \$10.00    | 586-0250  | \$11.00    | 587-0250  | \$11.00    |
| 0    | .031           | 1-1/2"      | 1/8"          | 585-0310  | \$9.00     | 586-0310  | \$9.90     | 587-0310  | \$9.90     |
| 1    | .046           | 1-1/2"      | 1/8"          | 585-0460  | \$8.50     | 586-0460  | \$9.35     | 587-0460  | \$9.35     |
| 2    | .078           | 2"          | 3/16"         | 585-0782  | \$9.00     | 586-0782  | \$9.90     | 587-0782  | \$9.90     |
| 3    | .109           | 2"          | 1/4"          | 585-1092  | \$10.00    | 586-1092  | \$11.00    | 587-1092  | \$11.00    |
| 4    | .125           | 2-1/2"      | 5/16"         | 585-1250  | \$16.00    | 586-1250  | \$17.60    | 587-1250  | \$17.60    |
| 5    | .187           | 2-3/4"      | 7/16"         | 585-1870  | \$28.00    | 586-1870  | \$30.80    | 587-1870  | \$30.80    |
| 6    | .218           | 3"          | 1/2"          | 585-2183  | \$36.00    | 586-2183  | \$39.60    | 587-2183  | \$39.60    |
| 7    | .250           | 3-1/2"      | 5/8"          | 585-2500  | \$76.00    | 586-2500  | \$83.60    | 587-2500  | \$83.60    |
| 8    | .312           | 4"          | 3/4"          | 585-3124  | \$108.00   | 586-3124  | \$118.80   | 587-3124  | \$118.80   |
| 1    | .046           | 4"          | 1/8"          | 585-0464  | \$15.00    | 586-0464  | \$16.50    | 587-0464  | \$16.50    |
| 2    | .078           | 4"          | 3/16"         | 585-0784  | \$25.00    | 586-0784  | \$27.50    | 587-0784  | \$27.50    |
| 3    | .109           | 4"          | 1/4"          | 585-1094  | \$29.00    | 586-1094  | \$31.90    | 587-1094  | \$31.90    |
| 3    | .109           | 6"          | 1/4"          | 585-1096  | \$37.00    | 586-1096  | \$40.70    | 587-1096  | \$40.70    |
| 4    | .125           | 4"          | 5/16"         | 585-1254  | \$35.00    | 586-1254  | \$38.50    | 587-1254  | \$38.50    |
| 4    | .125           | 6"          | 5/16"         | 585-1256  | \$45.00    | 586-1256  | \$49.50    | 587-1256  | \$49.50    |
| 5    | .187           | 4"          | 7/16"         | 585-1874  | \$53.64    | 586-1874  | \$58.30    | 587-1874  | \$58.30    |
| 5    | .187           | 6"          | 7/16"         | 585-1876  | \$64.00    | 586-1876  | \$70.40    | 587-1876  | \$70.40    |
| 6    | .218           | 4"          | 1/2"          | 585-2184  | \$52.00    | 586-2184  | \$57.20    | 587-2184  | \$57.20    |
| 6    | .218           | 6"          | 1/2"          | 585-2186  | \$78.00    | 586-2186  | \$85.20    | 587-2186  | \$85.20    |

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## SOLID CARBIDE DRILLS

SPADE DRILLS - SPOTTING DRILL

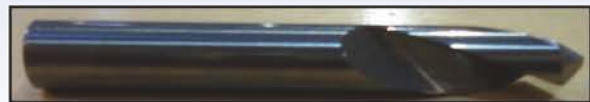
UNCOATED

### SPADE DRILL



| CUTTER DIA | O.A. LENGTH | PART #   | LIST PRICE |
|------------|-------------|----------|------------|
| 3/32"      | 1-1/2"      | 590-0938 | \$5.00     |
| 1/8"       | 1-1/2"      | 590-1250 | \$5.00     |
| 5/32"      | 2"          | 590-1562 | \$7.00     |
| 3/16"      | 2"          | 590-1875 | \$7.00     |
| 7/32"      | 2"          | 590-2188 | \$11.00    |
| 1/4"       | 2"          | 590-2500 | \$10.00    |
| 9/32"      | 2"          | 590-2812 | \$15.00    |
| 5/16"      | 2-1/2"      | 590-3125 | \$14.00    |
| 11/32"     | 2-1/2"      | 590-3438 | \$20.00    |
| 3/8"       | 2-1/2"      | 590-3750 | \$18.00    |
| 13/32"     | 2-1/2"      | 590-4062 | \$26.00    |
| 7/16"      | 2-3/4"      | 590-4375 | \$24.00    |
| 15/32"     | 2-1/2"      | 590-4688 | \$34.00    |
| 1/2"       | 3"          | 590-5000 | \$32.00    |

### SPOTTING DRILL 60-90-120



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | PART #   | LIST PRICE |
|------------|--------------|-------------|----------|------------|
| 1/4        | 1            | 2-1/2       | 595-2500 | \$15.00    |
| 1/4        | 1-3/8        | 4           | 595-2504 | \$24.00    |
| 3/8        | 1            | 2-1/2       | 595-3750 | \$23.00    |
| 3/8        | 1-1/2        | 6           | 595-3756 | \$39.00    |
| 1/2        | 1-1/4        | 3           | 595-5000 | \$43.00    |
| 1/2        | 1-1/2        | 6           | 595-5006 | \$67.00    |
| 5/8        | 1-1/4        | 3-1/2       | 595-6250 | \$61.00    |
| 5/8        | 2            | 6           | 595-6256 | \$88.00    |
| 3/4        | 1-1/2        | 4           | 595-7500 | \$84.00    |
| 3/4        | 2            | 6           | 595-7506 | \$120.00   |

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**Series 500*****Metalloy*****HTC** **SOLID CARBIDE DRILLS****DRILL MILL • SINGLE END • 2 OR 4 FLUTE 90° POINT****UNCOATED**

| CUTTER DIA | SHANK DIAMETER | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|----------------|--------------|-------------|---------------|---------------|------------|
| 1/8"       | 1/8"           | 1/2"         | 1-1/2"      | 500-2125      | 500-4125      | \$9.76     |
| 3/16"      | 3/16"          | 5/8"         | 2"          | 500-2187      | 500-4187      | \$12.00    |
| 1/4"       | 1/4"           | 3/4"         | 2-1/2"      | 500-2250      | 500-4250      | \$14.46    |
| 5/16"      | 5/16"          | 13/16"       | 2-1/2"      | 500-2312      | 500-4312      | \$19.50    |
| 3/8"       | 3/8"           | 1"           | 2-1/2"      | 500-2375      | 500-4375      | \$21.76    |
| 7/16"      | 7/16"          | 1"           | 2-1/2"      | 500-2437      | 500-4437      | \$36.00    |
| 1/2"       | 1/2"           | 1"           | 3"          | 500-2500      | 500-4500      | \$39.00    |
| 5/8"       | 5/8"           | 1-1/4"       | 3-1/2"      | 500-2625      | 500-4625      | \$66.00    |
| 3/4"       | 3/4"           | 1-1/2"       | 4"          | 500-2750      | 500-4750      | \$105.00   |

**Series 505****SOLID CARBIDE DRILLS****DRILL MILL • SINGLE END • 2 OR 4 FLUTE 90° POINT****ALTIN COATED - **HTC** HARD COAT**

| CUTTER DIA | SHANK DIAMETER | FLUTE LENGTH | O.A. LENGTH | 2 FLUTE PART# | 4 FLUTE PART# | LIST PRICE |
|------------|----------------|--------------|-------------|---------------|---------------|------------|
| 1/8"       | 1/8"           | 1/2"         | 1-1/2"      | 505-2125      | 505-4125      | \$11.80    |
| 3/16"      | 3/16"          | 5/8"         | 2"          | 505-2187      | 505-4187      | \$15.00    |
| 1/4"       | 1/4"           | 3/4"         | 2-1/2"      | 505-2250      | 505-4250      | \$19.56    |
| 5/16"      | 5/16"          | 13/16"       | 2-1/2"      | 505-2312      | 505-4312      | \$26.50    |
| 3/8"       | 3/8"           | 1"           | 2-1/2"      | 505-2375      | 505-4375      | \$28.76    |
| 7/16"      | 7/16"          | 1"           | 2-1/2"      | 505-2437      | 505-4437      | \$45.60    |
| 1/2"       | 1/2"           | 1"           | 3"          | 505-2500      | 505-4500      | \$49.00    |
| 5/8"       | 5/8"           | 1-1/4"       | 3-1/2"      | 505-2625      | 505-4625      | \$79.00    |
| 3/4"       | 3/4"           | 1-1/2"       | 4"          | 505-2750      | 505-4750      | \$117.50   |

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## SOLID CARBIDE DRILLS

JOBBER LENGTH • FRACTIONAL SIZES

UNCOATED



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | PART#    | LIST PRICE |
|------------|--------------|-------------|----------|------------|
| 1/16"      | 3/4"         | 1-1/2"      | 550-0625 | \$5.96     |
| 5/64"      | 7/8"         | 1-3/4"      | 550-0781 | \$6.30     |
| 3/32"      | 1"           | 2"          | 550-0938 | \$7.14     |
| 7/64"      | 1-1/4"       | 2-1/4"      | 550-1094 | \$7.84     |
| 1/8"       | 1-1/4"       | 2-1/4"      | 550-1250 | \$8.06     |
| 9/64"      | 1-3/8"       | 2-1/2"      | 550-1406 | \$9.66     |
| 5/32"      | 1-3/8"       | 2-1/2"      | 550-1562 | \$10.16    |
| 11/64"     | 1-5/8"       | 2-3/4"      | 550-1719 | \$11.90    |
| 3/16"      | 1-5/8"       | 2-3/4"      | 550-1875 | \$11.90    |
| 13/64"     | 1-3/4"       | 3"          | 550-2031 | \$14.50    |
| 7/32"      | 1-3/4"       | 3"          | 550-2188 | \$14.78    |
| 15/64"     | 2"           | 3-1/4"      | 550-2344 | \$17.64    |
| 1/4"       | 2"           | 3-1/4"      | 550-2500 | \$17.44    |
| 17/64"     | 2-1/8"       | 3-1/2"      | 550-2656 | \$18.76    |
| 9/32"      | 2-1/8"       | 3-1/2"      | 550-2812 | \$20.00    |
| 19/64"     | 2-3/8"       | 3-3/4"      | 550-2969 | \$22.20    |
| 5/16"      | 2-3/8"       | 3-3/4"      | 550-3125 | \$23.38    |
| 21/64"     | 2-1/2"       | 4"          | 550-3281 | \$25.98    |
| 11/32"     | 2-1/2"       | 4"          | 550-3438 | \$28.70    |
| 23/64"     | 2-3/4"       | 4-1/4"      | 550-3594 | \$31.24    |
| 3/8"       | 2-3/4"       | 4-1/4"      | 550-3750 | \$33.40    |
| 25/64"     | 2-7/8"       | 4-1/2"      | 550-3906 | \$38.64    |
| 13/32"     | 2-7/8"       | 4-1/2"      | 550-4062 | \$42.98    |
| 27/64"     | 2-7/8"       | 4-1/2"      | 550-4219 | \$46.98    |
| 7/16"      | 2-7/8"       | 4-1/2"      | 550-4375 | \$50.90    |
| 29/64"     | 3"           | 4-3/4"      | 550-4531 | \$55.24    |
| 15/32"     | 3"           | 4-3/4"      | 550-4688 | \$59.44    |
| 31/64"     | 3"           | 4-3/4"      | 550-4844 | \$61.26    |
| 1/2"       | 3"           | 4-3/4"      | 550-5000 | \$63.28    |
| 9/16"      | 3-1/4"       | 5"          | 550-5625 | \$116.46   |
| 5/8"       | 4-1/4"       | 6"          | 550-6250 | \$136.50   |
| 3/4"       | 4-1/4"       | 6"          | 550-7500 | \$179.42   |

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**Series 552****Metalloy****HTC** **SOLID CARBIDE DRILLS****JOBBER LENGTH • FRACTIONAL SIZES • 3 FLUTE 150° POINT  
UNCOATED**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | PART#    | LIST PRICE |
|------------|--------------|-------------|----------|------------|
| 1/16"      | 3/4"         | 1-1/2"      | 552-0625 | \$6.74     |
| 5/64"      | 7/8"         | 1-3/4"      | 552-0781 | \$7.12     |
| 3/32"      | 1"           | 2"          | 552-0938 | \$8.07     |
| 7/64"      | 1-1/4"       | 2-1/4"      | 552-1094 | \$8.86     |
| 1/8"       | 1-1/4"       | 2-1/4"      | 552-1250 | \$9.11     |
| 9/64"      | 1-3/8"       | 2-1/2"      | 552-1406 | \$10.92    |
| 5/32"      | 1-3/8"       | 2-1/2"      | 552-1562 | \$11.48    |
| 11/64"     | 1-5/8"       | 2-3/4"      | 552-1719 | \$13.45    |
| 3/16"      | 1-5/8"       | 2-3/4"      | 552-1875 | \$13.45    |
| 13/64"     | 1-3/4"       | 3"          | 552-2031 | \$16.39    |
| 7/32"      | 1-3/4"       | 3"          | 552-2188 | \$16.71    |
| 15/64"     | 2"           | 3-1/4"      | 552-2344 | \$19.94    |
| 1/4"       | 2"           | 3-1/4"      | 552-2500 | \$19.71    |
| 17/64"     | 2-1/8"       | 3-1/2"      | 552-2656 | \$21.20    |
| 9/32"      | 2-1/8"       | 3-1/2"      | 552-2812 | \$22.60    |
| 19/64"     | 2-3/8"       | 3-3/4"      | 552-2969 | \$25.09    |
| 5/16"      | 2-3/8"       | 3-3/4"      | 552-3125 | \$26.42    |
| 21/64"     | 2-1/2"       | 4"          | 552-3281 | \$29.36    |
| 11/32"     | 2-1/2"       | 4"          | 552-3438 | \$32.43    |
| 23/64"     | 2-3/4"       | 4-1/4"      | 552-3594 | \$35.31    |
| 3/8"       | 2-3/4"       | 4-1/4"      | 552-3750 | \$37.75    |
| 25/64"     | 2-7/8"       | 4-1/2"      | 552-3906 | \$43.67    |
| 13/32"     | 2-7/8"       | 4-1/2"      | 552-4062 | \$48.57    |
| 27/64"     | 2-7/8"       | 4-1/2"      | 552-4219 | \$53.09    |
| 7/16"      | 2-7/8"       | 4-1/2"      | 552-4375 | \$57.52    |
| 29/64"     | 3"           | 4-3/4"      | 552-4531 | \$62.43    |
| 15/32"     | 3"           | 4-3/4"      | 552-4688 | \$67.17    |
| 31/64"     | 3"           | 4-3/4"      | 552-4844 | \$69.23    |
| 1/2"       | 3"           | 4-3/4"      | 552-5000 | \$71.51    |
| 9/16"      | 3-1/4"       | 5"          | 552-5625 | \$131.60   |
| 5/8"       | 4-1/4"       | 6"          | 552-6250 | \$154.25   |
| 3/4"       | 4-1/4"       | 6"          | 552-7500 | \$202.75   |

**OTHER SIZES AVAILABLE**

## SOLID CARBIDE DRILLS

JOBBER LENGTH • LETTER SIZES

UNCOATED



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | PART#    | LIST PRICE |
|------------|--------------|-------------|----------|------------|
| A          | 2"           | 3-1/4"      | 555-2344 | \$22.22    |
| B          | 2"           | 3-1/4"      | 555-2380 | \$22.86    |
| C          | 2"           | 3-1/4"      | 555-2420 | \$23.00    |
| D          | 2"           | 3-1/4"      | 555-2460 | \$23.60    |
| E          | 2"           | 3-1/4"      | 555-2500 | \$21.34    |
| F          | 2"           | 3-1/4"      | 555-2570 | \$24.96    |
| G          | 2-1/8"       | 3-1/2"      | 555-2610 | \$25.86    |
| H          | 2-1/8"       | 3-1/2"      | 555-2660 | \$26.04    |
| I          | 2-1/8"       | 3-1/2"      | 555-2720 | \$26.48    |
| J          | 2-1/8"       | 3-1/2"      | 555-2770 | \$27.20    |
| K          | 2-1/8"       | 3-1/2"      | 555-2810 | \$27.54    |
| L          | 2-1/8"       | 3-1/2"      | 555-2900 | \$28.66    |
| M          | 2-3/8"       | 3-3/4"      | 555-2950 | \$29.72    |
| N          | 2-3/8"       | 3-3/4"      | 555-3020 | \$31.48    |
| O          | 2-3/8"       | 3-3/4"      | 555-3160 | \$33.32    |
| P          | 2-3/8"       | 3-3/4"      | 555-3230 | \$34.46    |
| Q          | 2-1/2"       | 4"          | 555-3320 | \$36.70    |
| R          | 2-1/2"       | 4"          | 555-3390 | \$37.76    |
| S          | 2-1/2"       | 4"          | 555-3480 | \$40.26    |
| T          | 2-3/4"       | 4-1/4"      | 555-3580 | \$41.70    |
| U          | 2-3/4"       | 4-1/4"      | 555-3680 | \$43.80    |
| V          | 2-3/4"       | 4-1/4"      | 555-3770 | \$47.34    |
| W          | 2-7/8"       | 4-1/2"      | 555-3860 | \$49.74    |
| X          | 2-7/8"       | 4-1/2"      | 555-3970 | \$54.26    |
| Y          | 2-7/8"       | 4-1/2"      | 555-4040 | \$56.14    |
| Z          | 2-7/8"       | 4-1/2"      | 555-4130 | \$69.64    |

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**Series 553*****Metalloy*****HTC** **SOLID CARBIDE DRILLS****JOBBER LENGTH • LETTER SIZES - 3 FLUTE 150° POINT  
UNCOATED**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | PART#    | LIST PRICE |
|------------|--------------|-------------|----------|------------|
| A          | 2"           | 3-1/4"      | 553-2344 | \$25.11    |
| B          | 2"           | 3-1/4"      | 553-2380 | \$25.84    |
| C          | 2"           | 3-1/4"      | 553-2420 | \$25.99    |
| D          | 2"           | 3-1/4"      | 553-2460 | \$26.67    |
| E          | 2"           | 3-1/4"      | 553-2500 | \$24.12    |
| F          | 2"           | 3-1/4"      | 553-2570 | \$28.21    |
| G          | 2-1/8"       | 3-1/2"      | 553-2610 | \$29.23    |
| H          | 2-1/8"       | 3-1/2"      | 553-2660 | \$29.43    |
| I          | 2-1/8"       | 3-1/2"      | 553-2720 | \$29.93    |
| J          | 2-1/8"       | 3-1/2"      | 553-2770 | \$30.74    |
| K          | 2-1/8"       | 3-1/2"      | 553-2810 | \$31.13    |
| L          | 2-1/8"       | 3-1/2"      | 553-2900 | \$32.39    |
| M          | 2-3/8"       | 3-3/4"      | 553-2950 | \$33.59    |
| N          | 2-3/8"       | 3-3/4"      | 553-3020 | \$35.58    |
| O          | 2-3/8"       | 3-3/4"      | 553-3160 | \$37.66    |
| P          | 2-3/8"       | 3-3/4"      | 553-3230 | \$38.94    |
| Q          | 2-1/2"       | 4"          | 553-3320 | \$41.48    |
| R          | 2-1/2"       | 4"          | 553-3390 | \$42.67    |
| S          | 2-1/2"       | 4"          | 553-3480 | \$45.50    |
| T          | 2-3/4"       | 4-1/4"      | 553-3580 | \$47.13    |
| U          | 2-3/4"       | 4-1/4"      | 553-3680 | \$49.50    |
| V          | 2-3/4"       | 4-1/4"      | 553-3770 | \$53.50    |
| W          | 2-7/8"       | 4-1/2"      | 553-3860 | \$56.21    |
| X          | 2-7/8"       | 4-1/2"      | 553-3970 | \$61.32    |
| Y          | 2-7/8"       | 4-1/2"      | 553-4040 | \$63.44    |
| Z          | 2-7/8"       | 4-1/2"      | 553-4130 | \$78.70    |

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## SOLID CARBIDE DRILLS

JOBBER LENGTH • NUMBER SIZES

UNCOATED



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | PART#    | LIST PRICE | CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | PART#    | LIST PRICE | CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | PART#    | LIST PRICE |
|------------|--------------|-------------|----------|------------|------------|--------------|-------------|----------|------------|------------|--------------|-------------|----------|------------|
| 1          | 1-3/4"       | 3"          | 560-2280 | \$20.44    | 21         | 1-3/8"       | 2-1/2"      | 560-1590 | \$12.16    | 41         | 1"           | 2"          | 560-0960 | \$7.98     |
| 2          | 1-3/4"       | 3"          | 560-2210 | \$18.28    | 22         | 1-3/8"       | 2-1/2"      | 560-1570 | \$11.92    | 42         | 1"           | 2"          | 560-0935 | \$7.88     |
| 3          | 1-3/4"       | 3"          | 560-2130 | \$17.54    | 23         | 1-3/8"       | 2-1/2"      | 560-1540 | \$11.44    | 43         | 1"           | 2"          | 560-0890 | \$7.72     |
| 4          | 1-3/4"       | 3"          | 560-2090 | \$16.74    | 24         | 1-3/8"       | 2-1/2"      | 560-1520 | \$11.20    | 44         | 1"           | 2"          | 560-0860 | \$7.72     |
| 5          | 1-3/4"       | 3"          | 560-2055 | \$16.74    | 25         | 1-3/8"       | 2-1/2"      | 560-1495 | \$11.20    | 45         | 7/8"         | 1-3/4"      | 560-0820 | \$7.40     |
| 6          | 1-3/4"       | 3"          | 560-2040 | \$16.52    | 26         | 1-3/8"       | 2-1/2"      | 560-1470 | \$11.20    | 46         | 7/8"         | 1-3/4"      | 560-0810 | \$7.24     |
| 7          | 1-3/4"       | 3"          | 560-2010 | \$15.94    | 27         | 1-3/8"       | 2-1/2"      | 560-1440 | \$10.46    | 47         | 7/8"         | 1-3/4"      | 560-0785 | \$7.24     |
| 8          | 1-3/4"       | 3"          | 560-1990 | \$15.94    | 28         | 1-3/8"       | 2-1/2"      | 560-1405 | \$10.46    | 48         | 7/8"         | 1-3/4"      | 560-0760 | \$7.24     |
| 9          | 1-3/4"       | 3"          | 560-1960 | \$15.94    | 29         | 1-3/8"       | 2-1/2"      | 560-1360 | \$10.46    | 49         | 7/8"         | 1-3/4"      | 560-0730 | \$7.02     |
| 10         | 1-5/8"       | 2-3/4"      | 560-1935 | \$14.98    | 30         | 1-1/4"       | 2-1/4"      | 560-1285 | \$9.66     | 50         | 7/8"         | 1-3/4"      | 560-0700 | \$6.90     |
| 11         | 1-5/8"       | 2-3/4"      | 560-1910 | \$14.74    | 31         | 1-1/4"       | 2-1/4"      | 560-1200 | \$9.26     | 51         | 3/4"         | 1-1/2"      | 560-0670 | \$6.84     |
| 12         | 1-5/8"       | 2-3/4"      | 560-1890 | \$14.50    | 32         | 1-1/4"       | 2-1/4"      | 560-1160 | \$9.18     | 52         | 3/4"         | 1-1/2"      | 560-0635 | \$6.86     |
| 13         | 1-5/8"       | 2-3/4"      | 560-1850 | \$14.16    | 33         | 1-1/4"       | 2-1/4"      | 560-1130 | \$9.02     | 53         | 3/4"         | 1-1/2"      | 560-0595 | \$6.86     |
| 14         | 1-5/8"       | 2-3/4"      | 560-1820 | \$14.00    | 34         | 1-1/4"       | 2-1/4"      | 560-1110 | \$9.02     | 54         | 3/4"         | 1-1/2"      | 560-0550 | \$6.86     |
| 15         | 1-5/8"       | 2-3/4"      | 560-1800 | \$14.00    | 35         | 1-1/4"       | 2-1/4"      | 560-1100 | \$8.70     | 55         | 3/4"         | 1-1/2"      | 560-0520 | \$6.86     |
| 16         | 1-5/8"       | 2-3/4"      | 560-1770 | \$13.68    | 36         | 1-1/4"       | 2-1/4"      | 560-1065 | \$8.62     | 56         | 3/4"         | 1-1/2"      | 560-0465 | \$7.02     |
| 17         | 1-5/8"       | 2-3/4"      | 560-1730 | \$13.30    | 37         | 1-1/4"       | 2-1/4"      | 560-1040 | \$8.62     | 57         | 3/4"         | 1-1/2"      | 560-0430 | \$7.34     |
| 18         | 1-5/8"       | 2-3/4"      | 560-1695 | \$12.66    | 38         | 1-1/4"       | 2-1/4"      | 560-1015 | \$8.62     | 58         | 3/4"         | 1-1/2"      | 560-0420 | \$7.34     |
| 19         | 1-5/8"       | 2-3/4"      | 560-1660 | \$12.66    | 39         | 1-1/4"       | 2-1/4"      | 560-0995 | \$8.30     | 59         | 3/4"         | 1-1/2"      | 560-0410 | \$7.34     |
| 20         | 1-3/8"       | 2-1/2"      | 560-1610 | \$12.16    | 40         | 1"           | 2"          | 560-0980 | \$8.14     | 60         | 3/4"         | 1-1/2"      | 560-0400 | \$7.34     |

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PROUD TO BE MADE IN THE U.S.A.



Series 554

**Metalloy****HTC** **SOLID CARBIDE DRILLS****JOBBER LENGTH • NUMBER SIZES - 3 FLUTE 150° POINT  
UNCOATED**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | PART#    | LIST PRICE | CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | PART#    | LIST PRICE | CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | PART#    | LIST PRICE |
|------------|--------------|-------------|----------|------------|------------|--------------|-------------|----------|------------|------------|--------------|-------------|----------|------------|
| 1          | 1-3/4"       | 3"          | 554-2280 | \$23.10    | 21         | 1-3/8"       | 2-1/2"      | 554-1590 | \$13.74    | 41         | 1"           | 2"          | 554-0960 | \$9.02     |
| 2          | 1-3/4"       | 3"          | 554-2210 | \$20.66    | 22         | 1-3/8"       | 2-1/2"      | 554-1570 | \$13.47    | 42         | 1"           | 2"          | 554-0935 | \$8.91     |
| 3          | 1-3/4"       | 3"          | 554-2130 | \$19.83    | 23         | 1-3/8"       | 2-1/2"      | 554-1540 | \$12.93    | 43         | 1"           | 2"          | 554-0890 | \$8.73     |
| 4          | 1-3/4"       | 3"          | 554-2090 | \$18.92    | 24         | 1-3/8"       | 2-1/2"      | 554-1520 | \$12.67    | 44         | 1"           | 2"          | 554-0860 | \$8.73     |
| 5          | 1-3/4"       | 3"          | 554-2055 | \$18.92    | 25         | 1-3/8"       | 2-1/2"      | 554-1495 | \$12.66    | 45         | 7/8"         | 1-3/4"      | 554-0820 | \$8.37     |
| 6          | 1-3/4"       | 3"          | 554-2040 | \$18.67    | 26         | 1-3/8"       | 2-1/2"      | 554-1470 | \$12.66    | 46         | 7/8"         | 1-3/4"      | 554-0810 | \$8.19     |
| 7          | 1-3/4"       | 3"          | 554-2010 | \$18.02    | 27         | 1-3/8"       | 2-1/2"      | 554-1440 | \$11.82    | 47         | 7/8"         | 1-3/4"      | 554-0785 | \$8.19     |
| 8          | 1-3/4"       | 3"          | 554-1990 | \$18.02    | 28         | 1-3/8"       | 2-1/2"      | 554-1405 | \$11.82    | 48         | 7/8"         | 1-3/4"      | 554-0760 | \$8.19     |
| 9          | 1-3/4"       | 3"          | 554-1960 | \$18.02    | 29         | 1-3/8"       | 2-1/2"      | 554-1360 | \$11.82    | 49         | 7/8"         | 1-3/4"      | 554-0730 | \$7.94     |
| 10         | 1-5/8"       | 2-3/4"      | 554-1935 | \$16.93    | 30         | 1-1/4"       | 2-1/4"      | 554-1285 | \$10.91    | 50         | 7/8"         | 1-3/4"      | 554-0700 | \$7.80     |
| 11         | 1-5/8"       | 2-3/4"      | 554-1910 | \$16.66    | 31         | 1-1/4"       | 2-1/4"      | 554-1200 | \$10.47    | 51         | 3/4"         | 1-1/2"      | 554-0670 | \$7.73     |
| 12         | 1-5/8"       | 2-3/4"      | 554-1890 | \$16.39    | 32         | 1-1/4"       | 2-1/4"      | 554-1160 | \$10.38    | 52         | 3/4"         | 1-1/2"      | 554-0635 | \$7.73     |
| 13         | 1-5/8"       | 2-3/4"      | 554-1850 | \$16.00    | 33         | 1-1/4"       | 2-1/4"      | 554-1130 | \$10.20    | 53         | 3/4"         | 1-1/2"      | 554-0595 | \$7.73     |
| 14         | 1-5/8"       | 2-3/4"      | 554-1820 | \$15.82    | 34         | 1-1/4"       | 2-1/4"      | 554-1110 | \$10.20    | 54         | 3/4"         | 1-1/2"      | 554-0550 | \$7.73     |
| 15         | 1-5/8"       | 2-3/4"      | 554-1800 | \$15.82    | 35         | 1-1/4"       | 2-1/4"      | 554-1100 | \$9.83     | 55         | 3/4"         | 1-1/2"      | 554-0520 | \$7.76     |
| 16         | 1-5/8"       | 2-3/4"      | 554-1770 | \$15.46    | 36         | 1-1/4"       | 2-1/4"      | 554-1065 | \$9.74     | 56         | 3/4"         | 1-1/2"      | 554-0465 | \$7.94     |
| 17         | 1-5/8"       | 2-3/4"      | 554-1730 | \$15.03    | 37         | 1-1/4"       | 2-1/4"      | 554-1040 | \$9.74     | 57         | 3/4"         | 1-1/2"      | 554-0430 | \$8.30     |
| 18         | 1-5/8"       | 2-3/4"      | 554-1695 | \$14.31    | 38         | 1-1/4"       | 2-1/4"      | 554-1015 | \$9.74     | 58         | 3/4"         | 1-1/2"      | 554-0420 | \$8.30     |
| 19         | 1-5/8"       | 2-3/4"      | 554-1660 | \$14.31    | 39         | 1-1/4"       | 2-1/4"      | 554-0995 | \$9.38     | 59         | 3/4"         | 1-1/2"      | 554-0410 | \$8.30     |
| 20         | 1-3/8"       | 2-1/2"      | 554-1610 | \$13.74    | 40         | 1"           | 2"          | 554-0980 | \$9.20     | 60         | 3/4"         | 1-1/2"      | 554-0400 | \$8.30     |

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## SOLID CARBIDE DRILLS

**SCREW MACHINE • 135° SPLIT POINT - FRACTIONAL SIZES**  
**UNCOATED**



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | PART#    | LIST PRICE |
|------------|--------------|-------------|----------|------------|
| 1/8"       | 7/8"         | 1-7/8"      | 565-1250 | \$8.30     |
| 9/64"      | 15/16"       | 1-15/16"    | 565-1406 | \$9.26     |
| 5/32"      | 1"           | 2-1/16"     | 565-1562 | \$9.66     |
| 11/64"     | 1-1/16"      | 2-1/8"      | 565-1719 | \$12.08    |
| 3/16"      | 1-1/8"       | 2-3/16"     | 565-1875 | \$12.16    |
| 13/64"     | 1-3/16"      | 2-1/4"      | 565-2031 | \$14.32    |
| 7/32"      | 1-1/4"       | 2-3/8"      | 565-2188 | \$14.74    |
| 15/64"     | 1-5/16"      | 2-7/16"     | 565-2344 | \$18.36    |
| 1/4"       | 1-3/8"       | 2-1/2"      | 565-2500 | \$17.00    |
| 17/64"     | 1-7/16"      | 2-5/8"      | 565-2658 | \$23.82    |
| 9/32"      | 1-1/2"       | 2-11/16"    | 565-2812 | \$24.24    |
| 19/64"     | 1-9/16"      | 2-3/4"      | 565-2969 | \$25.54    |
| 5/16"      | 1-5/8"       | 2-13/16"    | 565-3125 | \$24.80    |
| 21/64"     | 1-11/16"     | 2-15/16"    | 565-3281 | \$28.42    |
| 11/32"     | 1-11/16"     | 3"          | 565-3438 | \$31.56    |
| 23/64"     | 1-3/4"       | 3-1/16"     | 565-3594 | \$37.20    |
| 3/8"       | 1-13/16"     | 3-1/8"      | 565-3750 | \$37.20    |
| 25/64"     | 1-7/8"       | 3-1/4"      | 565-3906 | \$44.28    |
| 13/32"     | 1-15/16"     | 3-5/16"     | 565-4062 | \$48.08    |
| 27/64"     | 2"           | 3-3/8"      | 565-4219 | \$49.52    |
| 7/16"      | 2-1/16"      | 3-7/16"     | 565-4375 | \$54.26    |
| 29/64"     | 2-1/8"       | 3-9/16"     | 565-4531 | \$66.62    |
| 15/32"     | 2-1/8"       | 3-5/8"      | 565-4688 | \$68.36    |
| 31/64"     | 2-3/16"      | 3-11/16"    | 565-4844 | \$68.36    |
| 1/2"       | 2-1/4"       | 3-3/4"      | 565-5000 | \$62.80    |
| 9/16"      | 2-1/2"       | 4"          | 565-5625 | \$124.54   |
| 5/8"       | 2-3/4"       | 4-1/4"      | 565-6250 | \$162.22   |
| 11/16"     | 2-7/8"       | 4-5/8"      | 565-6875 | \$184.98   |
| 3/4"       | 3-1/8"       | 5"          | 565-7500 | \$215.98   |



**Series 570*****Metalloy*****HTC** 

## SOLID CARBIDE DRILLS

**SCREW MACHINE • 135° SPLIT POINT - LETTER SIZES**  
**UNCOATED**



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | PART#    | LIST PRICE |
|------------|--------------|-------------|----------|------------|
| A          | 1-5/16"      | 2-7/16"     | 570-2340 | \$19.64    |
| B          | 1-3/8"       | 2-1/2"      | 570-2380 | \$20.60    |
| C          | 1-3/8"       | 2-1/2"      | 570-2420 | \$20.76    |
| D          | 1-3/8"       | 2-1/2"      | 570-2460 | \$20.76    |
| E          | 1-3/8"       | 2-1/2"      | 570-2500 | \$19.48    |
| F          | 1-7/16"      | 2-5/8"      | 570-2570 | \$24.24    |
| G          | 1-7/16"      | 2-5/8"      | 570-2610 | \$25.44    |
| H          | 1-1/2"       | 2-11/16"    | 570-2660 | \$26.08    |
| I          | 1-1/2"       | 2-11/16"    | 570-2720 | \$26.08    |
| J          | 1-1/2"       | 2-11/16"    | 570-2770 | \$26.50    |
| K          | 1-1/2"       | 2-11/16"    | 570-2810 | \$29.40    |
| L          | 1-9/16"      | 2-3/4"      | 570-2900 | \$30.42    |
| M          | 1-9/16"      | 2-3/4"      | 570-2950 | \$31.08    |
| N          | 1-5/8"       | 2-13/16"    | 570-3020 | \$31.56    |
| O          | 1-11/16"     | 2-15/16"    | 570-3160 | \$32.52    |
| P          | 1-11/16"     | 2-15/16"    | 570-3230 | \$32.84    |
| Q          | 1-11/16"     | 3"          | 570-3320 | \$34.06    |
| R          | 1-11/16"     | 3"          | 570-3390 | \$35.02    |
| S          | 1-3/4"       | 3-1/16"     | 570-3480 | \$36.86    |
| T          | 1-3/4"       | 3-1/16"     | 570-3580 | \$40.58    |
| U          | 1-13/16"     | 3-1/8"      | 570-3680 | \$42.34    |
| V          | 1-7/8"       | 3-1/4"      | 570-3770 | \$42.98    |
| W          | 1-15/16"     | 3-1/4"      | 570-3860 | \$44.04    |
| X          | 1-15/16"     | 3-5/16"     | 570-3970 | \$47.90    |
| Y          | 1-15/16"     | 3-5/16"     | 570-4040 | \$52.64    |
| Z          | 2"           | 3-3/8"      | 570-4130 | \$54.10    |

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## SOLID CARBIDE DRILLS

SCREW MACHINE • 135° SPLIT POINT - NUMBER SIZES  
UNCOATED



| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | PART#    | LIST PRICE | CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | PART#    | LIST PRICE | CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | PART#    | LIST PRICE |
|------------|--------------|-------------|----------|------------|------------|--------------|-------------|----------|------------|------------|--------------|-------------|----------|------------|
| 1          | 1-5/16"      | 2-7/16"     | 575-2280 | \$18.84    | 21         | 1-1/16"      | 2-1/8"      | 575-1590 | \$12.32    | 41         | 13/16"       | 1-13/16"    | 575-0960 | \$7.72     |
| 2          | 1-5/16"      | 2-7/16"     | 575-2210 | \$18.44    | 22         | 1"           | 2-1/16"     | 575-1570 | \$11.92    | 42         | 3/4"         | 1-3/4"      | 575-0935 | \$7.66     |
| 3          | 1-1/4"       | 2-3/8"      | 575-2230 | \$17.84    | 23         | 1"           | 2-1/16"     | 575-1540 | \$11.92    | 43         | 3/4"         | 1-3/4"      | 575-0890 | \$7.50     |
| 4          | 1-1/4"       | 2-3/8"      | 575-2090 | \$18.92    | 24         | 1"           | 2-1/16"     | 575-1520 | \$11.60    | 44         | 3/4"         | 1-3/4"      | 575-0860 | \$7.40     |
| 5          | 1-1/4"       | 2-3/8"      | 575-2055 | \$17.00    | 25         | 1"           | 2-1/16"     | 575-1495 | \$11.20    | 45         | 3/4"         | 1-3/4"      | 575-0820 | \$7.34     |
| 6          | 1-1/4"       | 2-3/8"      | 575-2040 | \$17.00    | 26         | 1"           | 2-1/16"     | 575-1470 | \$11.04    | 46         | 3/4"         | 1-3/4"      | 575-0810 | \$7.08     |
| 7          | 1-3/16"      | 2-1/4"      | 575-2010 | \$16.26    | 27         | 1"           | 2-1/16"     | 575-1440 | \$10.88    | 47         | 3/4"         | 1-3/4"      | 575-0785 | \$7.08     |
| 8          | 1-3/16"      | 2-1/4"      | 575-1990 | \$15.82    | 28         | 15/16"       | 1-15/16"    | 575-1405 | \$10.78    | 48         | 11/16"       | 1-11/16"    | 575-0760 | \$7.08     |
| 9          | 1-3/16"      | 2-1/4"      | 575-1960 | \$15.02    | 29         | 15/16"       | 1-15/16"    | 575-1360 | \$10.24    | 49         | 11/16"       | 1-11/16"    | 575-0730 | \$6.90     |
| 10         | 1-3/16"      | 2-1/4"      | 575-1935 | \$15.02    | 30         | 15/16"       | 1-15/16"    | 575-1285 | \$10.14    | 50         | 11/16"       | 1-11/16"    | 575-0700 | \$6.86     |
| 11         | 1-3/16"      | 2-1/4"      | 575-1910 | \$15.02    | 31         | 7/8"         | 1-7/8"      | 575-1200 | \$9.02     | 51         | 11/16"       | 1-11/16"    | 575-0670 | \$6.76     |
| 12         | 1-3/16"      | 2-1/4"      | 575-1890 | \$14.26    | 32         | 7/8"         | 1-7/8"      | 575-1160 | \$9.02     | 52         | 11/16"       | 1-11/16"    | 575-0635 | \$6.76     |
| 13         | 1-1/8"       | 2-3/16"     | 575-1850 | \$14.58    | 33         | 7/8"         | 1-7/8"      | 575-1130 | \$8.86     | 53         | 1/2"         | 1-1/2"      | 575-0595 | \$6.60     |
| 14         | 1-1/8"       | 2-3/16"     | 575-1820 | \$14.32    | 34         | 7/8"         | 1-7/8"      | 575-1110 | \$8.86     | 54         | 1/2"         | 1-1/2"      | 575-0550 | \$6.60     |
| 15         | 1-1/8"       | 2-3/16"     | 575-1800 | \$14.26    | 35         | 7/8"         | 1-7/8"      | 575-1100 | \$8.62     | 55         | 1/2"         | 1-1/2"      | 575-0520 | \$6.54     |
| 16         | 1-1/8"       | 2-3/16"     | 575-1770 | \$14.16    | 36         | 13/16"       | 1-13/16"    | 575-1065 | \$8.46     | 56         | 1/2"         | 1-1/2"      | 575-0465 | \$6.54     |
| 17         | 1-1/8"       | 2-3/16"     | 575-1730 | \$14.00    | 37         | 13/16"       | 1-13/16"    | 575-1040 | \$8.38     | 57         | 1/2"         | 1-1/2"      | 575-0430 | \$6.54     |
| 18         | 1-1/16"      | 2-1/8"      | 575-1695 | \$13.68    | 38         | 13/16"       | 1-13/16"    | 575-1015 | \$8.30     | 58         | 1/2"         | 1-1/2"      | 575-0420 | \$6.54     |
| 19         | 1-1/16"      | 2-1/8"      | 575-1660 | \$13.04    | 39         | 13/16"       | 1-13/16"    | 575-0995 | \$8.14     | 59         | 1/2"         | 1-1/2"      | 575-0410 | \$6.54     |
| 20         | 1-1/16"      | 2-1/8"      | 575-1610 | \$12.82    | 40         | 13/16"       | 1-13/16"    | 575-0980 | \$8.14     | 60         | 1/2"         | 1-1/2"      | 575-0400 | \$6.54     |

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**Series 580****Metalloy****HTC** **SOLID CARBIDE DRILLS****STRAIGHT FLUTE • 140° POINT - FRACTIONAL SIZES****UNCOATED**

| CUTTER DIA | FLUTE LENGTH | O.A. LENGTH | PART#    | LIST PRICE |
|------------|--------------|-------------|----------|------------|
| 1/16"      | 5/8"         | 1-5/8"      | 580-0625 | \$8.16     |
| 5/64"      | 11/16"       | 1-11/16"    | 580-0781 | \$6.94     |
| 3/32"      | 3/4"         | 1-3/4"      | 580-0938 | \$7.86     |
| 7/64"      | 13/16"       | 1-13/16"    | 580-1094 | \$8.62     |
| 1/8"       | 7/8"         | 1-7/8"      | 580-1250 | \$8.86     |
| 9/64"      | 15/16"       | 1-15/16"    | 580-1406 | \$10.62    |
| 5/32"      | 1"           | 2-1/16"     | 580-1562 | \$11.18    |
| 11/64"     | 1-1/16"      | 2-1/8"      | 580-1719 | \$13.10    |
| 3/16"      | 1-1/8"       | 2-3/16"     | 580-1875 | \$13.10    |
| 13/64"     | 1-3/16"      | 2-1/4"      | 580-2031 | \$15.96    |
| 7/32"      | 1-1/4"       | 2-3/8"      | 580-2188 | \$16.26    |
| 15/64"     | 1-5/16"      | 2-7/16"     | 580-2344 | \$19.40    |
| 1/4"       | 1-3/8"       | 2-1/2"      | 580-2500 | \$19.18    |
| 17/64"     | 1-7/16"      | 2-5/8"      | 580-2656 | \$20.64    |
| 9/32"      | 1-1/2"       | 2-11/16"    | 580-2812 | \$22.00    |
| 19/64"     | 1-9/16"      | 2-3/4"      | 580-2969 | \$24.42    |
| 5/16"      | 1-5/8"       | 2-13/16"    | 580-3125 | \$25.72    |
| 21/64"     | 1-11/16"     | 2-15/16"    | 580-3281 | \$28.58    |
| 11/32"     | 1-11/16"     | 3"          | 580-3438 | \$31.58    |
| 23/64"     | 1-3/4"       | 3-1/16"     | 580-3594 | \$34.50    |
| 3/8"       | 1-13/16"     | 3-1/8"      | 580-3750 | \$36.74    |
| 25/64"     | 1-7/8"       | 3-1/4"      | 580-3906 | \$42.50    |
| 13/32"     | 1-15/16"     | 3-5/16"     | 580-4062 | \$47.28    |
| 27/64"     | 2"           | 3-3/8"      | 580-4219 | \$51.68    |
| 7/16"      | 2-1/16"      | 3-7/16"     | 580-4375 | \$56.00    |
| 15/32"     | 2-1/8"       | 3-5/8"      | 580-4688 | \$65.38    |
| 1/2"       | 2-1/4"       | 3-3/4"      | 580-5000 | \$69.60    |

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## CARBIDE REAMERS

CHUCKING • FRACTIONAL SIZES

### UNCOATED



| REAMER DIA | FLUTE LENGTH | O.A. LENGTH | DECIMAL EQUIVALENT | PART#    | LIST PRICE |
|------------|--------------|-------------|--------------------|----------|------------|
| 1/8"       | 5/8"         | 2-1/4"      | .1250              | 600-1250 | \$13.08    |
| 9/64"      | 3/4"         | 2-1/2"      | .1406              | 600-1406 | \$17.28    |
| 5/32"      | 3/4"         | 2-1/2"      | .1562              | 600-1562 | \$15.40    |
| 11/64"     | 7/8"         | 2-3/4"      | .1719              | 600-1719 | \$17.50    |
| 3/16"      | 7/8"         | 2-3/4"      | .1875              | 600-1875 | \$17.56    |
| 13/64"     | 1"           | 3"          | .2031              | 600-2031 | \$21.46    |
| 7/32"      | 1"           | 3"          | .2187              | 600-2187 | \$21.58    |
| 15/64"     | 1"           | 3"          | .2344              | 600-2344 | \$23.32    |
| 1/4"       | 1"           | 3"          | .2500              | 600-2500 | \$23.42    |
| 17/64"     | 1-1/8"       | 3-1/4"      | .2656              | 600-2656 | \$28.26    |
| 9/32"      | 1-1/8"       | 3-1/4"      | .2812              | 600-2812 | \$28.34    |
| 19/64"     | 1-1/8"       | 3-1/4"      | .2969              | 600-2969 | \$31.38    |
| 5/16"      | 1-1/8"       | 3-1/4"      | .3125              | 600-3125 | \$31.50    |
| 21/64"     | 1-1/4"       | 3-1/2"      | .3281              | 600-3281 | \$35.08    |
| 11/32"     | 1-1/4"       | 3-1/2"      | .3437              | 600-3437 | \$35.42    |
| 23/64"     | 1-1/4"       | 3-1/2"      | .3594              | 600-3594 | \$37.76    |
| 3/8"       | 1-1/4"       | 3-1/2"      | .3750              | 600-3750 | \$37.78    |
| 25/64"     | 1-1/4"       | 3-1/2"      | .3906              | 600-3906 | \$41.62    |
| 13/32"     | 1-1/4"       | 3-1/2"      | .4062              | 600-4062 | \$43.28    |
| 27/64"     | 1-3/8"       | 4"          | .4219              | 600-4219 | \$44.76    |
| 7/16"      | 1-3/8"       | 4"          | .4375              | 600-4375 | \$49.06    |
| 29/64"     | 1-3/8"       | 4"          | .4531              | 600-4531 | \$54.10    |
| 15/32"     | 1-3/8"       | 4"          | .4687              | 600-4687 | \$54.22    |
| 31/64"     | 1-1/2"       | 4"          | .4844              | 600-4844 | \$58.36    |
| 1/2"       | 1-1/2"       | 4"          | .5000              | 600-5000 | \$61.28    |

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PROUD TO BE MADE IN THE U.S.A.



**Series 605*****Metalloy*****HTC** **CARBIDE REAMERS****CHUCKING • LETTER SIZES****UNCOATED**

| REAMER DIA | FLUTE LENGTH | O.A. LENGTH | DECIMAL EQUIVALENT | PART#    | LIST PRICE |
|------------|--------------|-------------|--------------------|----------|------------|
| A          | 1"           | 3"          | .2340              | 605-2340 | \$25.94    |
| B          | 1"           | 3"          | .2380              | 605-2380 | \$25.86    |
| C          | 1"           | 3"          | .2420              | 605-2420 | \$25.70    |
| D          | 1"           | 3"          | .2460              | 605-2460 | \$25.50    |
| E          | 1"           | 3"          | .2500              | 605-2500 | \$23.32    |
| F          | 1-1/8"       | 3-1/4"      | .2570              | 605-2570 | \$31.38    |
| G          | 1-1/8"       | 3-1/4"      | .2610              | 605-2610 | \$31.30    |
| H          | 1-1/8"       | 3-1/4"      | .2660              | 605-2660 | \$31.26    |
| I          | 1-1/8"       | 3-1/4"      | .2720              | 605-2720 | \$31.22    |
| J          | 1-1/8"       | 3-1/4"      | .2770              | 605-2770 | \$31.16    |
| K          | 1-1/8"       | 3-1/4"      | .2810              | 605-2810 | \$31.10    |
| L          | 1-1/8"       | 3-1/4"      | .2900              | 605-2900 | \$30.80    |
| M          | 1-1/8"       | 3-1/4"      | .2950              | 605-2950 | \$30.84    |
| N          | 1-1/8"       | 3-1/4"      | .3020              | 605-3020 | \$30.86    |
| O          | 1-1/8"       | 3-1/4"      | .3160              | 605-3160 | \$34.90    |
| P          | 1-1/4"       | 3-1/2"      | .3230              | 605-3230 | \$35.00    |
| Q          | 1-1/4"       | 3-1/2"      | .3320              | 605-3320 | \$35.10    |
| R          | 1-1/4"       | 3-1/2"      | .3390              | 605-3390 | \$35.32    |
| S          | 1-1/4"       | 3-1/2"      | .3480              | 605-3480 | \$35.14    |
| T          | 1-1/4"       | 3-1/2"      | .3580              | 605-3580 | \$38.20    |
| U          | 1-1/4"       | 3-1/2"      | .3680              | 605-3680 | \$38.24    |
| V          | 1-1/4"       | 3-1/2"      | .3770              | 605-3770 | \$48.08    |
| W          | 1-1/4"       | 3-1/2"      | .3860              | 605-3860 | \$48.12    |
| X          | 1-1/4"       | 3-1/2"      | .3970              | 605-3970 | \$55.60    |
| Y          | 1-1/4"       | 3-1/2"      | .4040              | 605-4040 | \$57.00    |
| Z          | 1-1/4"       | 3-1/2"      | .4130              | 605-4130 | \$58.60    |

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## CARBIDE REAMERS

CHUCKING • NUMBER SIZES

UNCOATED



| REAMER DIA | FLUTE LENGTH | O.A. LENGTH | DECIMAL EQUIV. | PART#    | LIST PRICE |
|------------|--------------|-------------|----------------|----------|------------|
| 1          | 1"           | 3"          | .2280          | 610-2280 | \$24.20    |
| 2          | 1"           | 3"          | .2210          | 610-2210 | \$22.10    |
| 3          | 1"           | 3"          | .2130          | 610-2130 | \$22.10    |
| 4          | 1"           | 3"          | .2090          | 610-2090 | \$22.10    |
| 5          | 1"           | 3"          | .2055          | 610-2055 | \$22.10    |
| 6          | 1"           | 3"          | .2040          | 610-2040 | \$22.10    |
| 7          | 1"           | 3"          | .2010          | 610-2010 | \$22.10    |
| 8          | 1"           | 3"          | .1990          | 610-1990 | \$22.10    |
| 9          | 1"           | 3"          | .1960          | 610-1960 | \$22.10    |
| 10         | 7/8"         | 2-3/4"      | .1935          | 610-1935 | \$22.10    |
| 11         | 7/8"         | 2-3/4"      | .1910          | 610-1910 | \$22.10    |
| 12         | 7/8"         | 2-3/4"      | .1890          | 610-1890 | \$18.16    |
| 13         | 7/8"         | 2-3/4"      | .1850          | 610-1850 | \$18.16    |
| 14         | 7/8"         | 2-3/4"      | .1820          | 610-1820 | \$18.16    |
| 15         | 7/8"         | 2-3/4"      | .1800          | 610-1800 | \$18.16    |
| 16         | 7/8"         | 2-3/4"      | .1770          | 610-1770 | \$18.16    |
| 17         | 7/8"         | 2-3/4"      | .1730          | 610-1730 | \$18.16    |
| 18         | 7/8"         | 2-3/4"      | .1695          | 610-1695 | \$18.16    |
| 19         | 7/8"         | 2-3/4"      | .1660          | 610-1660 | \$18.16    |
| 20         | 7/8"         | 2-3/4"      | .1610          | 610-1610 | \$18.16    |
| 21         | 3/4"         | 2-1/2"      | .1590          | 610-1590 | \$16.14    |
| 22         | 3/4"         | 2-1/2"      | .1570          | 610-1570 | \$16.14    |
| 23         | 3/4"         | 2-1/2"      | .1540          | 610-1540 | \$16.14    |
| 24         | 3/4"         | 2-1/2"      | .1520          | 610-1520 | \$16.14    |
| 25         | 3/4"         | 2-1/2"      | .1495          | 610-1495 | \$16.14    |
| 26         | 3/4"         | 2-1/2"      | .1470          | 610-1470 | \$16.14    |
| 27         | 3/4"         | 2-1/2"      | .1440          | 610-1440 | \$15.50    |
| 28         | 3/4"         | 2-1/2"      | .1405          | 610-1405 | \$15.50    |
| 29         | 3/4"         | 2-1/2"      | .1360          | 610-1360 | \$15.50    |
| 30         | 5/8"         | 2-1/4"      | .1285          | 610-1285 | \$14.46    |

| REAMER DIA | FLUTE LENGTH | O.A. LENGTH | DECIMAL EQUIV. | PART#    | LIST PRICE |
|------------|--------------|-------------|----------------|----------|------------|
| 31         | 5/8"         | 2-1/4"      | .1200          | 610-1200 | \$14.46    |
| 32         | 5/8"         | 2-1/4"      | .1160          | 610-1160 | \$14.46    |
| 33         | 5/8"         | 2-1/4"      | .1130          | 610-1130 | \$12.94    |
| 34         | 5/8"         | 2-1/4"      | .1110          | 610-1110 | \$12.94    |
| 35         | 5/8"         | 2-1/4"      | .1100          | 610-1100 | \$12.94    |
| 36         | 5/8"         | 2-1/4"      | .1065          | 610-1065 | \$12.94    |
| 37         | 5/8"         | 2-1/4"      | .1040          | 610-1040 | \$12.94    |
| 38         | 5/8"         | 2-1/4"      | .1015          | 610-1015 | \$12.94    |
| 39         | 5/8"         | 2-1/4"      | .0995          | 610-0995 | \$12.94    |
| 40         | 5/8"         | 2-1/4"      | .0980          | 610-0980 | \$12.94    |
| 41         | 5/8"         | 2-1/4"      | .0960          | 610-0960 | \$12.94    |
| 42         | 1/2"         | 2"          | .0935          | 610-0935 | \$12.94    |
| 43         | 1/2"         | 2"          | .0890          | 610-0890 | \$12.94    |
| 44         | 1/2"         | 2"          | .0860          | 610-0860 | \$12.94    |
| 45         | 1/2"         | 2"          | .0820          | 610-0820 | \$12.94    |
| 46         | 1/2"         | 2"          | .0810          | 610-0810 | \$12.94    |
| 47         | 1/2"         | 1-3/4"      | .0785          | 610-0785 | \$12.94    |
| 48         | 1/2"         | 1-3/4"      | .0760          | 610-0760 | \$12.94    |
| 49         | 1/2"         | 1-3/4"      | .0730          | 610-0730 | \$12.94    |
| 50         | 1/2"         | 1-3/4"      | .0700          | 610-0700 | \$12.94    |
| 51         | 1/2"         | 1-3/4"      | .0670          | 610-0670 | \$12.94    |
| 52         | 3/8"         | 1-1/2"      | .0635          | 610-0635 | \$12.94    |
| 53         | 3/8"         | 1-1/2"      | .0595          | 610-0595 | \$12.94    |
| 54         | 3/8"         | 1-1/2"      | .0550          | 610-0550 | \$12.94    |
| 55         | 3/8"         | 1-1/2"      | .0520          | 610-0520 | \$12.94    |
| 56         | 3/8"         | 1-1/2"      | .0465          | 610-0465 | \$12.94    |
| 57         | 3/8"         | 1-1/2"      | .0430          | 610-0430 | \$12.94    |
| 58         | 3/8"         | 1-1/2"      | .0420          | 610-0420 | \$12.94    |
| 59         | 3/8"         | 1-1/2"      | .0410          | 610-0410 | \$12.94    |
| 60         | 3/8"         | 1-1/2"      | .0400          | 610-0400 | \$12.94    |

**METRIC SIZES AVAILABLE**

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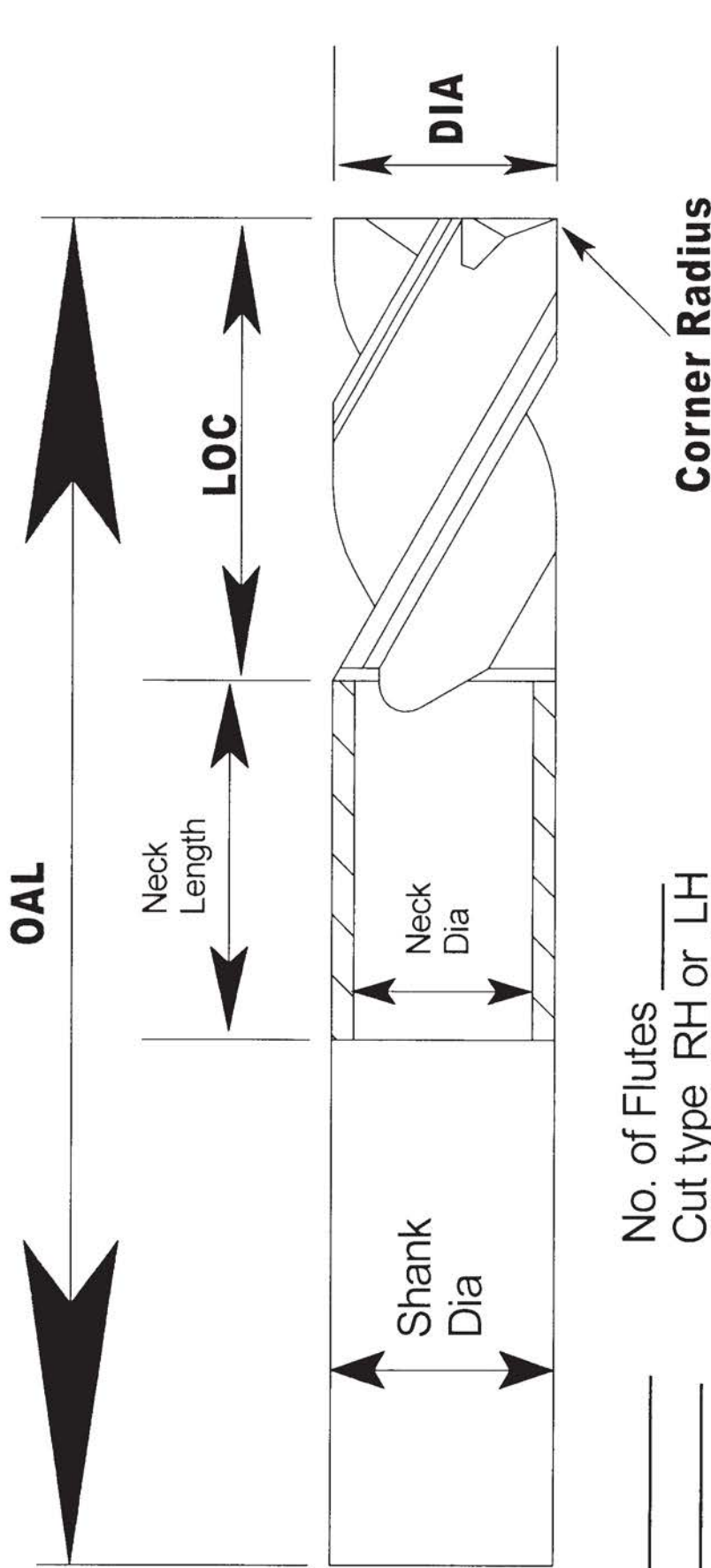








# Square Endmill



OAL \_\_\_\_\_  
 LOC \_\_\_\_\_  
 DIA. \_\_\_\_\_  
 Shank Dia. \_\_\_\_\_

Neck yes or no  
 Neck Length \_\_\_\_\_  
 Neck Dia. \_\_\_\_\_

No. of Flutes \_\_\_\_\_  
 Cut type RH or LH  
 Helix \_\_\_\_\_ deg or Straight Flute

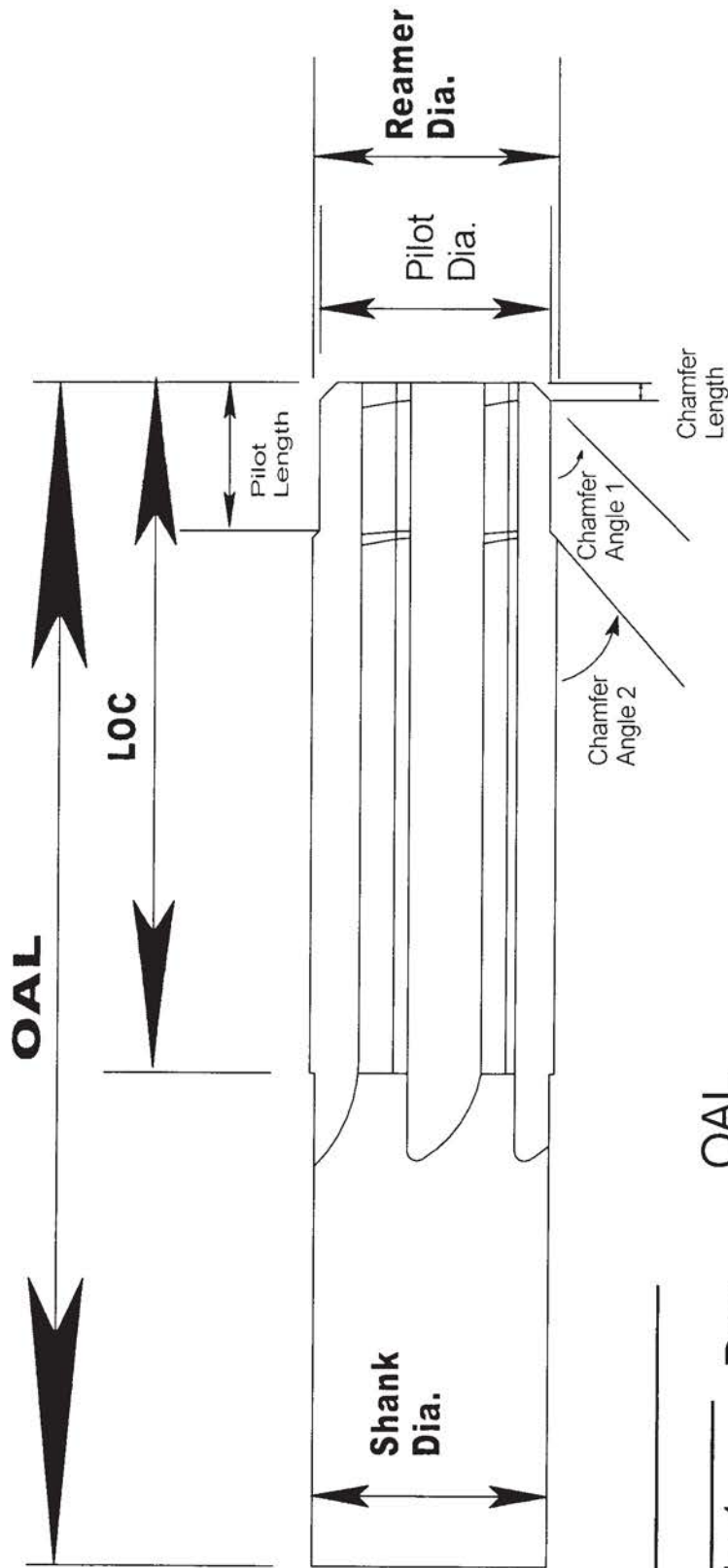
Corner Radius \_\_\_\_\_

**Metalloy** — **HTC**  
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# Step Reamer



Reamer Dia \_\_\_\_\_  
 Pilot Dia \_\_\_\_\_  
 Chamfer Angle 1 \_\_\_\_\_ Deg  
 Chamfer Length \_\_\_\_\_  
 Chamfer Angle 2 \_\_\_\_\_ Deg  
 Pilot Length \_\_\_\_\_  
 LOC \_\_\_\_\_  
 Shank Dia \_\_\_\_\_

OAL \_\_\_\_\_  
 No. of Flutes \_\_\_\_\_  
 Cut type RH or LH  
 Helix \_\_\_\_\_ deg / \_\_\_\_\_ lead / Straight Flute

Notes: \_\_\_\_\_  
 \_\_\_\_\_





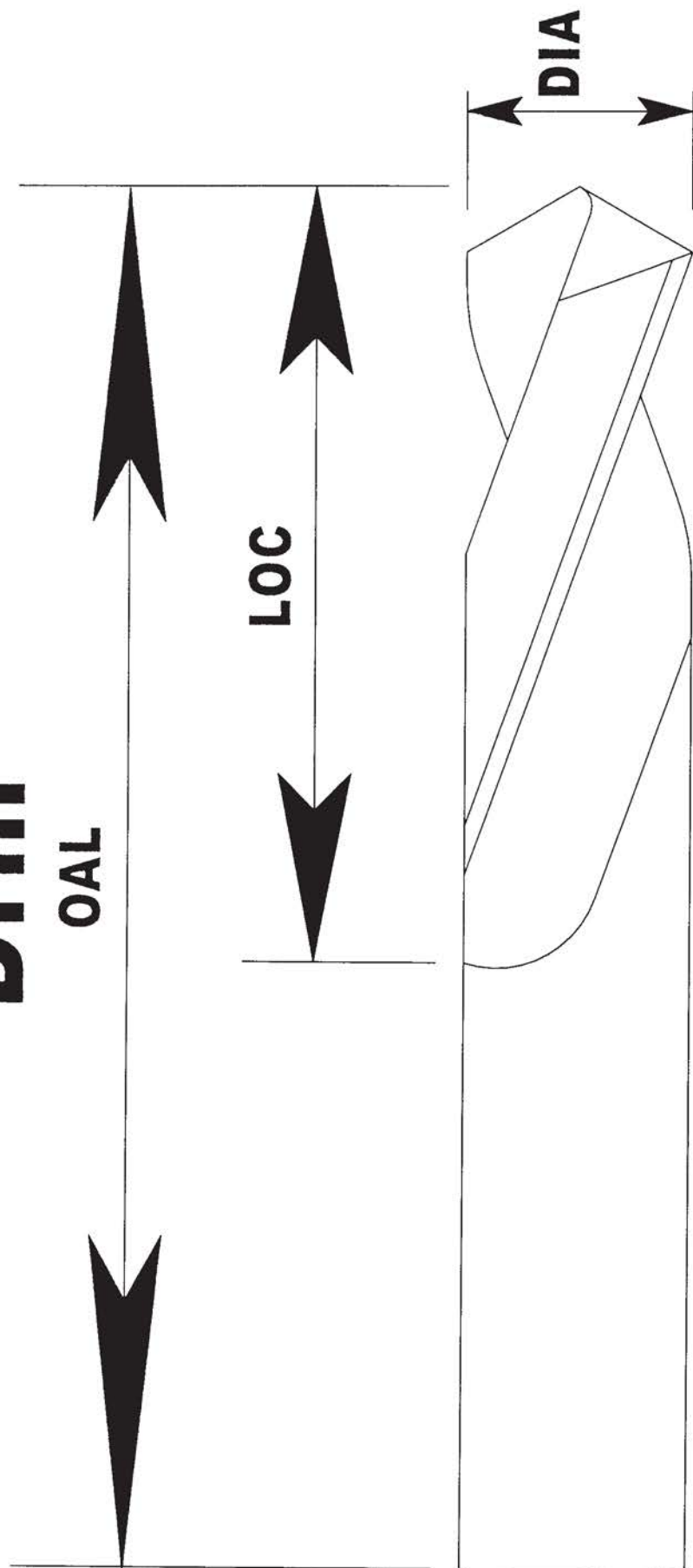
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# Drill



Point Angle \_\_\_\_ incl. No. of Flutes \_\_\_\_  
 OAL \_\_\_\_ Cut type RH or LH  
 LOC \_\_\_\_ Helix \_\_\_\_ deg / \_\_\_\_ lead / Straight Flute  
 DIA. \_\_\_\_

Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Metalloy** **HTC**  
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# FTG - BURS

BURRS & COUNTER SINKS



Recommendations For Surface Feet Per Minute & Chip Thickness Per Tooth\*

### **“OVER” 32 HRc Hard Grade Materials**

| Material                                                                                                         | SFM      | 1/8"   | 3/16"  | 1/4"   | 3/8"   | 1/2"   | 5/8"   | 3/4"   | 1"     |
|------------------------------------------------------------------------------------------------------------------|----------|--------|--------|--------|--------|--------|--------|--------|--------|
| <b>NON-FERROUS MATERIALS</b>                                                                                     |          |        |        |        |        |        |        |        |        |
| Aluminum Alloys: 440, 356, 380, C61300                                                                           | 500-1000 | 0.001  | 0.0015 | 0.002  | 0.003  | 0.004  | 0.005  | 0.006  | 0.008  |
| Copper: Naval Brass, High Silicon Bronze, A17, C-17200                                                           | 800-1000 | 0.001  | 0.0015 | 0.002  | 0.0025 | 0.003  | 0.004  | 0.0045 | 0.005  |
| Copper Alloys: Nickel Silver, Beryllium Copper, Oxygen-Free Copper                                               | 800-1000 | 0.001  | 0.0015 | 0.002  | 0.0025 | 0.003  | 0.004  | 0.004  | 0.005  |
| Plastics Polycarbonate                                                                                           | 200-500  | 0.001  | 0.002  | 0.003  | 0.004  | 0.006  | 0.008  | 0.010  | 0.012  |
| <b>STAINLESS STEELS</b>                                                                                          |          |        |        |        |        |        |        |        |        |
| Precipitation: 17/4, 17/7, AF-17, Custom 450/635, 15/7Mo                                                         | 90-125   | 0.0003 | 0.0005 | 0.001  | 0.001  | 0.002  | 0.003  | 0.004  | 0.005  |
| Austenitic: 304, 310, 314, 316, 321, 330, 347, 348                                                               | 90-150   | 0.0002 | 0.0003 | 0.0005 | 0.001  | 0.002  | 0.0025 | 0.0035 | 0.004  |
| Martensitic: 420, 430F, 440C, 446                                                                                | 90-170   | 0.0002 | 0.0003 | 0.0005 | 0.001  | 0.0015 | 0.0025 | 0.0025 | 0.004  |
| <b>HIGH TEMP. ALLOYS</b>                                                                                         |          |        |        |        |        |        |        |        |        |
| Cobalt Base: Air-Resist 13/213/215, Haynes 21/36, Howmet 3, Hs 6/51, Nasa Co-W-Re, Mar-M-302, MP-159             | 50-80    | 0.0003 | 0.0004 | 0.0006 | 0.0008 | 0.0012 | 0.0015 | 0.002  | 0.0025 |
| Nickel Base: Hastelloy-C/B/G/X, Inconel 718, Waspaloy, M252, Rene 41-95, Nimonic 75-80, Astroloy, Udimet 500-700 | 50-80    | 0.0004 | 0.0005 | 0.0008 | 0.001  | 0.002  | 0.0025 | 0.003  | 0.004  |
| Iron Base: A286, Haynes 556, Discoloy, V-57                                                                      | 70-110   | 0.0004 | 0.0005 | 0.001  | 0.0015 | 0.002  | 0.0025 | 0.003  | 0.004  |
| <b>STEELS</b>                                                                                                    |          |        |        |        |        |        |        |        |        |
| High Strength Steels: 4140, 4340M, EDT-150, HP9-430, 11-10, 300M, D6Ac, H11, H13, Armor Plate                    | 80-140   | 0.0004 | 0.0006 | 0.001  | 0.0015 | 0.0015 | 0.0025 | 0.003  | 0.004  |
| High Alloy Steels-Mold & Die: Hy-Tugg, Stressproof, Armor Plate                                                  | 80-140   | 0.0004 | 0.0006 | 0.001  | 0.0015 | 0.0015 | 0.0025 | 0.003  | 0.004  |
| Medium Alloy Steels: 200, 250, 300                                                                               | 80-140   | 0.0005 | 0.0005 | 0.001  | 0.002  | 0.0025 | 0.0035 | 0.004  | 0.005  |
| Low Alloy Steels-Maraging: 23XX, 31XX                                                                            | 100-120  | 0.0005 | 0.0007 | 0.0012 | 0.002  | 0.003  | 0.004  | 0.005  | 0.006  |
| <b>CAST IRONS</b>                                                                                                |          |        |        |        |        |        |        |        |        |
| Ductile Iron: Ductile Cast Iron                                                                                  | 80-140   | 0.0005 | 0.008  | 0.0015 | 0.002  | 0.0022 | 0.003  | 0.004  | 0.006  |
| Cast Iron: Malleable, Chilled                                                                                    | 80-140   | 0.0005 | 0.001  | 0.002  | 0.003  | 0.004  | 0.005  | 0.006  | 0.008  |
| <b>TITANIUM</b>                                                                                                  |          |        |        |        |        |        |        |        |        |
| Titanium Alloys: 5Al-2.5-Sn-Eli 8Al-1Mo-1V                                                                       | 80-180   | 0.0003 | 0.0004 | 0.0005 | 0.001  | 0.0015 | 0.0025 | 0.003  | 0.004  |

\*These are base-line recommendations. Adjust feeds and speeds according to individual circumstances.

RPM = SFM X 3.82/Tool Diameter Feed (in inches per minute) = RPM X CTT X # of Flutes

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#### Recommendations For Surface Feet Per Minute & Chip Thickness Per Tooth\*

#### "UNDER" 32 HRc Hard Grade Materials

| Material                                                                                                                    | SFM      | 1/8"   | 3/16"  | 1/4"   | 3/8"   | 1/2"   | 5/8"   | 3/4"   | 1"     |
|-----------------------------------------------------------------------------------------------------------------------------|----------|--------|--------|--------|--------|--------|--------|--------|--------|
| <b>NON-FERROUS MATERIALS</b>                                                                                                |          |        |        |        |        |        |        |        |        |
| Aluminum Alloys: 2024-T4/T6, 2014, 6061-T6/T651, 7075-T6                                                                    | 800-2000 | 0.001  | 0.002  | 0.003  | 0.004  | 0.005  | 0.006  | 0.008  | 0.010  |
| Magnesium: Die-Cast, Extruded                                                                                               | 800-1500 | 0.001  | 0.0015 | 0.002  | 0.003  | 0.004  | 0.006  | 0.008  | 0.009  |
| Copper: Yellow Brass, High Lead Brass, Red Brass                                                                            | 800-1000 | 0.001  | 0.0012 | 0.002  | 0.0025 | 0.003  | 0.004  | 0.004  | 0.005  |
| Copper Alloys: Aluminum/Bronze, Low Silicon Bronze                                                                          | 800-1000 | 0.001  | 0.0012 | 0.002  | 0.0025 | 0.003  | 0.004  | 0.004  | 0.005  |
| Plastics: Acrylics, Phenolics, Polysulfone, G10, G11                                                                        | 200-500  | 0.001  | 0.002  | 0.003  | 0.004  | 0.006  | 0.008  | 0.010  | 0.012  |
| Carbon, Graphites: Carbon, Graphites                                                                                        | 200-500  | 0.002  | 0.003  | 0.004  | 0.006  | 0.008  | 0.009  | 0.010  | 0.012  |
| <b>STAINLESS STEELS</b>                                                                                                     |          |        |        |        |        |        |        |        |        |
| Precipitation: 13/8, 15/5, AM-350/355                                                                                       | 80-250   | 0.0003 | 0.0005 | 0.001  | 0.001  | 0.002  | 0.003  | 0.004  | 0.005  |
| Austenitic: 200 Series, 302, 303, 304L, 316L                                                                                | 100-350  | 0.0002 | 0.0003 | 0.0005 | 0.001  | 0.002  | 0.0025 | 0.0035 | 0.0045 |
| Martensitic: 403, 410, 416                                                                                                  | 80-250   | 0.0002 | 0.0003 | 0.0005 | 0.001  | 0.0015 | 0.0025 | 0.003  | 0.004  |
| <b>HIGH TEMP. ALLOYS</b>                                                                                                    |          |        |        |        |        |        |        |        |        |
| Cobalt Base: Stellite, HS-21, Haynes 25/188, X-40, L-605                                                                    | 50-90    | 0.0003 | 0.0004 | 0.0006 | 0.0008 | 0.0012 | 0.0015 | 0.002  | 0.0025 |
| Nickel Base: Inconel 600/625, Nichel 200-270, Invar, Monel 400-405, K-Monel, PermaNichel 300, Incoly 600-800, Mar-M-246/247 | 50-95    | 0.0004 | 0.0005 | 0.0008 | 0.001  | 0.002  | 0.0025 | 0.003  | 0.004  |
| Iron Base: N-155, Timken 16-26-6, Incoloy 800-802, Multimet                                                                 | 70-125   | 0.0004 | 0.0005 | 0.001  | 0.0015 | 0.002  | 0.0025 | 0.003  | 0.004  |
| <b>STEELS</b>                                                                                                               |          |        |        |        |        |        |        |        |        |
| High Strength Steels: 4140, 4340, 6150, 52100, H11, H13                                                                     | 100-160  | 0.0004 | 0.0006 | 0.001  | 0.0015 | 0.002  | 0.0025 | 0.003  | 0.004  |
| High Alloy Steels-Mold & Die: A-2/6/10, P20, 01, 02, 06                                                                     | 100-160  | 0.0004 | 0.0006 | 0.001  | 0.0015 | 0.0015 | 0.0025 | 0.003  | 0.004  |
| Medium Alloy Steels: 200, 250, 300                                                                                          | 100-350  | 0.0005 | 0.0005 | 0.001  | 0.002  | 0.0025 | 0.0035 | 0.004  | 0.005  |
| Low Alloy Steels-Maraging: 10XX, 11XX, 13XX                                                                                 | 100-350  | 0.0005 | 0.0007 | 0.0012 | 0.002  | 0.003  | 0.004  | 0.005  | 0.006  |
| <b>CAST IRONS</b>                                                                                                           |          |        |        |        |        |        |        |        |        |
| Ductile Iron: Ductile Cast Iron                                                                                             | 120-350  | 0.0005 | 0.0008 | 0.0015 | 0.002  | 0.0022 | 0.003  | 0.004  | 0.006  |
| Cast Iron: Gray Cast Iron                                                                                                   | 120-300  | 0.0005 | 0.001  | 0.002  | 0.003  | 0.004  | 0.005  | 0.006  | 0.008  |
| <b>TITANIUM</b>                                                                                                             |          |        |        |        |        |        |        |        |        |
| Titanium Alloys: Commercially Pure, 6AL-4V, ASTM 1/2/3, 6AL-25N-4Zr-2Mo-Si                                                  | 100-250  | 0.0003 | 0.0004 | 0.0005 | 0.001  | 0.0015 | 0.0025 | 0.003  | 0.004  |

\*These are base-line recommendations. Adjust feeds and speeds according to individual circumstances.

RPM = SFM X 3.82/Tool Diameter    Feed (in inches per minute) = RPM X CTT X # of Flutes

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# GENERAL INFORMATION - CARBIDE TOOL SELECTION & USE



**BURRS** - Select the shape which conforms to the contour being machined. The choice of fine, medium, or coarse cut depends on the material to be cut, the finish required and the shape of the burr. Medium cut is used for general purpose deburring of steel, cast iron, and other ferrous materials. A fine cut burr is used for a finer finish. Diamond cut (across flute pattern) will cut fast and permit better control in free hand operation. Stringy materials are cut easily because it produces a powder like chip with its hundreds of chisel-like flutes.

Insert shank as far as possible into the chuck. This will help prevent whipping or chatter. Use just enough pressure to keep

the burr cutting. Excessive pressure will slow spindle speed and damage the cutting edges. Keep the burr moving at all times to prevent it from digging into the work. Do not run burr beyond point of normal resharpener. The heat and pressures will cause excessive chipping of the cutting edges. Thus, the life of the burr will be greatly reduced or damaged beyond repair. Solid carbide burrs will out perform high speed steel tools and mounted wheels as much as 50 to 1 and reduce machining up to 65% when properly used.

**NOTE: Medium cuts will be furnished unless otherwise specified.**

## MAXIMUM SPEEDS RECOMMENDED ON BURRS WITH 1/4" DIAMETER SHANKS

**Table No. 1:** Malleable Iron, Cast Iron, Die Steels, Aluminum, Steel Welds, Tool Steels, Nabal Bronze, Brass, Etc.

| BURR DIAMETER | STANDARDS CUT NO. OF FLUTES | SPEED RPM   |             |
|---------------|-----------------------------|-------------|-------------|
|               |                             | TABLE NO. 1 | TABLE NO. 2 |
| 1/16          | 14                          | 50,000      | 75,000      |
| 3/32          | 16                          | 40,000      | 60,000      |
| 1/8           | 18                          | 35,000      | 53,000      |
| 3/16          | 20                          | 25,000      | 38,000      |
| 1/4           | 24                          | 22,000      | 33,000      |
| 5/16          | 26                          | 20,000      | 30,000      |
| 3/8           | 28                          | 18,000      | 27,000      |
| 7/16          | 30                          | 17,000      | 26,000      |
| 1/2           | 32                          | 16,000      | 24,000      |
| 5/8           | 34                          | 15,000      | 23,000      |
| 3/4           | 36                          | 14,000      | 21,000      |
| 7/8           | 38                          | 13,000      | 20,000      |
| 1             | 40                          | 12,000      | 18,000      |

**Table No. 2:** Refers to Stainless Steel

| BURR DIA. | COARSE CUT NO. OF FLUTES | SPEED RPM |         | FINE CUT NO. OF FLUTES | SPEED RPM |         |
|-----------|--------------------------|-----------|---------|------------------------|-----------|---------|
|           |                          | TABLE 1   | TABLE 2 |                        | TABLE 1   | TABLE 2 |
| 1/16      | 8                        | 65,000    | 98,000  | 20                     | 30,000    | 45,000  |
| 3/32      | 10                       | 55,000    | 83,000  | 22                     | 25,000    | 38,000  |
| 1/8       | 12                       | 45,000    | 68,000  | 26                     | 20,000    | 30,000  |
| 3/16      | 14                       | 39,000    | 59,000  | 30                     | 16,000    | 24,000  |
| 1/4       | 16                       | 35,000    | 53,000  | 34                     | 14,000    | 21,000  |
| 5/16      | 16                       | 32,000    | 48,000  | 38                     | 12,000    | 18,000  |
| 3/8       | 18                       | 29,000    | 44,000  | 42                     | 11,000    | 17,000  |
| 7/16      | 18                       | 27,000    | 41,000  | 46                     | 10,500    | 15,800  |
| 1/2       | 20                       | 25,000    | 38,000  | 50                     | 10,000    | 15,000  |
| 5/8       | 22                       | 23,000    | 35,000  | 54                     | 9,500     | 14,300  |
| 3/4       | 24                       | 20,000    | 30,000  | 58                     | 9,000     | 13,500  |
| 7/8       | 26                       | 19,000    | 29,000  | 60                     | 8,500     | 12,700  |
| 1         | 28                       | 18,000    | 27,000  | 62                     | 8,000     | 12,000  |

**DRILLS** - Solid carbide drills will produce clean holes to close tolerance. They have extended life because of their extra rigidity and resistance to abrasion, if they are properly used. Riding the drill or allowing it to dwell, or not feed, will dull the edges causing a need for excessive resharpener. Hand feed, using steady speed and feed, is recommended for drilling hardened steel. Too much pressure can cause breakage. Run at approximately twice the speed of high speed steel drills with the same feed. Dulling and possible breakage are caused by vibration and chatter. To eliminate this, decrease speed and increase feed. Spindles must be in good condition and the work should be held rigidly.

| MATERIAL                          | LUBRICANT                     |
|-----------------------------------|-------------------------------|
| Aluminum                          | Kerosene or Soluble Oil       |
| Bakelite, Fibre, Rubber, Plastics | Dry or Air Blast              |
| Copper, Brass, Bronze, etc.       | Dry, Air Blast or Soluble Oil |
| Magnesium                         | Soluble Oil or Light Oil      |
| Cast & Malleable Iron             | Soluble Oil, Dry or Air Blast |
| Monel Metal                       | Soluble Oil                   |
| Stainless Steels                  | Light or Soluble Oil          |
| Steels Softer than Rockwell C-50  | Light or Soluble Oil          |
| Steels Harder than Rockwell C-50  | Light Oil                     |

| DRILL DIAMETER | INCHES PER REVOLUTION |      |
|----------------|-----------------------|------|
|                | MIN.                  | MAX. |
| Under 1/16     | .001                  | .002 |
| 1/16 to 1/8    | .001                  | .003 |
| 1/8 to 3/16    | .002                  | .005 |
| 3/16 to 1/4    | .002                  | .008 |
| 1/4 to 3/8     | .003                  | .012 |
| 3/8 to 1/2     | .004                  | .012 |

| MATERIALS                  | SURFACE FT./MINUTE |         |
|----------------------------|--------------------|---------|
|                            | MINIMUM            | MAXIMUM |
| Rockwell C-30 & Under      | 80                 | 148     |
| Rockwell C-30 to C-40      | 45                 | 91      |
| Rockwell C-40 to C-50      | 32                 | 49      |
| Rockwell C-50 to C-60      | 23                 | 30      |
| Rockwell C-60 & Over       | 15                 | 20      |
| Aluminum & Aluminum Alloys | 198                | 400     |
| Brass & Bronze             | 200                | 395     |
| Cast & Malleable Iron      | 92                 | 200     |
| Magnesium                  | 300                | 597     |
| Stainless Steel            | 82                 | 200     |
| Copper                     | 200                | 400     |
| Fibre                      | 205                | 597     |
| Hard Rubber                | 198                | 602     |
| Monel Metal                | 80                 | 200     |
| Plastics                   | 253                | 698     |
| Glass Epoxy                | 150                | 253     |

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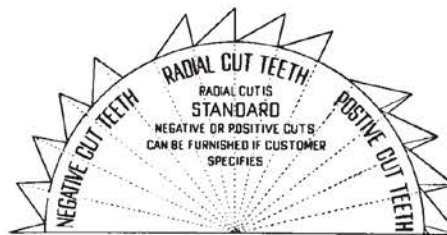




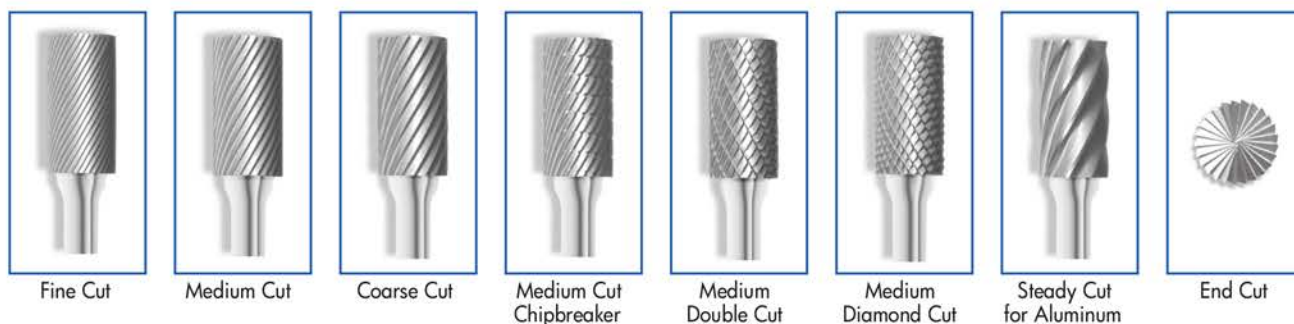
## SELECTION OF BASIC CUTS AND TYPES OF FLUTES

The proper flute selection is necessary to obtain best results. Selecting the right size cut assures that the job will be done to perfection required. RIGHT is a chart that shows the types of flutes available at Rico. BELOW are three charts that show the types of cuts. NOTE what each cut is best suited for.

## TYPES OF FLUTES AVAILABLE



Three types of cuts are available. The radial cut is the standard cut for all Rico rotary cutters. However, a few special cut patterns are listed. If soft metals, like aluminum are to be cut, specify a negative cut.



### FINE CUT

**Fine Flutes:** Use when a good finish is necessary and where removal of stock is not primary. Inadvisable for use on non-ferrous material. Fine cut available only upon specification. Diamond or Double cut may be requested.

### STANDARD CUT

**General Purpose Fluting:** For use when medium stock removal and finish is desired. Standard cut is stocked, only and supplied unless otherwise specified. Diamond or Double cut may be requested.

### COARSE CUT

**Coarse Fluting:** For rapid stock removal on non-ferrous materials, when finish is not the primary object. Diamond or Double cut is available on specification only.

|                |      |      |      |      |      |      |      |
|----------------|------|------|------|------|------|------|------|
|                |      |      |      |      |      |      |      |
| Cut No.        | 1    | 2    | 3    | 4    | 5    | 6    | 7    |
| Teeth Per Inch | 62   | 50   | 40   | 31   | 25   | 20   | 16   |
| Pitch          | .016 | .020 | .025 | .032 | .040 | .050 | .062 |

|                |      |      |      |      |      |      |      |
|----------------|------|------|------|------|------|------|------|
|                |      |      |      |      |      |      |      |
| Cut No.        | 8    | 9    | 10   | 11   | 12   | 13   | 14   |
| Teeth Per Inch | 13   | 11   | 9    | 8    | 7    | 6    | 5    |
| Pitch          | .076 | .092 | .111 | .125 | .143 | .166 | .200 |

Above is a table showing pitches available on Rico rotary cutters. (Pitch is distance between flutes.) RIGHT - this chart shows fine, standard, and coarse cuts for the corresponding diameters. NOTE - state cut number when ordering a cut different from this table.

| Diameter | Fine | Standard | Coarse |
|----------|------|----------|--------|
| 3/32"    | 2    | 3        | 5      |
| 1/8"     | 3    | 4        | 5      |
| 3/16"    | 3    | 5        | 6      |
| 1/4"     | 4    | 5        | 7      |
| 5/16"    | 4    | 6        | 7      |
| 3/8"     | 4    | 6        | 8      |
| 7/16"    | 5    | 6        | 8      |
| 1/2"     | 5    | 7        | 9      |
| 9/16"    | 5    | 7        | 9      |
| 5/8"     | 5    | 7        | 9      |
| 3/4"     | 6    | 8        | 10     |
| 7/8"     | 6    | 8        | 10     |
| 1"       | 6    | 8        | 10     |
| 1 - 1/8" | 6    | 9        | 11     |
| 1 - 1/4" | 6    | 9        | 11     |

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## SOLID CARBIDE ALL PURPOSE ROUTERS

HTC manufactures many lengths and sizes not listed. Please call for price and del. All routers are manufactured with down cut. Remember, HTC has a complete regrind service.



NO END CUT



BURR END



135° END DRILL POINT



END MILL END

| CUTTING DIAMETER | LENGTH OF FLUTE | SHANK DIAMETER | OVERALL LENGTH | NO END CUT |            | BURR END   |            | 135° DRILL POINT |            | END MILL END |            |
|------------------|-----------------|----------------|----------------|------------|------------|------------|------------|------------------|------------|--------------|------------|
|                  |                 |                |                | EDP NUMBER | LIST PRICE | EDP NUMBER | LIST PRICE | EDP NUMBER       | LIST PRICE | EDP NUMBER   | LIST PRICE |
| 1/16             | 3/16            | 1/8            | 1-1/2          | 92084      | 5.25       | 92284      | 6.00       | 92384            | 6.75       | 92184        | 6.90       |
| 1/8              | 1/2             | 1/8            | 1-1/2          | 92085      | 5.60       | 92285      | 6.80       | 92385            | 7.00       | 92185        | 7.15       |
| 3/16             | 5/8             | 3/16           | 2              | 92086      | 9.25       | 92286      | 10.50      | 92386            | 11.35      | 92186        | 11.80      |
| 1/4              | 3/4             | 1/4            | 2              | 92087      | 9.90       | 92287      | 11.10      | 92387            | 12.90      | 92187        | 13.55      |
| 1/4              | 1               | 1/4            | 2-1/2          | 93087      | 10.95      | 93287      | 12.20      | 93387            | 13.60      | 93187        | 14.20      |
| 1/4              | 1               | 1/4            | 3              | 94087      | 13.65      | 94287      | 13.90      | 94387            | 15.00      | 94187        | 15.85      |
| 5/16             | 1               | 5/16           | 2-1/2          | 92088      | 22.75      | 92288      | 24.15      | 92388            | 26.60      | 92188        | 26.95      |
| 3/8              | 1               | 3/8            | 2-1/2          | 92089      | 23.10      | 92289      | 25.70      | 92389            | 26.90      | 92189        | 27.30      |
| 1/2              | 1               | 1/2            | 3              | 92090      | 42.40      | 92290      | 45.95      | 92390            | 47.45      | 92190        | 48.75      |

Tolerances: Cut Diameter - +.000 -.005 Shank Diameter +.0000 -.0005



Two straight flutes, used for wood, laminates and plastics.



2 RH spiral, RH cutting flutes up cut for wood, plastics and non-ferrous materials.



2 LH spiral, RH cutting flutes, down cut, used for wood, plastics and non-ferrous materials.

| CUTTING DIAMETER | LENGTH OF FLUTE | SHANK DIAMETER | OVERALL LENGTH | STRAIGHT FLUTE | RH SPIRAL  | LH SPIRAL  | LIST PRICE |
|------------------|-----------------|----------------|----------------|----------------|------------|------------|------------|
|                  |                 |                |                | EDP NUMBER     | EDP NUMBER | EDP NUMBER |            |
| 1/8              | 1/2             | 1/8            | 1-1/2          | 93125          | 93130      | 93135      | 8.90       |
| 3/16             | 5/8             | 3/16           | 2              | 93126          | 93131      | 93136      | 12.90      |
| 1/4              | 1               | 1/4            | 2-1/2          | 93127          | 93132      | 93137      | 15.80      |
| 3/8              | 1               | 3/8            | 2-1/2          | 93128          | 93133      | 93138      | 24.90      |
| 1/2              | 1               | 1/2            | 2-1/2          | 93129          | 93134      | 93139      | 43.40      |

Tolerances: Cut Diameter - +.000 -.003 Shank Diameter +.0000 -.0005

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## CENTERLESS GROUND CARBIDE ROUNDS

### SERIES SSE-SPLIT ONE END



### SERIES SDE-SPLIT BOTH ENDS



| DIAMETER X LENGTH | LENGTH OF SPLIT | EDP NUMBER | LIST PRICE |
|-------------------|-----------------|------------|------------|
| 1/8 x 1-1/2       | 3/8             | 61001      | 3.40       |
| 1/8 x 2           | 3/8             | 61002      | 4.60       |
| 1/8 x 3           | 3/8             | 60183      | 5.60       |
| 1/8 x 4           | 3/8             | 60184      | 7.50       |
| 3/16 x 2          | 1/2             | 61003      | 6.20       |
| 3/16 x 3          | 1/2             | 61004      | 9.30       |
| 3/16 x 4          | 1/2             | 63164      | 12.60      |
| 1/4 x 2           | 1/2             | 61005      | 8.95       |
| 1/4 x 2-1/2       | 1/2             | 61006      | 9.40       |
| 1/4 x 3           | 1/2             | 61007      | 12.75      |
| 1/4 x 4           | 1/2             | 61144      | 18.50      |
| 5/16 x 2-1/2      | 1/2             | 61008      | 14.30      |
| 5/16 x 3          | 1/2             | 61009      | 19.90      |
| 5/16 x 4          | 1/2             | 65164      | 21.30      |
| 3/8 x 2-1/2       | 1/2             | 61010      | 17.60      |
| 3/8 x 3           | 1/2             | 61011      | 23.25      |
| 3/8 x 4           | 1/2             | 63807      | 26.95      |
| 7/16 x 2-1/2      | 5/8             | 67162      | 25.40      |
| 7/16 x 3          | 5/8             | 67163      | 29.00      |
| 7/16 x 4          | 5/8             | 67164      | 37.40      |
| 1/2 x 3           | 5/8             | 61012      | 29.50      |
| 1/2 x 4           | 5/8             | 61013      | 45.60      |

| DIAMETER X LENGTH | LENGTH OF SPLIT | EDP NUMBER | LIST PRICE |
|-------------------|-----------------|------------|------------|
| 1/8 x 1-1/2       | 3/8             | 62001      | 5.90       |
| 1/8 x 2           | 3/8             | 62002      | 6.95       |
| 1/8 x 3           | 3/8             | 62183      | 9.45       |
| 1/8 x 4           | 3/8             | 62184      | 12.90      |
| 3/16 x 2          | 1/2             | 62003      | 7.80       |
| 3/16 x 3          | 1/2             | 62004      | 14.90      |
| 3/16 x 4          | 1/2             | 62364      | 15.95      |
| 1/4 x 2           | 1/2             | 62005      | 11.80      |
| 1/4 x 2-1/2       | 1/2             | 62006      | 13.00      |
| 1/4 x 3           | 1/2             | 62007      | 17.20      |
| 1/4 x 4           | 1/2             | 62144      | 22.75      |
| 5/16 x 2-1/2      | 1/2             | 62008      | 17.60      |
| 5/16 x 3          | 1/2             | 62009      | 22.75      |
| 5/16 x 4          | 1/2             | 62564      | 25.95      |
| 3/8 x 2-1/2       | 1/2             | 62010      | 23.65      |
| 3/8 x 3           | 1/2             | 62011      | 26.40      |
| 3/8 x 4           | 1/2             | 62384      | 31.55      |
| 7/16 x 2-1/2      | 5/8             | 62762      | 29.60      |
| 7/16 x 3          | 5/8             | 62763      | 36.40      |
| 7/16 x 4          | 5/8             | 62764      | 41.95      |
| 1/2 x 3           | 5/8             | 62012      | 37.60      |
| 1/2 x 4           | 5/8             | 62013      | 56.40      |

**SPECIAL SIZES AVAILABLE UPON REQUEST**

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## SOLID CARBIDE CENTER LAPS



| TOOL NUMBER | DIAMETER | INCLUDED ANGLE | NO. OF FLUTES | OVERALL LENGTH | SHANK DIAMETER | EDP NUMBER | LIST PRICE |
|-------------|----------|----------------|---------------|----------------|----------------|------------|------------|
| 1100        | 3/32     | 60°            | 5             | 1-1/2          | 3/32           | 11100      | 5.95       |
| 1101        | 1/8      | 60°            | 5             | 1-1/2          | 1/8            | 11101      | 5.95       |
| 1102        | 3/16     | 60°            | 5             | 1-1/2          | 3/16           | 11102      | 9.95       |
| 1103        | 1/4      | 60°            | 5             | 2              | 1/4            | 11103      | 12.80      |
| 1104        | 5/16     | 60°            | 7             | 2              | 5/16           | 11104      | 19.95      |
| 1105        | 3/8      | 60°            | 7             | 2              | 3/8            | 11105      | 22.20      |
| 1106        | 7/16     | 60°            | 7             | 2              | 7/16           | 11106      | 28.00      |
| 1107        | 1/2      | 60°            | 7             | 2              | 1/2            | 11107      | 31.10      |
| 1108        | 5/8      | 60°            | 9             | 2-1/2          | 1/2            | 11108      | 33.15      |
| 1109        | 3/4      | 60°            | 9             | 2-1/2          | 1/2            | 11109      | 49.30      |
| 1110        | 7/8      | 60°            | 9             | 2-1/2          | 1/2            | 11110      | 59.00      |
| 1111        | 1        | 60°            | 9             | 2-1/2          | 1/2            | 11111      | 62.90      |

## SOLID CARBIDE BORING TOOLS



| TOOL NUMBER | MIN. HOLE DIAMETER | MAXIMUM DEPTH | SHANK DIAMETER | OVERALL LENGTH | EDP NUMBER | LIST PRICE |
|-------------|--------------------|---------------|----------------|----------------|------------|------------|
| R-B-0       | .090               | 1/2           | 1/8            | 1-1/2          | 91300      | 12.95      |
| R-B-1       | .120               | 5/8           | 1/8            | 1-1/2          | 91301      | 12.95      |
| R-B-2       | .150               | 3/4           | 3/16           | 2              | 91302      | 15.70      |
| R-B-3       | .180               | 3/4           | 3/16           | 2              | 91303      | 16.90      |
| R-B-4       | .210               | 1             | 1/4            | 2              | 91304      | 21.00      |
| R-B-5       | .240               | 1             | 1/4            | 2              | 91305      | 23.20      |
| R-B-6       | .275               | 1-1/4         | 5/16           | 2-1/2          | 91306      | 27.10      |
| R-B-7       | .300               | 1-1/4         | 5/16           | 2-1/2          | 91307      | 32.80      |
| R-B-8       | .330               | 1-1/2         | 3/8            | 2-1/2          | 91308      | 36.55      |
| R-B-9       | .360               | 1-1/2         | 3/8            | 2-1/2          | 91309      | 38.40      |

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## SOLID CARBIDE SLITTING SAWS



| DIAMETER | THICKNESS RANGE | HOLE DIAMETER | SHANK DIAMETER | NUMBER OF TEETH | PRICE 1-5 PCS. | PRICE 6-25 PCS. |
|----------|-----------------|---------------|----------------|-----------------|----------------|-----------------|
| 1/4      | .010-.035       | --            | 1/8            | 12              | 35.75          | 28.80           |
| 1/4      | .010-.035       | 1/8           | --             | 12              | 29.55          | 21.95           |
| 5/16     | .010-.035       | --            | 1/8            | 12              | 35.75          | 28.80           |
| 5/16     | .010-.035       | 1/8           | --             | 12              | 29.55          | 21.95           |
| 3/8      | .010-.030       | --            | 1/8 or 1/4     | 14              | 37.30          | 31.00           |
| 3/8      | .010-.030       | 1/8           | --             | 14              | 29.55          | 21.95           |
| 3/8      | .031-.063       | --            | 1/8 or 1/4     | 14              | 34.90          | 27.30           |
| 3/8      | .031-.063       | 1/8           | --             | 14              | 29.55          | 21.95           |
| 1/2      | .010-.035       | --            | 1/8 or 1/4     | 14              | 37.60          | 30.20           |
| 1/2      | .010-.035       | 3/16          | --             | 14              | 29.55          | 21.95           |
| 1/2      | .036-.063       | --            | 1/8 or 1/4     | 14              | 35.80          | 28.95           |
| 1/2      | .036-.063       | 3/16          | --             | 14              | 28.90          | 21.10           |
| 5/8      | .015-.040       | --            | 1/4            | 16              | 39.95          | 32.35           |
| 5/8      | .015-.040       | 1/4           | --             | 16              | 33.60          | 25.75           |
| 5/8      | .041-.063       | --            | 1/4            | 16              | 40.30          | 32.50           |
| 5/8      | .041-.063       | 1/4           | --             | 16              | 33.60          | 25.75           |
| 3/4      | .015-.040       | 1/4           | --             | 18              | 36.10          | 25.75           |
| 3/4      | .014-.093       | 1/4           | --             | 18              | 40.90          | 28.40           |
| 3/4      | .094-.125       | 1/4           | --             | 18              | 45.45          | 34.15           |
| 1        | .015-.063       | 5/16          | --             | 20              | 44.65          | 36.65           |
| 1        | .064-.093       | 5/16          | --             | 20              | 49.70          | 39.00           |
| 1        | .094-.125       | 5/16          | --             | 20              | 54.85          | 43.30           |
| 1-1/4    | .020-.063       | 5/16          | --             | 24              | 48.90          | 40.60           |
| 1-1/4    | .064-.093       | 5/16          | --             | 24              | 55.35          | 43.25           |
| 1-1/4    | .094-.125       | 5/16          | --             | 24              | 58.65          | 48.55           |
| 1-1/2    | .030-.063       | 1/2           | --             | 36              | 52.20          | 43.15           |
| 1-1/2    | .064-.093       | 1/2           | --             | 36              | 56.40          | 47.45           |
| 1-1/2    | .094-.125       | 1/2           | --             | 36              | 61.50          | 49.95           |
| 1-3/4    | .040-.063       | 1/2           | --             | 38              | 63.30          | 51.85           |
| 1-3/4    | .064-.093       | 1/2           | --             | 38              | 69.90          | 66.00           |
| 1-3/4    | .094-.125       | 1/2           | --             | 38              | 80.50          | 69.90           |
| 2        | .040-.063       | 1/2           | --             | 40              | 74.40          | 64.50           |
| 2        | .064-.093       | 1/2           | --             | 40              | 83.80          | 74.00           |
| 2        | .094-.125       | 1/2           | --             | 40              | 96.20          | 85.40           |
| 2-1/2    | .040-.063       | 1             | --             | 48              | 84.55          | 73.75           |
| 2-1/2    | .064-.093       | 1             | --             | 48              | 98.50          | 89.95           |
| 2-1/2    | .094-.125       | 1             | --             | 48              | 109.80         | 99.90           |
| 3        | .040-.063       | 1             | --             | 72              | 123.05         | 114.65          |
| 3        | .064-.093       | 1             | --             | 72              | 139.40         | 129.00          |
| 3        | .094-.125       | 1             | --             | 72              | 165.90         | 156.70          |
| 3-1/2    | .040-.063       | 1             | --             | 76              | 142.70         | 134.55          |
| 3-1/2    | .064-.093       | 1             | --             | 76              | 159.60         | 150.00          |
| 3-1/2    | .094-.125       | 1             | --             | 76              | 210.00         | 199.30          |
| 4        | .040-.063       | 1             | --             | 80              | 151.75         | 143.45          |
| 4        | .064-.093       | 1             | --             | 80              | 166.65         | 157.30          |
| 4        | .094-.125       | 1             | --             | 80              | 217.75         | 206.85          |

For variations from above - please call.

Tolerances: Cut Diameter - +.015 -.015 Hole Diameter +.0005 -.0000 Thickness +.00025 -.00025

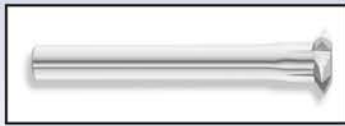
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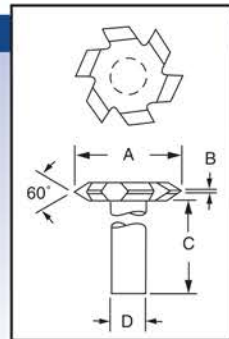
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## SOLID CARBIDE THREAD MILLS



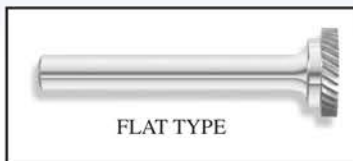
These Carbide Thread Mills are chiefly intended for milling precision threads in hard to cut materials, such as laminated plastics, fiberglass, etc. They can also be used with some care in non-ferrous metals and mild steel. Thread form generated is American Standard Thread. Minimum pitch listed is that for a female thread.



| TOOL NUMBER | A   | B     | C     | D    | NUMBER OF FLUTES | MIN. PITCH | MAX. PITCH | EDP NUMBER | LIST PRICE |
|-------------|-----|-------|-------|------|------------------|------------|------------|------------|------------|
| RT-38W      | 3/8 | .002  | 1-3/4 | 3/16 | 4                | 32         | 20         | 12001      | 33.20      |
| RT-12W      | 1/2 | .0035 | 2     | 1/4  | 5                | 20         | 16         | 12002      | 39.90      |
| RT-34W      | 3/4 | .0045 | 2     | 1/4  | 6                | 16         | 8          | 12003      | 55.65      |
| RT-1W       | 1   | .009  | 2-1/2 | 3/8  | 7                | 8          | 4          | 12004      | 73.75      |

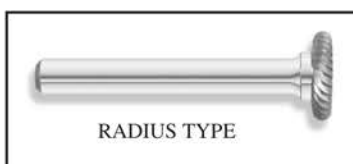
## SOLID CARBIDE THIN DISCS

### FLAT TYPE



| TOOL NUMBER | MIN. HOLE DIAMETER | EDP NUMBER | SHANK DIAMETER |
|-------------|--------------------|------------|----------------|
| 1/4         | 3/32               | 16251      | 25.25          |
| 5/16        | 3/32               | 16261      | 27.00          |
| 3/8         | 1/8                | 16271      | 29.70          |
| 1/2         | 1/8                | 16281      | 34.15          |
| 5/8         | 1/8                | 16291      | 37.90          |
| 3/4         | 5/32               | 16301      | 41.30          |
| 1           | 3/16               | 16321      | 46.50          |

### RADIUS TYPE



| TOOL NUMBER | MIN. HOLE DIAMETER | EDP NUMBER | SHANK DIAMETER |
|-------------|--------------------|------------|----------------|
| 1/4         | 3/32               | 16252      | 33.00          |
| 5/16        | 3/32               | 16262      | 36.55          |
| 3/8         | 1/8                | 16272      | 38.70          |
| 1/2         | 1/8                | 16282      | 44.45          |
| 5/8         | 1/8                | 16292      | 49.15          |
| 3/4         | 5/32               | 16302      | 55.20          |
| 1           | 3/16               | 16322      | 59.10          |

1/4" diameter thru 1/2" diameter with 1/8", 3/16" or 1/4" shanks.  
 5/8" and 3/4" diameters with 3/16" or 1/4" shanks.  
 1" diameter with 1/4" shanks.  
 Please specify shank size. Also specify flat or radius type

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## SOLID CARBIDE KEYSSET CUTTER W/ HARDENED STEEL SHANKS



Tolerances:

Cutting Diameter up to and including 3/4" +.010 -.015;  
7/8 + 1 - 1/2 diameter +.012; +.017.

Face Width +.0000 -.0005.

Shank Diameter +.0000 -.0005.

| TOOL NUMBER | AMERICAN STANDARDS | NOMINAL CUTTER DIA. | FACE WIDTH | OVERALL LENGTH | SHANK DIAMETER | NUMBER OF FLUTES | EDP NUMBER | LIST PRICE |
|-------------|--------------------|---------------------|------------|----------------|----------------|------------------|------------|------------|
| 1975        | 303                | 3/8                 | 3/32       | 2-3/32         | 1/2            | 8                | 91975      | 43.50      |
| 1976        | 403                | 3/8                 | 1/8        | 2-1/8          | 1/2            | 8                | 91976      | 43.50      |
| 1977        | 304                | 1/2                 | 3/32       | 2-3/32         | 1/2            | 10               | 91977      | 50.00      |
| 1978        | 404                | 1/2                 | 1/8        | 2-1/8          | 1/2            | 10               | 91978      | 50.50      |
| 1979        | 305                | 5/8                 | 3/32       | 2-3/32         | 1/2            | 10               | 91979      | 51.10      |
| 1980        | 405                | 5/8                 | 1/8        | 2-1/8          | 1/2            | 10               | 91980      | 55.90      |
| 1981        | 505                | 5/8                 | 5/32       | 2-5/32         | 1/2            | 10               | 91981      | 54.55      |
| 1982        | 605                | 5/8                 | 3/16       | 2-3/16         | 1/2            | 10               | 91982      | 59.00      |
| 1983        | 406                | 3/4                 | 1/8        | 2-1/8          | 1/2            | 10               | 91983      | 69.80      |
| 1984        | 506                | 3/4                 | 5/32       | 2-5/32         | 1/2            | 10               | 91984      | 71.00      |
| 1985        | 606                | 3/4                 | 3/16       | 2-3/16         | 1/2            | 10               | 91985      | 74.90      |
| 1986        | 806                | 3/4                 | 1/4        | 2-1/4          | 1/2            | 10               | 91986      | 75.65      |
| 1987        | 507                | 7/8                 | 5/32       | 2-5/32         | 1/2            | 12               | 91987      | 84.25      |
| 1988        | 607                | 7/8                 | 3/16       | 2-3/16         | 1/2            | 12               | 91988      | 84.60      |
| 1989        | 707                | 7/8                 | 7/32       | 2-7/32         | 1/2            | 12               | 91989      | 88.30      |
| 1990        | 807                | 7/8                 | 1/4        | 2-1/4          | 1/2            | 12               | 91990      | 89.95      |
| 1991        | 608                | 1                   | 3/16       | 2-3/16         | 1/2            | 12               | 91991      | 93.35      |
| 1992        | 708                | 1                   | 7/32       | 2-7/32         | 1/2            | 12               | 91992      | 102.00     |
| 1993        | 808                | 1                   | 1/4        | 2-1/4          | 1/2            | 12               | 91993      | 104.10     |
| 1994        | 609                | 1-1/8               | 3/16       | 2-3/16         | 1/2            | 14               | 91994      | 126.65     |
| 1995        | 709                | 1-1/8               | 7/32       | 2-7/32         | 1/2            | 14               | 91995      | 129.85     |
| 1996        | 809                | 1-1/8               | 1/4        | 2-1/4          | 1/2            | 14               | 91996      | 130.75     |
| 1997        | 610                | 1-1/4               | 3/16       | 2-3/16         | 1/2            | 14               | 91997      | 128.40     |
| 1998        | 710                | 1-1/4               | 7/32       | 2-7/32         | 1/2            | 14               | 91998      | 132.00     |
| 1999        | 810                | 1-1/4               | 1/4        | 2-1/4          | 1/2            | 14               | 91999      | 134.70     |
| 2000        | 812                | 1-1/2               | 1/4        | 2-1/4          | 1/2            | 16               | 92000      | 160.00     |
| 2001        | 1012               | 1-1/2               | 5/16       | 2-5/16         | 1/2            | 16               | 92001      | 164.90     |
| 2002        | 1212               | 1-1/2               | 3/8        | 2-3/8          | 1/2            | 16               | 92002      | 170.05     |

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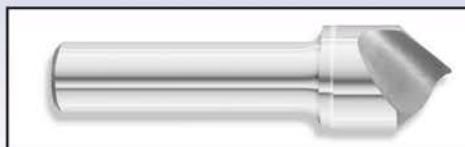
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PROUD TO BE MADE IN THE U.S.A.



## SOLID CARBIDE COUNTERSINKS

### SINGLE FLUTE



Ideal for countersinking mild steels and all materials except hardened steel. Produces finishes comparable to ground surface. Eliminates chatter, and tearing.

| BODY SIZE | SHANK DIAMETER | OVERALL LENGTH | 60° INC. EDP NUMBER | 82° INC. EDP NUMBER | 90° INC. EDP NUMBER | 100° INC. EDP NUMBER | LIST PRICE |
|-----------|----------------|----------------|---------------------|---------------------|---------------------|----------------------|------------|
| 1/8       | 1/8            | 1-1/2          | 91897               | 91898               | 91899               | 92999                | 10.90      |
| 3/16      | 3/16           | 2              | 91900               | 91901               | 91902               | 92902                | 12.20      |
| 1/4       | 1/4            | 2              | 91903               | 91904               | 91905               | 92905                | 15.25      |
| 3/8       | 1/4            | 2              | 91906               | 91907               | 91908               | 92908                | 20.20      |
| 1/2       | 1/4            | 2              | 91909               | 91910               | 91911               | 92911                | 31.30      |
| 5/8       | 1/2            | 2-3/4          | 91912               | 91913               | 91914               | 92914                | 42.90      |
| 3/4       | 1/2            | 2-3/4          | 91915               | 91916               | 91917               | 92917                | 64.60      |
| 1         | 1/2            | 3              | 91918               | 91919               | 91920               | 92920                | 89.90      |
| 1-1/4     | 3/4            | 3-1/4          | 91921               | 91922               | 91923               | 92923                | 129.60     |

1/8 through 1/4 solid carbide.  
Can be re-sharpened many times.

## SOLID CARBIDE COUNTERSINK SETS

### SINGLE FLUTE

60°, 82°, 90° 100°  
INCLUDED ANGLE



| INCLUDED ANGLE | EDP NUMBER | LIST PRICE |
|----------------|------------|------------|
| 60°            | 66266      | 241.25     |
| 82°            | 66268      | 241.25     |
| 90°            | 66269      | 241.25     |
| 100°           | 66270      | 241.25     |

Sizes 1/4", 3/8", 1/2", 3/4", 1" in wood box.

OTHER DEGREE ANGLES ON REQUEST.

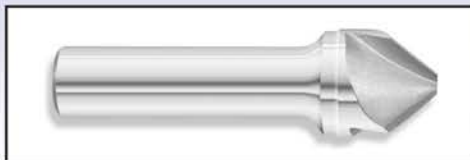
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PROUD TO BE MADE IN THE U.S.A.

## SOLID CARBIDE CHATTERLESS COUNTERSINKS

### 3 FLUTE



Spiral flutes for a chatterless and clean finish. Can be resharpened many times.

| BODY SIZE | SHANK DIAMETER | OVERALL LENGTH | 60° INC. EDP NUMBER | 82° INC. EDP NUMBER | 90° INC. EDP NUMBER | 100° INC. EDP NUMBER | LIST PRICE |
|-----------|----------------|----------------|---------------------|---------------------|---------------------|----------------------|------------|
| 1/8       | 1/8            | 1-1/2          | 36601               | 36621               | 36641               | 36661                | 10.90      |
| 3/16      | 3/16           | 2              | 36602               | 36622               | 36642               | 36662                | 14.25      |
| 1/4       | 1/4            | 2              | 36603               | 36623               | 36643               | 36663                | 16.20      |
| 5/16      | 1/4            | 2-1/2          | 36604               | 36624               | 36644               | 36664                | 19.10      |
| 3/8       | 1/4            | 2-1/2          | 36605               | 36625               | 36645               | 36665                | 20.90      |
| 1/2       | 1/4            | 2-1/2          | 36606               | 36626               | 36646               | 36666                | 31.90      |
| 5/8       | 1/2            | 2-5/8          | 36607               | 36627               | 36647               | 36667                | 52.50      |
| 3/4       | 1/2            | 2-3/4          | 36608               | 36628               | 36648               | 36668                | 61.30      |
| 7/8       | 1/2            | 3              | 36609               | 36629               | 36649               | 36669                | 88.70      |
| 1         | 1/2            | 3              | 36610               | 36630               | 36650               | 36670                | 92.40      |
| 1-1/4     | 3/4            | 3-1/4          | 36611               | 36631               | 36651               | 36671                | 156.50     |
| 1-1/2     | 3/4            | 3-1/2          | 36612               | 36632               | 36652               | 36672                | 224.45     |

## SOLID CARBIDE COUNTERSINK SETS

### 3 FLUTE

60°, 82°, 90° 100°  
INCLUDED ANGLE



| INCLUDED ANGLE | EDP NUMBER | LIST PRICE |
|----------------|------------|------------|
| 60°            | 66360      | 242.70     |
| 82°            | 66368      | 242.70     |
| 90°            | 66390      | 242.70     |
| 100°           | 66300      | 242.70     |

Sizes 1/4", 3/8", 1/2", 3/4", 1" in wood box.

OTHER DEGREE ANGLES ON REQUEST.

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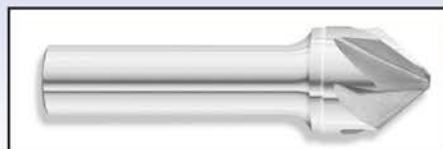
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PROUD TO BE MADE IN THE U.S.A.



## SOLID CARBIDE CHATTERLESS COUNTERSINKS

### 6 FLUTE



Chatterless countersinks have flutes designed for fast shearing cuts ideal for hardened steel and other tough alloys.

| BODY SIZE | SHANK DIAMETER | OVERALL LENGTH | 60° INC. EDP NUMBER | 82° INC. EDP NUMBER | 90° INC. EDP NUMBER | 100° INC. EDP NUMBER | LIST PRICE |
|-----------|----------------|----------------|---------------------|---------------------|---------------------|----------------------|------------|
| 1/8       | 1/8            | 1-1/2          | 36100               | 36120               | 36140               | 36170                | 10.90      |
| 3/16      | 3/16           | 2              | 36101               | 36121               | 36141               | 36171                | 14.25      |
| 1/4       | 1/4            | 2              | 36102               | 36122               | 36142               | 36172                | 16.20      |
| 5/16      | 1/4            | 2-1/2          | 36103               | 36123               | 36143               | 36173                | 19.10      |
| 3/8       | 1/4            | 2-1/2          | 36104               | 36124               | 36144               | 36174                | 20.90      |
| 1/2       | 1/4            | 2-1/2          | 36105               | 36125               | 36145               | 36175                | 31.90      |
| 5/8       | 1/2            | 2-5/8          | 36106               | 36126               | 36146               | 36176                | 52.50      |
| 3/4       | 1/2            | 2-3/4          | 36107               | 36127               | 36147               | 36177                | 61.30      |
| 7/8       | 1/2            | 3              | 36108               | 36128               | 36148               | 36178                | 88.70      |
| 1         | 1/2            | 3              | 36109               | 36129               | 36149               | 36179                | 92.40      |
| 1-1/4     | 3/4            | 3-1/4          | 36110               | 36130               | 36150               | 36180                | 156.50     |
| 1-1/2     | 3/4            | 3-1/2          | 36111               | 36131               | 36151               | 36181                | 224.45     |

## SOLID CARBIDE COUNTERSINK SETS

### 6 FLUTE

60°, 82°, 90° 100°  
INCLUDED ANGLE



| INCLUDED ANGLE | EDP NUMBER | LIST PRICE |
|----------------|------------|------------|
| 60°            | 66226      | 242.70     |
| 82°            | 66228      | 242.70     |
| 90°            | 66229      | 242.70     |
| 100°           | 66230      | 242.70     |

Sizes 1/4", 3/8", 1/2", 3/4", 1" in wood box.

OTHER DEGREE ANGLES ON REQUEST.

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## CHATTERLESS COUNTERSINKS

**SINGLE FLUTE - H.S.S.**



Chatterless countersinks have flutes designed for fast shearing cuts ideal for hardened steel and other tough alloys.

| BODY SIZE | SHANK DIAMETER | OVERALL LENGTH | 60° INC. EDP NUMBER | 82° INC. EDP NUMBER | 90° INC. EDP NUMBER | 100° INC. EDP NUMBER | 120° INC. EDP NUMBER | LIST PRICE |
|-----------|----------------|----------------|---------------------|---------------------|---------------------|----------------------|----------------------|------------|
| 1/8       | 1/8            | 1-1/2          | 31000               | 31020               | 31040               | 31060                | 31080                | 6.10       |
| 3/16      | 3/16           | 1-1/2          | 31001               | 31021               | 31041               | 31061                | 31081                | 6.25       |
| 1/4       | 3/16           | 2              | 31101               | 31121               | 31141               | 31161                | 31181                | 6.50       |
| 1/4       | 1/4            | 2              | 31002               | 31022               | 31042               | 31062                | 31082                | 6.50       |
| 5/16      | 1/4            | 2              | 31003               | 31023               | 31043               | 31063                | 31083                | 7.10       |
| 3/8       | 1/4            | 2              | 31004               | 31024               | 31044               | 31064                | 31084                | 7.50       |
| 1/2       | 1/4            | 2              | 31005               | 31025               | 31045               | 31065                | 31085                | 9.15       |
| 5/8       | 1/2            | 2-1/2          | 31006               | 31026               | 31046               | 31066                | 31086                | 12.25      |
| 3/4       | 1/2            | 2-3/4          | 31007               | 31027               | 31047               | 31067                | 31087                | 17.55      |
| 7/8       | 1/2            | 2-3/4          | 31008               | 31028               | 31048               | 31068                | 31088                | 24.00      |
| 1         | 1/2            | 2-3/4          | 31009               | 31029               | 31049               | 31069                | 31089                | 29.45      |
| 1-1/4     | 3/4            | 3-3/8          | 31010               | 31030               | 31050               | --                   | --                   | 55.25      |
| 1-1/2     | 3/4            | 3-3/8          | 31011               | 31031               | 31051               | --                   | --                   | 74.00      |
| 2         | 3/4            | 3-3/4          | 31012               | 31032               | 31052               | --                   | --                   | 120.25     |
| 2-1/2     | 1              | 4-3/4          | 31013               | 31033               | 31053               | --                   | --                   | 269.00     |
| 3         | 1              | 5              | 31014               | 31034               | 31054               | --                   | --                   | 370.00     |

## CHATTERLESS COUNTERSINK SETS

**SINGLE FLUTE - H.S.S.**



### R-230: 5 HSS COUNTERSINKS

1/4", 3/8", 1/2", 3/4" and 1" diameter in wood box.

| INCLUDED ANGLE | EDP NUMBER | LIST PRICE |
|----------------|------------|------------|
| 60°            | 66236      | 85.70      |
| 82°            | 66238      | 85.70      |
| 90°            | 66239      | 85.70      |

### R-240: 9 HSS COUNTERSINKS

3/16", 1/4", 5/16", 3/8", 1/2", 5/8", 3/4", and 1" diameter in wood box.

| INCLUDED ANGLE | EDP NUMBER | LIST PRICE |
|----------------|------------|------------|
| 60°            | 66246      | 131.75     |
| 82°            | 66248      | 131.75     |
| 90°            | 66249      | 131.75     |

### R-250: HSS COUNTERSINKS

3/16" diameter through 2" diameter in wood box.

| INCLUDED ANGLE | EDP NUMBER | LIST PRICE |
|----------------|------------|------------|
| 60°            | 66256      | 384.80     |
| 82°            | 66258      | 384.80     |
| 90°            | 66259      | 384.80     |

\*Also available in 100° and 120°. Cutters can be sharpened many times.



## CHATTERLESS COUNTERSINKS

3 FLUTE - H.S.S.



Spiral flutes for a chatterless and clean finish. Can be sharpened many times.

| BODY SIZE | SHANK DIAMETER | OVERALL LENGTH | 60° INC. EDP NUMBER | 82° INC. EDP NUMBER | 90° INC. EDP NUMBER | 100° INC. EDP NUMBER | 120° INC. EDP NUMBER | LIST PRICE |
|-----------|----------------|----------------|---------------------|---------------------|---------------------|----------------------|----------------------|------------|
| 3/16      | 3/16           | 1-1/2          | 33001               | 33021               | 33041               | 33061                | 33081                | 5.55       |
| 1/4       | 1/4            | 2              | 33002               | 33022               | 33042               | 33062                | 33082                | 5.70       |
| 5/16      | 1/4            | 2              | 33003               | 33023               | 33043               | 33063                | 33083                | 6.80       |
| 3/8       | 1/4            | 2              | 33004               | 33024               | 33044               | 33064                | 33084                | 7.10       |
| 1/2       | 1/4            | 2              | 33005               | 33025               | 33045               | 33065                | 33085                | 8.75       |
| 5/8       | 1/2            | 2-1/2          | 33006               | 33026               | 33046               | 33066                | 33086                | 12.45      |
| 3/4       | 1/2            | 2-1/2          | 33007               | 33027               | 33047               | 33067                | 33087                | 17.10      |
| 7/8       | 1/2            | 2-3/4          | 33008               | 33028               | 33048               | 33068                | 33088                | 23.55      |
| 1         | 1/2            | 2-3/4          | 33009               | 33029               | 33049               | 33069                | 33089                | 26.25      |
| 1-1/4     | 3/4            | 3-3/8          | 33010               | 33030               | 33050               | 33070                | 33090                | 39.95      |
| 1-1/2     | 3/4            | 3-1/2          | 33011               | 33031               | 33051               | 33071                | 33091                | 57.75      |
| 1-3/4     | 1              | 4-1/4          | 33012               | 33032               | 33052               | 33072                | 33092                | 77.00      |
| 2         | 1              | 4-3/8          | 33013               | 33033               | 33053               | 33073                | 33093                | 95.10      |
| 2-1/2     | 1              | 4-3/4          | 33014               | 33034               | 33054               | 33074                | 33094                | 252.30     |
| 3         | 1              | 5              | 33015               | 33035               | 33055               | 33075                | 33095                | 346.00     |

## CHATTERLESS COUNTERSINK SETS

3 FLUTE - H.S.S.



### R-270: 8 HSS COUNTERSINKS

1/4", 3/8", 1/2", 3/4" and 1" diameter in wood box.

| INCLUDED ANGLE | EDP NUMBER | LIST PRICE |
|----------------|------------|------------|
| 60°            | 66276      | 123.25     |
| 82°            | 66278      | 123.25     |
| 90°            | 66279      | 123.25     |

### R-280: HSS COUNTERSINKS

3/16" diameter through 1-1/2" diameter in wood box.

| INCLUDED ANGLE | EDP NUMBER | LIST PRICE |
|----------------|------------|------------|
| 60°            | 66286      | 226.50     |
| 82°            | 66288      | 226.50     |
| 90°            | 66289      | 226.50     |

\*Also available in 100° and 120°. Cutters can be sharpened many times.

## CHATTERLESS COUNTERSINKS

6 FLUTE - H.S.S.



Chatterless countersinks are designed with flute arrangements for fast and clean shearing cuts. These are of the finest quality made.

| BODY DIAMETER | SHANK DIAMETER | LENGTH OF SHANK | OVERALL LENGTH | 60° INC. EDP NUMBER | 82° INC. EDP NUMBER | 90° INC. EDP NUMBER | 100° INC. EDP NUMBER | 120° INC. EDP NUMBER | LIST PRICE |
|---------------|----------------|-----------------|----------------|---------------------|---------------------|---------------------|----------------------|----------------------|------------|
| 1/8           | 1/8            | --              | 1-1/2          | 36000               | 36020               | 36040               | 36060                | 36080                | 5.10       |
| 3/16          | 3/16           | --              | 1-1/2          | 36001               | 36021               | 36041               | 36061                | 36081                | 5.55       |
| 1/4           | 1/4            | --              | 2              | 36002               | 36022               | 36042               | 36062                | 36082                | 5.70       |
| 1/4           | 3/16           | 3/4             | 1-1/2          | 36003               | 36023               | 36043               | 36063                | 36083                | 5.70       |
| 5/16          | 1/4            | 1               | 2              | 36004               | 36024               | 36044               | 36064                | 36084                | 6.80       |
| 3/8           | 1/4            | 1               | 2              | 36005               | 36025               | 36045               | 36065                | 36085                | 7.10       |
| 1/2           | 1/4            | 1               | 2              | 36006               | 36026               | 36046               | 36066                | 36086                | 8.75       |
| 1/2           | 3/8            | 1               | 2              | 36007               | 36027               | 36047               | 36067                | 36087                | 8.75       |
| 5/8           | 1/2            | 1-1/8           | 2-1/2          | 36008               | 36028               | 36048               | 36068                | 36088                | 12.45      |
| 3/4           | 1/2            | 1-5/16          | 2-3/4          | 36009               | 36029               | 36049               | 36069                | 36089                | 17.10      |
| 7/8           | 1/2            | 1-5/16          | 2-3/4          | 36010               | 36030               | 36050               | 36070                | 36090                | 23.55      |
| 1             | 1/2            | 1-5/16          | 2-3/4          | 36011               | 36031               | 36051               | 36071                | 36091                | 26.25      |
| 1-1/4         | 3/4            | 1-5/8           | 3-3/8          | 36012               | 36032               | 36052               | 36072                | 36092                | 39.95      |
| 1-1/2         | 3/4            | 1-5/8           | 3-1/2          | 36013               | 36033               | 36053               | 36073                | 36093                | 57.75      |
| 1-3/4         | 1              | 2-1/8           | 4-1/4          | 36014               | 36034               | 36054               | 36074                | 36094                | 77.00      |
| 2             | 1              | 2-1/8           | 4-3/8          | 36015               | 36035               | 36055               | 36075                | 36095                | 95.10      |
| 2-1/2         | 1              | 2-1/8           | 4-3/4          | 36016               | 36036               | 36056               | 36076                | 36096                | 252.30     |
| 3             | 1              | 2-1/8           | 5              | 36017               | 36037               | 36057               | 36077                | 36097                | 346.00     |

## CHATTERLESS COUNTERSINK SETS

6 FLUTE - H.S.S.



### R-200: 8 HSS COUNTERSINKS

1/4", 5/16", 3/8", 1/2", 5/8", 3/4", 7/8" and 1" diameter in wooden box.

| INCLUDED ANGLE | EDP NUMBER | LIST PRICE |
|----------------|------------|------------|
| 60°            | 66206      | 119.70     |
| 82°            | 66208      | 119.70     |
| 90°            | 66209      | 119.70     |

### R-210: HSS COUNTERSINKS

3/16" diameter through 1-1/2" diameter in wood box.

| INCLUDED ANGLE | EDP NUMBER | LIST PRICE |
|----------------|------------|------------|
| 60°            | 66216      | 223.95     |
| 82°            | 66218      | 223.95     |
| 90°            | 66219      | 223.95     |

\*Also available in 100° and 120°. Cutters can be sharpened many times.



## CHATTERLESS COUNTERSINKS

6 FLUTE - H.S.S.

### SINGLE FLUTE • HIGH SPEED STEEL

| C/SINK<br>DIAMETER | OVERALL<br>LENGTH | 60° INC.<br>EDP NUMBER | 82° INC.<br>EDP NUMBER | 90° INC.<br>EDP NUMBER | 100° INC.<br>EDP NUMBER | 120° INC.<br>EDP NUMBER | LIST<br>PRICE |
|--------------------|-------------------|------------------------|------------------------|------------------------|-------------------------|-------------------------|---------------|
| 1/8                | 1-1/2             | 94901                  | 95901                  | 96901                  | 97901                   | 98901                   | 9.35          |
| 3/16               | 2                 | 94902                  | 95902                  | 96902                  | 97902                   | 98902                   | 9.60          |
| 1/4                | 2                 | 94903                  | 95903                  | 96903                  | 97903                   | 98903                   | 10.00         |
| 5/16               | 2-1/2             | 94904                  | 95904                  | 96904                  | 97904                   | 98904                   | 10.95         |
| 3/8                | 2-1/2             | 94905                  | 95905                  | 96905                  | 97905                   | 98905                   | 12.95         |
| 1/2                | 3                 | 94906                  | 95906                  | 96906                  | 97906                   | 98906                   | 14.65         |

### SINGLE FLUTE • SOLID CARBIDE

| C/SINK<br>DIAMETER | OVERALL<br>LENGTH | 60° INC.<br>EDP NUMBER | 82° INC.<br>EDP NUMBER | 90° INC.<br>EDP NUMBER | 100° INC.<br>EDP NUMBER | 120° INC.<br>EDP NUMBER | LIST<br>PRICE |
|--------------------|-------------------|------------------------|------------------------|------------------------|-------------------------|-------------------------|---------------|
| 1/8                | 1-1/2             | 93901                  | 93911                  | 93921                  | 93931                   | 93941                   | 12.95         |
| 3/16               | 2                 | 93902                  | 93912                  | 93922                  | 93932                   | 93942                   | 17.15         |
| 1/4                | 2                 | 93903                  | 93913                  | 93923                  | 93933                   | 93943                   | 21.65         |
| 5/16               | 2-1/2             | 93904                  | 93914                  | 93924                  | 93934                   | 93944                   | 32.50         |
| 3/8                | 2-1/2             | 93905                  | 93915                  | 93925                  | 93935                   | 93945                   | 39.90         |
| 1/2                | 3                 | 93906                  | 93916                  | 93926                  | 93936                   | 93946                   | 54.60         |

### 6 FLUTE • HIGH SPEED STEEL

| C/SINK<br>DIAMETER | OVERALL<br>LENGTH | 60° INC.<br>EDP NUMBER | 82° INC.<br>EDP NUMBER | 90° INC.<br>EDP NUMBER | 100° INC.<br>EDP NUMBER | 120° INC.<br>EDP NUMBER | LIST<br>PRICE |
|--------------------|-------------------|------------------------|------------------------|------------------------|-------------------------|-------------------------|---------------|
| 1/8                | 1-1/2             | 36201                  | 36301                  | 36401                  | 36501                   | 36801                   | 9.35          |
| 3/16               | 2                 | 36202                  | 36302                  | 36402                  | 36502                   | 36802                   | 9.60          |
| 1/4                | 2                 | 36203                  | 36303                  | 36403                  | 36503                   | 36803                   | 10.00         |
| 5/16               | 2-1/2             | 36204                  | 36304                  | 36404                  | 36504                   | 36804                   | 10.95         |
| 3/8                | 2-1/2             | 36205                  | 36305                  | 36405                  | 36505                   | 36805                   | 12.95         |
| 1/2                | 3                 | 36206                  | 36306                  | 36406                  | 36506                   | 36806                   | 14.65         |

### 6 FLUTE • SOLID CARBIDE

| C/SINK<br>DIAMETER | OVERALL<br>LENGTH | 60° INC.<br>EDP NUMBER | 82° INC.<br>EDP NUMBER | 90° INC.<br>EDP NUMBER | 100° INC.<br>EDP NUMBER | 120° INC.<br>EDP NUMBER | LIST<br>PRICE |
|--------------------|-------------------|------------------------|------------------------|------------------------|-------------------------|-------------------------|---------------|
| 1/8                | 1-1/2             | 38201                  | 38301                  | 38401                  | 38501                   | 38601                   | 12.95         |
| 3/16               | 2                 | 38202                  | 38302                  | 38402                  | 38502                   | 38602                   | 17.15         |
| 1/4                | 2                 | 38203                  | 38303                  | 38403                  | 38503                   | 38603                   | 21.65         |
| 5/16               | 2-1/2             | 38204                  | 38304                  | 38404                  | 38504                   | 38604                   | 32.50         |
| 3/8                | 2-1/2             | 38205                  | 38305                  | 38405                  | 38505                   | 38605                   | 39.90         |
| 1/2                | 3                 | 38206                  | 38306                  | 38406                  | 38506                   | 38606                   | 54.60         |

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PROUD TO BE MADE IN THE U.S.A.

## MICRO STOP COUNTERSINKS

### HSS • 2-3-4 FLUTES

Threaded shank can be used with all manufacturers micro stop fixtures.



| BODY DIAMETER | PILOT RANGE | THREAD & DIAMETER | 82° INC. EDP NUMBER | 90° INC. EDP NUMBER | 100° INC. EDP NUMBER | 120° INC. EDP NUMBER | LIST PRICE |
|---------------|-------------|-------------------|---------------------|---------------------|----------------------|----------------------|------------|
| 3/8           | 1/16-3/16   | 1/4-28            | 37002               | 37022               | 37042                | 37062                | 14.20      |
| 7/16          | 3/32-3/16   | 1/4-28            | 37003               | 37023               | 37043                | 37063                | 15.00      |
| 1/2           | 3/32-1/4    | 1/4-28            | 37004               | 37024               | 37044                | 37064                | 15.75      |
| 5/8           | 5/32-3/8    | 1/4-28            | 37005               | 37025               | 37045                | 37065                | 18.00      |
| 3/4           | 3/16-3/8    | 1/4-28            | 37006               | 37026               | 37046                | 37066                | 31.85      |
| 1             | 3/16-1/2    | 3/8-24            | 37008               | 37028               | 37048                | 37068                | 55.70      |
| 1-1/4         | 3/16-1/2    | 3/8-24            | 37009               | 37029               | 37049                | 37069                | 76.45      |

### CARBIDE • 2-3-4 FLUTES

Threaded shank, special pilot diameter can be ordered.



| BODY DIAMETER | PILOT RANGE | THREAD & DIAMETER | 82° INC. EDP NUMBER | 90° INC. EDP NUMBER | 100° INC. EDP NUMBER | 120° INC. EDP NUMBER | LIST PRICE |
|---------------|-------------|-------------------|---------------------|---------------------|----------------------|----------------------|------------|
| 3/8           | .0938-.1285 | 1/4-28            | 37101               | 37141               | 37181                | 37241                | 52.25      |
| 3/8           | .1562-.1590 | 1/4-28            | 37102               | 37142               | 37182                | 37242                | 52.25      |
| 3/8           | .1875-.1935 | 1/4-28            | 37103               | 37143               | 37183                | 37243                | 52.25      |
| 7/16          | .0938-.1285 | 1/4-28            | 37104               | 37144               | 37184                | 37244                | 56.75      |
| 7/16          | .1562-.1590 | 1/4-28            | 37105               | 37145               | 37185                | 37245                | 56.75      |
| 7/16          | .1875-.1935 | 1/4-28            | 37106               | 37146               | 37186                | 37246                | 56.75      |
| 1/2           | .0938-.1285 | 1/4-28            | 37107               | 37147               | 37187                | 37247                | 62.50      |
| 1/2           | .1562-.1590 | 1/4-28            | 37108               | 37148               | 37188                | 37248                | 62.50      |
| 1/2           | .1875-.1935 | 1/4-28            | 37109               | 37149               | 37189                | 37249                | 62.50      |
| 1/2           | .2187-.2500 | 1/4-28            | 37110               | 37150               | 37190                | 37250                | 62.50      |
| 5/8           | .1250-.1590 | 1/4-28            | 37111               | 37151               | 37191                | 37251                | 79.90      |
| 5/8           | .1975-.2187 | 1/4-28            | 37112               | 37152               | 37192                | 37252                | 79.90      |
| 5/8           | .2500-.2570 | 1/4-28            | 37113               | 37153               | 37193                | 37253                | 79.90      |
| 5/8           | .3125-.3750 | 1/4-28            | 37114               | 37154               | 37194                | 37254                | 79.90      |
| 3/4           | .1562-.1590 | 3/8-24            | 37115               | 37155               | 37195                | 37255                | 95.60      |
| 3/4           | .1875-.2187 | 3/8-24            | 37116               | 37156               | 37196                | 37256                | 95.60      |
| 3/4           | .2500-.2570 | 3/8-24            | 37117               | 37157               | 37197                | 37257                | 95.60      |
| 3/4           | .3125       | 3/8-24            | 37118               | 37158               | 37198                | 37258                | 95.60      |
| 3/4           | .3750       | 3/8-24            | 37119               | 37159               | 37199                | 37259                | 95.60      |
| 1             | .1875-.1935 | 3/8-24            | 37125               | 37165               | 37205                | 37265                | 136.65     |
| 1             | .2187       | 3/8-24            | 37126               | 37166               | 37206                | 37266                | 136.65     |
| 1             | .2500-.2570 | 3/8-24            | 37127               | 37167               | 37207                | 37267                | 136.65     |
| 1             | .3125       | 3/8-24            | 37128               | 37168               | 37208                | 37268                | 136.65     |
| 1             | .3750       | 3/8-24            | 37129               | 37169               | 37209                | 37269                | 136.65     |
| 1             | .5000       | 3/8-24            | 37130               | 37170               | 37210                | 37270                | 136.65     |

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## OUTSIDE CHAMFERING MILLS

Made of High Speed Steel , hardened to resist wear, one size can be used for many sized parts. Completely chatterless, can be resharpened many times.



| MAJOR WORK DIAMETER | INCLUDED ANGLE | ACT. MOUTH DIMENSIONS | RECESS HOLE | BODY DIAMETER | BODY LENGTH | THREAD SIZE AND DEPTH | EDP NUMBER | LIST PRICE |
|---------------------|----------------|-----------------------|-------------|---------------|-------------|-----------------------|------------|------------|
| 1/4                 | 60°            | 5/16                  | 3/64        | 1/2           | 1           | 5/16 - 24 x 5/16      | 30001      | 46.20      |
| 1/2                 | 60°            | 5/8                   | 1/8         | 7/8           | 1-1/4       | 3/8 - 24 x 3/8        | 30002      | 59.76      |
| 3/4                 | 60°            | 7/8                   | 1/4         | 1-1/8         | 1-3/4       | 1/2 - 20 x 1/2        | 30003      | 68.76      |
| 1                   | 60°            | 1-1/8                 | 1/4         | 1-1/2         | 2           | 3/4 - 16 x 5/8        | 30004      | 95.88      |
| 1-3/4               | 60°            | 1-7/8                 | 1/2         | 2-1/4         | 2-11/16     | 1 - 14 x 3/4          | 30005      | 231.00     |
| 2                   | 60°            | 2-1/8                 | 3/4         | 2-3/4         | 3           | 1 - 14 x 3/4          | 30006      | 402.30     |
| 3                   | 60°            | 3-1/4                 | 1           | 3-3/4         | 3-3/4       | 1-1/4 - 12 x 7/8      | 30007      | 828.36     |
| 1/4                 | 90°            | 5/16                  | 3/64        | 1/2           | 1           | 5/16 - 24 x 5/16      | 30008      | 43.32      |
| 1/2                 | 90°            | 5/8                   | 1/8         | 7/8           | 1-1/4       | 3/8 - 24 x 3/8        | 30009      | 56.40      |
| 3/4                 | 90°            | 7/8                   | 3/16        | 1-1/8         | 1-5/16      | 1/2 - 20 x 1/2        | 30010      | 66.60      |
| 1                   | 90°            | 1-1/8                 | 1/4         | 1-3/8         | 1-3/4       | 3/4 - 16 x 5/8        | 30011      | 92.70      |
| 1-1/2               | 90°            | 1-5/8                 | 3/8         | 2             | 1-7/8       | 3/4 - 16 x 5/8        | 30012      | 154.20     |
| 2                   | 90°            | 2-1/8                 | 5/8         | 2-1/2         | 2-1/2       | 1 - 14 x 3/4          | 30013      | 267.60     |
| 3                   | 90°            | 3-1/4                 | 3/4         | 3-3/4         | 2-7/8       | 1-1/4 - 12 x 7/8      | 30014      | 705.60     |

## SHANKS STRAIGHT THREADED



| SHANK DIAMETER | LENGTH OF SHANK | THREAD SIZE | THREAD LENGTH | SHOULDER DIAMETER | EDP NUMBER | LIST PRICE |
|----------------|-----------------|-------------|---------------|-------------------|------------|------------|
| 1/4            | 1-3/4           | 5/16 - 24   | 5/16          | 7/16              | 88021      | 5.10       |
| 1/4            | 1-3/4           | 3/8 - 24    | 3/8           | 1/2               | 88022      | 8.88       |
| 3/8            | 1-1/4           | 5/16 - 24   | 5/16          | 7/16              | 88023      | 6.65       |
| 3/8            | 1-1/4           | 3/8 - 24    | 3/8           | 1/2               | 88024      | 7.32       |
| 3/8            | 1-1/4           | 1/2 - 20    | 1/2           | 5/8               | 88025      | 11.76      |
| 1/2            | 1-1/4           | 5/16 - 24   | 5/16          | 1/2               | 88026      | 7.32       |
| 1/2            | 1-1/4           | 3/8 - 24    | 3/8           | 1/2               | 88027      | 7.32       |
| 1/2            | 1-1/4           | 1/2 - 20    | 1/2           | 5/8               | 88028      | 11.76      |
| 1/2            | 1-1/4           | 3/4 - 16    | 5/8           | 7/8               | 88029      | 21.06      |
| 5/8            | 1-1/4           | 3/8 - 24    | 3/8           | 5/8               | 88030      | 11.80      |
| 5/8            | 1-1/4           | 1/2 - 20    | 1/2           | 5/8               | 88031      | 11.80      |
| 5/8            | 1-1/4           | 3/4 - 16    | 5/8           | 7/8               | 88032      | 21.06      |
| 3/4            | 1-1/2           | 1/2 - 20    | 1/2           | 3/4               | 88033      | 15.68      |
| 3/4            | 1-1/2           | 3/4 - 16    | 5/8           | 7/8               | 88034      | 21.06      |
| 1              | 1-1/2           | 1/2 - 20    | 1/2           | 1                 | 88035      | 27.24      |
| 1              | 1-1/2           | 3/4 - 16    | 5/8           | 1                 | 88036      | 27.24      |
| 1              | 1-1/2           | 1 - 14      | 3/4           | 1-3/16            | 88037      | 35.04      |
| 1              | 2               | 1-1/4 - 12  | 3/4           | 1-1/2             | 88038      | 50.10      |

## SOLID CARBIDE BURRS 1/8" SHANKS

|                                                                                     | TOOL NUMBER | FLUTE DIA. INCL. ANGLE | LENGTH OF FLUTE | OVERALL LENGTH | EDP NUMBER | LIST PRICE |
|-------------------------------------------------------------------------------------|-------------|------------------------|-----------------|----------------|------------|------------|
|    | SA-41       | 1/16                   | 1/4             | 1-1/2          | 70203      | 4.95       |
|    | SA-42       | 3/32                   | 7/16            | 1-1/2          | 70202      | 4.95       |
|    | SA-43       | 1/8                    | 9/16            | 1-1/2          | 70201      | 4.95       |
| ABOVE W/END CUT                                                                     | SB-43       | 1/8                    | 9/16            | 1-1/2          | 70211      | 4.95       |
|    | SC-41       | 3/32                   | 7/16            | 1-1/2          | 70205      | 4.95       |
|    | SC-42       | 1/8                    | 9/16            | 1-1/2          | 70204      | 4.95       |
|    | SD-41       | 3/32                   | --              | 1-1/2          | 70207      | 4.95       |
|    | SD-42       | 1/8                    | --              | 1-1/2          | 70206      | 4.95       |
|    | SE-41       | 1/8                    | 7/32            | 1-1/2          | 70208      | 4.95       |
|  | SF-41       | 1/8                    | 1/4             | 1-1/2          | 71209      | 4.95       |
|  | SF-42       | 1/8                    | 1/2             | 1-1/2          | 70209      | 4.95       |
|  | SG-41       | 1/8                    | 1/4             | 1-1/2          | 70210      | 4.95       |
|  | SG-43       | 1/8                    | 3/8             | 1-1/2          | 71215      | 4.95       |
|  | SG-44       | 1/8                    | 1/2             | 1-1/2          | 72215      | 4.95       |
|  | SH-41       | 1/8                    | 1/4             | 1-1/2          | 70215      | 4.95       |
|  | SJ-42       | 1/8-60°                | --              | 1-1/2          | 70217      | 4.95       |
|  | SK-42       | 1/8-90°                | --              | 1-1/2          | 70218      | 4.95       |
|  | SL-41       | 1/8-14°                | 3/8             | 1-1/2          | 70212      | 4.95       |
|  | SL-42       | 1/8-8°                 | 1/2             | 1-1/2          | 70213      | 4.95       |
|  | SM-41       | 1/8-12°                | 3/8             | 1-1/2          | 71214      | 4.95       |
|  | SM-42       | 1/8-14°                | 7/16            | 1-1/2          | 72214      | 4.95       |
|  | SM-43       | 1/8-7°                 | 5/8             | 1-1/2          | 70214      | 4.95       |
|  | SN-41       | 3/32-10°               | 1/8             | 1-1/2          | 71216      | 4.95       |
|  | SN-42       | 1/8-10°                | 3/16            | 1-1/2          | 70216      | 4.95       |

Tools illustrated ground single cut. Can also be ground double cut or any cut desired.



## SOLID CARBIDE BURRS

### 1/4" DIAMETER • 1/8" SHANKS



| TOOL NUMBER | FLUTE DIA. INCL. ANGLE | LENGTH OF FLUTE | OVERALL LENGTH | EDP NUMBER | LIST PRICE |
|-------------|------------------------|-----------------|----------------|------------|------------|
| SA-51       | 1/4                    | 1/2             | 2              | 70222      | 8.50       |
| SB-51       | 1/4                    | 3/16            | 1-11/16        | 70223      | 8.50       |
| SC-51       | 1/4                    | 1/2             | 2              | 70224      | 8.50       |
| SD-51       | 1/4                    | --              | 1-3/4          | 70225      | 8.50       |
| SE-51       | 1/4                    | 3/8             | 1-7/8          | 70226      | 8.50       |
| SF-51       | 1/4                    | 1/2             | 2              | 70227      | 8.50       |
| SG-51       | 1/4                    | 1/2             | 2              | 70228      | 8.50       |
| SM-51       | 1/4-22°                | 1/2             | 2              | 70229      | 8.50       |
| SN-51       | 1/4-10°                | 1/4             | 1-3/4          | 70230      | 8.50       |

### 3/16" DIAMETER • 3/16" SHANKS • 2" OAL



| TOOL NUMBER | FLUTE DIA. INCL. ANGLE | LENGTH OF FLUTE | OVERALL LENGTH | EDP NUMBER | LIST PRICE |
|-------------|------------------------|-----------------|----------------|------------|------------|
| SA-81       | 3/16                   | 5/8             | 2              | 70257      | 8.20       |
| SC-81       | 3/16                   | 5/8             | 2              | 70259      | 8.20       |
| SD-81       | 3/16                   | --              | 2              | 70261      | 8.20       |
| SE-81       | 3/16                   | 9/32            | 2              | 70262      | 8.20       |
| SF-81       | 3/16                   | 1/2             | 2              | 70263      | 8.20       |
| SG-81       | 3/16                   | 1/2             | 2              | 70264      | 8.20       |
| SJ-81       | 3/16-60°               | --              | 2              | 70265      | 8.20       |
| SK-81       | 3/16-82°               | --              | 2              | 71265      | 8.20       |
| SL-81       | 3/16-14°               | 1/2             | 2              | 71266      | 8.20       |
| SM-81       | 3/16-12°               | 5/8             | 2              | 72266      | 8.20       |
| SN-81       | 3/16-10°               | 1/4             | 2              | 70268      | 8.20       |

Can be resharpened many times.

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## SOLID CARBIDE BURRS

### CYLINDRICAL SHAPE



| TOOL NUMBER | FLUTE DIAMETER | LENGTH OF FLUTE | SHANK DIAMETER | EDP NUMBER | LIST PRICE |
|-------------|----------------|-----------------|----------------|------------|------------|
| SA-12       | 1/8            | 5/8             | 1/4            | 70301      | 9.00       |
| SA-14       | 3/16           | 5/8             | 1/4            | 70238      | 9.00       |
| SA-1        | 1/4            | 5/8             | 1/4            | 70302      | 7.75       |
| SA-2        | 5/16           | 3/4             | 1/4            | 70304      | 9.75       |
| SA-3        | 3/8            | 3/4             | 1/4            | 70305      | 10.50      |
| SA-4        | 7/16           | 1               | 1/4            | 70314      | 15.50      |
| SA-5        | 1/2            | 1               | 1/4            | 70306      | 17.40      |
| SA-6        | 5/8            | 1               | 1/4            | 70307      | 21.25      |
| SA-7        | 3/4            | 1               | 1/4 or 3/8     | 70309      | 33.00      |
| SA-9        | 1              | 1               | 1/4 or 3/8     | 70310      | 43.90      |
| SA-16       | 3/4            | 3/4             | 1/4 or 3/8     | 70318      | 32.60      |

\*This tool available in end cut at 10% extra. SA-12, SA-14, SA-1 are solid carbide.

### CYLINDRICAL RADIUS SHAPE



| TOOL NUMBER | FLUTE DIAMETER | LENGTH OF FLUTE | SHANK DIAMETER | EDP NUMBER | LIST PRICE |
|-------------|----------------|-----------------|----------------|------------|------------|
| SC-12       | 1/8            | 5/8             | 1/4            | 70349      | 9.30       |
| SC-14       | 3/16           | 5/8             | 1/4            | 70240      | 9.30       |
| SC-1        | 1/4            | 5/8             | 1/4            | 70239      | 9.00       |
| SC-2        | 5/16           | 3/4             | 1/4            | 70352      | 11.45      |
| SC-3        | 3/8            | 3/4             | 1/4            | 70353      | 11.70      |
| SC-4        | 7/16           | 1               | 1/4            | 70360      | 16.95      |
| SC-5        | 1/2            | 1               | 1/4            | 70354      | 19.50      |
| SC-6        | 5/8            | 1               | 1/4            | 70355      | 25.60      |
| SC-7        | 3/4            | 1               | 1/4 or 3/8     | 70356      | 35.95      |

SC-12, SC-14, SC-1 are solid carbide.

Available in all cuts as shown on page (iv). When ordering, please specify EDP #, and type of cut. If cut not specified tools will be furnished in medium single cut. These tools are available with shank length up to 6" long. Call for pricing.

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## SOLID CARBIDE BURRS

### BALL SHAPE



| TOOL NUMBER | FLUTE DIAMETER | LENGTH OF FLUTE | SHANK DIAMETER | EDP NUMBER | LIST PRICE |
|-------------|----------------|-----------------|----------------|------------|------------|
| SD-12       | 1/8            | 1/8             | 1/4            | 70366      | 9.50       |
| SD-14       | 3/16           | 3/16            | 1/4            | 70367      | 9.50       |
| SD-1        | 1/4            | 1/4             | 1/4            | 70241      | 8.80       |
| SD-2        | 5/16           | 5/16            | 1/4            | 70368      | 8.80       |
| SD-3        | 3/8            | 3/8             | 1/4            | 70369      | 9.65       |
| SD-4        | 7/16           | 7/16            | 1/4            | 70374      | 12.75      |
| SD-5        | 1/2            | 1/2             | 1/4            | 70370      | 13.60      |
| SD-6        | 5/8            | 5/8             | 1/4            | 70371      | 18.10      |
| SD-7        | 3/4            | 3/4             | 1/4 or 3/8     | 70372      | 25.60      |
| SD-9        | 1              | 1               | 1/4 or 3/8     | 70373      | 39.80      |

SD-12, SD-14, SD-1 are Solid Carbide.

### EGG SHAPE



| TOOL NUMBER | FLUTE DIAMETER | LENGTH OF FLUTE | SHANK DIAMETER | EDP NUMBER | LIST PRICE |
|-------------|----------------|-----------------|----------------|------------|------------|
| SE-11       | 3/16           | 5/16            | 1/4            | 70381      | 9.50       |
| SE-1        | 1/4            | 3/8             | 1/4            | 70242      | 9.50       |
| SE-3        | 3/8            | 5/8             | 1/4            | 70382      | 11.00      |
| SE-5        | 1/2            | 7/8             | 1/4            | 70383      | 17.95      |
| SE-6        | 5/8            | 1               | 1/4            | 70384      | 25.35      |
| SE-7        | 3/4            | 1               | 1/4 or 3/8     | 70385      | 33.90      |

SE-11, SE-1 are Solid Carbide.

### FLAME SHAPE



| TOOL NUMBER | FLUTE DIAMETER | LENGTH OF FLUTE | SHANK DIAMETER | EDP NUMBER | LIST PRICE |
|-------------|----------------|-----------------|----------------|------------|------------|
| SH-1        | 1/4            | 5/8             | 1/4            | 70247      | 11.95      |
| SH-2        | 5/16           | 3/4             | 1/4            | 70390      | 13.85      |
| SH-5        | 1/2            | 1-1/4           | 1/4            | 70391      | 25.95      |
| SH-6        | 5/8            | 1-7/16          | 1/4            | 70392      | 36.20      |
| SH-7        | 3/4            | 1-5/8           | 1/4 or 3/8     | 70393      | 49.90      |

SH-1 is Solid Carbide.

Available in all cuts as shown on page (iv). When ordering, please specify EDP #, and type of cut. If cut not specified tools will be furnished in medium single cut. These tools are available with shank length up to 6" long. Call for pricing.

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## SOLID CARBIDE BURRS

### TREE - RADIUS SHAPE



| TOOL NUMBER | FLUTE DIAMETER | LENGTH OF FLUTE | SHANK DIAMETER | EDP NUMBER | LIST PRICE |
|-------------|----------------|-----------------|----------------|------------|------------|
| SF-1        | 1/4            | 5/8             | 1/4            | 70243      | 9.50       |
| SF-3        | 3/8            | 3/4             | 1/4            | 70411      | 12.00      |
| SF-4        | 7/16           | 1               | 1/4            | 70416      | 16.95      |
| SF-5        | 1/2            | 1               | 1/4            | 70412      | 17.90      |
| SF-6        | 5/8            | 1               | 1/4            | 70413      | 25.00      |
| SF-7        | 3/4            | 1               | 1/4 or 3/8     | 70417      | 32.95      |
| SF-14       | 3/4            | 1-1/4           | 1/4 or 3/8     | 71419      | 38.15      |
| SF-15       | 3/4            | 1-1/2           | 1/4 or 3/8     | 70418      | 47.00      |

SF-1 is Solid Carbide.

### TREE - POINTED SHAPE



| TOOL NUMBER | FLUTE DIAMETER | LENGTH OF FLUTE | SHANK DIAMETER | EDP NUMBER | LIST PRICE |
|-------------|----------------|-----------------|----------------|------------|------------|
| SG-1        | 1/4            | 5/8             | 1/4            | 70244      | 9.50       |
| SG-2        | 5/16           | 3/4             | 1/4            | 70401      | 11.00      |
| SG-3        | 3/8            | 3/4             | 1/4            | 70402      | 11.95      |
| SG-5        | 1/2            | 1               | 1/4            | 70404      | 17.95      |
| SG-6        | 5/8            | 1               | 1/4            | 70405      | 24.90      |
| SG-7        | 3/4            | 1               | 1/4 or 3/8     | 70406      | 32.40      |
| SG-15       | 3/4            | 1-1/2           | 1/4 or 3/8     | 70407      | 36.90      |

SG-1 is Solid Carbide.

Available in all cuts as shown on page (iv). When ordering, please specify EDP #, and type of cut. If cut not specified tools will be furnished in medium single cut. These tools are available with shank length up to 6" long. Call for pricing.

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## SOLID CARBIDE BURRS

### CONE - RADIUS END (14° INCLUDED ANGLE)



| TOOL NUMBER | FLUTE DIAMETER | LENGTH OF FLUTE | SHANK DIAMETER | EDP NUMBER | LIST PRICE |
|-------------|----------------|-----------------|----------------|------------|------------|
| SL-1        | 1/4            | 5/8             | 1/4            | 70438      | 9.55       |
| SL-2        | 5/16           | 7/8             | 1/4            | 70444      | 11.95      |
| SL-3        | 3/8            | 1-1/16          | 1/4            | 70440      | 14.15      |
| SL-4        | 1/2            | 1-1/8           | 1/4            | 70441      | 18.00      |
| SL-6        | 5/8            | 1-5/16          | 1/4            | 70442      | 33.85      |
| SL-7        | 3/4            | 1-1/2           | 1/4 or 3/8     | 70443      | 48.30      |

SL-1 is Solid Carbide.

### CONE - FLAT END



| TOOL NUMBER | FLUTE DIAMETER | LENGTH OF FLUTE | SHANK DIAMETER | EDP NUMBER | LIST PRICE |
|-------------|----------------|-----------------|----------------|------------|------------|
| SM-1        | 1/4-22°        | 1/2             | 1/4            | 70455      | 9.70       |
| SM-2        | 1/4-14°        | 3/4             | 1/4            | 70450      | 10.10      |
| SM-3        | 1/4-10°        | 1               | 1/4            | 70451      | 10.95      |
| SM-4        | 3/8-28°        | 5/8             | 1/4            | 70452      | 14.80      |
| SM-5        | 1/2-28°        | 7/8             | 1/4            | 70453      | 19.00      |
| SM-6        | 5/8-31°        | 1               | 1/4            | 70454      | 28.15      |

SM-1, SM-2, SM-3 are Solid Carbide.

### INVERTED CONE SHAPE



| TOOL NUMBER | FLUTE DIAMETER | LENGTH OF FLUTE | SHANK DIAMETER | EDP NUMBER | LIST PRICE |
|-------------|----------------|-----------------|----------------|------------|------------|
| SN-1        | 1/4-10°        | 5/16            | 1/4            | 70248      | 8.50       |
| SN-2        | 3/8-13°        | 3/8             | 1/4            | 70422      | 16.45      |
| SN-3        | 1/2-16°        | 1/2             | 1/4            | 70423      | 18.95      |
| SN-6        | 5/8-18°        | 3/4             | 1/4            | 70424      | 24.00      |
| SN-7        | 3/4-30°        | 5/8             | 1/4            | 70425      | 29.65      |

SN-1 is Solid Carbide.

Available in all cuts as shown on page (iv). When ordering, please specify EDP #, and type of cut. If cut not specified tools will be furnished in medium single cut. Different angles available on request. These tools are available with shank length up to 6" long. Call for pricing.

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## SOLID CARBIDE BURRS

### TAPER - 60° INCLUDED ANGLE



| TOOL NUMBER | FLUTE DIAMETER | LENGTH OF FLUTE | SHANK DIAMETER | EDP NUMBER | LIST PRICE |
|-------------|----------------|-----------------|----------------|------------|------------|
| *SJ-1       | 1/4            | --              | 1/4            | 70475      | 9.00       |
| SJ-2        | 5/16           | --              | 1/4            | 70469      | 9.30       |
| SJ-3        | 3/8            | --              | 1/4            | 70470      | 10.00      |
| SJ-5        | 1/2            | --              | 1/4            | 70471      | 12.90      |
| SJ-6        | 5/8            | --              | 1/4            | 70472      | 17.95      |
| SJ-7        | 3/4            | --              | 1/4 or 3/8     | 70473      | 23.70      |
| SJ-9        | 1              | --              | 1/4 or 3/8     | 70474      | 38.00      |

\*SJ-1 Double End - Solid Carbide.

### TAPER - 90° INCLUDED ANGLE



| TOOL NUMBER | FLUTE DIAMETER | LENGTH OF FLUTE | SHANK DIAMETER | EDP NUMBER | LIST PRICE |
|-------------|----------------|-----------------|----------------|------------|------------|
| *SK-1       | 1/4            | --              | 1/4            | 70497      | 9.00       |
| SK-2        | 5/16           | --              | 1/4            | 70491      | 9.30       |
| SK-3        | 3/8            | --              | 1/4            | 70492      | 10.00      |
| SK-5        | 1/2            | --              | 1/4            | 70493      | 12.90      |
| SK-6        | 5/8            | --              | 1/4            | 70494      | 17.95      |
| SK-7        | 3/4            | --              | 1/4 or 3/8     | 70495      | 23.70      |
| SK-9        | 1              | --              | 1/4 or 3/8     | 70496      | 38.00      |

\*SK-1 Double End - Solid Carbide.

### SOLID GRINDING CARBIDE BURRS 45° LEAD ANGLE



| TOOL NUMBER | CUTTING DIAMETER | SHANK DIAMETER | CUTTING LENGTH | NECK LENGTH | OVERALL LENGTH | EDP NUMBER | LIST PRICE |
|-------------|------------------|----------------|----------------|-------------|----------------|------------|------------|
| 1450        | 1/16             | 1/8            | 1/8            | 3/8         | 1-1/2          | 91450      | 12.95      |
| 1452        | 3/32             | 1/8            | 1/8            | 3/8         | 1-1/2          | 91452      | 12.95      |
| 1454        | 1/8              | 1/8            | 1/8            | 1/2         | 1-1/2          | 91454      | 12.95      |
| 1456        | 5/32             | 3/16           | 3/16           | 1/2         | 2              | 91456      | 19.35      |
| 1458        | 3/16             | 3/16           | 3/16           | 5/8         | 2              | 91458      | 19.00      |
| 1460        | 7/32             | 1/4            | 1/4            | 3/4         | 2              | 91460      | 21.25      |
| 1462        | 1/4              | 1/4            | 1/4            | 3/4         | 2              | 91462      | 20.00      |
| 1463        | 9/32             | 1/4            | 5/16           | --          | 2-1/2          | 91463      | 31.95      |
| 1464        | 5/16             | 1/4            | 1/2            | --          | 2-1/2          | 91464      | 31.95      |
| 1465        | 11/32            | 1/4            | 1/2            | --          | 2-1/2          | 91465      | 34.25      |
| 1466        | 3/8              | 1/4            | 1/2            | --          | 2-1/2          | 91466      | 34.25      |
| 1469        | 7/16             | 1/4            | 1/2            | --          | 2-1/2          | 91469      | 42.65      |
| 1470        | 1/2              | 1/4            | 1/2            | --          | 2-1/2          | 91470      | 48.10      |

Available with end cut and spiral cut.

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## SOLID CARBIDE STEADY CUT BURRS

HTC Steady Cut is designed for steady operation, free chip flow, no loading or clogging on non-ferrous metals, aluminum, soft steel, plastics and other soft, sticky materials. All burrs in this catalog can be ordered steady cut if so specified. Following are in stock. Other sizes available on request.



### CYLINDER SHAPE

| DIAMETER | LENGTH OF FLUTE | SHANK DIAMETER | EDP NUMBER | LIST PRICE |
|----------|-----------------|----------------|------------|------------|
| 1/4      | 3/4             | 1/4            | 94102      | 10.25      |
| 3/8      | 3/4             | 1/4            | 94105      | 14.70      |
| 1/2      | 1               | 1/4            | 94106      | 23.65      |
| 5/8      | 1               | 1/4            | 94107      | 29.75      |
| 3/4      | 1               | 1/4 or 3/8     | 94109      | 47.50      |
| 1        | 1               | 1/4 or 3/8     | 94110      | 61.75      |



### CYLINDER RADIUS END

| DIAMETER | LENGTH OF FLUTE | SHANK DIAMETER | EDP NUMBER | LIST PRICE |
|----------|-----------------|----------------|------------|------------|
| 1/4      | 3/4             | 1/4            | 94202      | 12.00      |
| 3/8      | 3/4             | 1/4            | 94205      | 16.30      |
| 1/2      | 1               | 1/4            | 94206      | 27.30      |
| 5/8      | 1               | 1/4            | 94207      | 34.90      |
| 3/4      | 1               | 1/4 or 3/8     | 94209      | 48.85      |



### BALL SHAPE

| DIAMETER | LENGTH OF FLUTE | SHANK DIAMETER | EDP NUMBER | LIST PRICE |
|----------|-----------------|----------------|------------|------------|
| 1/4      | 1/4             | 1/4            | 94603      | 12.50      |
| 3/8      | 3/8             | 1/4            | 94604      | 13.55      |
| 1/2      | 1/2             | 1/4            | 94605      | 19.30      |
| 5/8      | 5/8             | 1/4            | 94606      | 25.35      |
| 3/4      | 3/4             | 1/4 or 3/8     | 94607      | 35.75      |



### OVAL SHAPE

| DIAMETER | LENGTH OF FLUTE | SHANK DIAMETER | EDP NUMBER | LIST PRICE |
|----------|-----------------|----------------|------------|------------|
| 3/8      | 5/8             | 1/4            | 94502      | 15.40      |
| 1/2      | 7/8             | 1/4            | 94503      | 25.10      |
| 5/8      | 1               | 1/4            | 94504      | 36.50      |
| 3/4      | 1               | 1/4 or 3/8     | 94505      | 48.55      |



### TREE RADIUS

| DIAMETER | LENGTH OF FLUTE | SHANK DIAMETER | EDP NUMBER | LIST PRICE |
|----------|-----------------|----------------|------------|------------|
| 1/4      | 3/4             | 1/4            | 94301      | 13.80      |
| 3/8      | 3/4             | 1/4            | 94302      | 16.90      |
| 1/2      | 1               | 1/4            | 94303      | 25.00      |
| 5/8      | 1               | 1/4            | 94304      | 34.95      |
| 3/4      | 1-1/4           | 1/4 or 3/8     | 94305      | 51.15      |



### 14° TAPER RADIUS END

| DIAMETER | LENGTH OF FLUTE | SHANK DIAMETER | EDP NUMBER | LIST PRICE |
|----------|-----------------|----------------|------------|------------|
| 3/8      | 1-1/16          | 1/4            | 94803      | 19.80      |
| 1/2      | 1-1/8           | 1/4            | 94804      | 25.95      |
| 5/8      | 1-5/16          | 1/4            | 94805      | 46.90      |
| 3/4      | 1-1/2           | 1/4 or 3/8     | 94806      | 70.10      |

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## H.S.S. ROTARY CUTTERS



### HSS 1/4" SHANK • CYLINDRICAL SHAPE • A

| TOOL NUMBER | DIAMETER | LENGTH OF CUT | EDP NUMBER | LIST PRICE |
|-------------|----------|---------------|------------|------------|
| 125-A       | 1/8      | 1/2           | 40001      | 5.25       |
| 125-AB      | 1/8      | 1             | 40003      | 6.95       |
| 187-AA      | 3/16     | 3/4           | 40007      | 6.95       |
| 250-A       | 1/4      | 1             | 40011      | 6.95       |
| 250-AC      | 1/4      | 1-1/2         | 40012      | 8.80       |
| 312-A       | 5/16     | 1             | 40015      | 8.90       |
| 375-A       | 3/8      | 1             | 40018      | 8.95       |
| 375-AB      | 3/8      | 1-1/2         | 40019      | 10.65      |

| TOOL NUMBER | DIAMETER | LENGTH OF CUT | EDP NUMBER | LIST PRICE |
|-------------|----------|---------------|------------|------------|
| 500-A       | 1/2      | 1             | 40023      | 11.10      |
| 500-AD      | 1/2      | 1-1/2         | 40025      | 14.65      |
| 625-A       | 5/8      | 1             | 40027      | 13.10      |
| 750-A       | 3/4      | 3/4           | 40029      | 13.25      |
| 750-AC      | 3/4      | 1             | 40030      | 13.65      |
| 875-A       | 7/8      | 1             | 40032      | 21.95      |
| 1000-A      | 1        | 1             | 40033      | 23.75      |

Stocked in medium cut without chip breakers, but can be ground to your specifications. Can be furnished with end cut. Diamond cut 10% extra.



### HSS 1/4" SHANK • BALL SHAPE • B

| TOOL NUMBER | DIAMETER | LENGTH OF CUT | EDP NUMBER | LIST PRICE |
|-------------|----------|---------------|------------|------------|
| 125-B       | 1/8      | 1/8           | 40101      | 5.25       |
| 187-B       | 3/16     | 3/16          | 40102      | 5.50       |
| 250-B       | 1/4      | 1/4           | 40103      | 6.25       |
| 312-B       | 5/16     | 5/16          | 40104      | 6.75       |
| 375-B       | 3/8      | 3/8           | 40105      | 7.80       |

| TOOL NUMBER | DIAMETER | LENGTH OF CUT | EDP NUMBER | LIST PRICE |
|-------------|----------|---------------|------------|------------|
| 500-B       | 1/2      | 1/2           | 40107      | 10.50      |
| 625-B       | 5/8      | 5/8           | 40108      | 11.20      |
| 750-B       | 3/4      | 3/4           | 40109      | 14.25      |
| 1000-B      | 1        | 1             | 40111      | 22.90      |

Stocked in medium cut without chip breakers, but can be ground to your specifications. Diamond cut 10% extra.



### HSS 1/4" SHANK • SHAPE • N

| TOOL NUMBER | DIAMETER | LENGTH OF CUT | EDP NUMBER | LIST PRICE |
|-------------|----------|---------------|------------|------------|
| 250-N       | 1/4-10°  | 1/2           | 40170      | 7.95       |
| 375-N       | 3/8-10°  | 1/2           | 40172      | 8.95       |

| TOOL NUMBER | DIAMETER | LENGTH OF CUT | EDP NUMBER | LIST PRICE |
|-------------|----------|---------------|------------|------------|
| 500-N       | 1/2-14°  | 1/2           | 40173      | 11.60      |
| 750-N       | 3/4-36°  | 1/2           | 40175      | 12.90      |

Stocked in medium cut without chip breakers, but can be ground to your specifications. Diamond cut 10% extra. Also available with end cut.



## H.S.S. ROTARY CUTTERS



### HSS 1/4" SHANK • CYLINDRICAL RADIUS END • C

| TOOL NUMBER | DIAMETER | LENGTH OF CUT | EDP NUMBER | LIST PRICE |
|-------------|----------|---------------|------------|------------|
| 125-C       | 1/8      | 1/2           | 40120      | 5.45       |
| 187-C       | 3/16     | 1/2           | 40121      | 5.95       |
| 250-C       | 1/4      | 1             | 40124      | 6.55       |
| 250-CC      | 1/4      | 1-1/2         | 40125      | 7.20       |
| 312-C       | 5/16     | 1             | 40127      | 7.90       |
| 375-C       | 3/8      | 1             | 40129      | 8.90       |

| TOOL NUMBER | DIAMETER | LENGTH OF CUT | EDP NUMBER | LIST PRICE |
|-------------|----------|---------------|------------|------------|
| 375-CA      | 3/8      | 1-1/2         | 40130      | 9.65       |
| 500-C       | 1/2      | 1             | 40133      | 9.90       |
| 500-CA      | 1/2      | 1-1/2         | 40134      | 12.20      |
| 625-C       | 5/8      | 1             | 40135      | 13.20      |
| 750-C       | 3/4      | 1-1/4         | 40138      | 14.30      |
| 1000-C      | 1        | 1-3/8         | 40140      | 25.75      |

Stocked in medium cut without chip breakers, but can be ground to your specifications. Diamond cut 10% extra.



### HSS 1/4" SHANK • OLIVE SHAPE • Q

| TOOL NUMBER | DIAMETER | LENGTH OF CUT | EDP NUMBER | LIST PRICE |
|-------------|----------|---------------|------------|------------|
| 187-Q       | 3/16     | 5/16          | 40151      | 5.85       |
| 250-Q       | 1/4      | 7/16          | 40152      | 6.25       |
| 375-Q       | 3/8      | 5/8           | 40154      | 8.05       |
| 437-Q       | 7/16     | 3/4           | 40155      | 10.10      |

| TOOL NUMBER | DIAMETER | LENGTH OF CUT | EDP NUMBER | LIST PRICE |
|-------------|----------|---------------|------------|------------|
| 500-Q       | 1/2      | 7/8           | 40156      | 10.90      |
| 625-Q       | 5/8      | 1             | 40157      | 12.35      |
| 750-Q       | 3/4      | 1             | 40158      | 16.80      |
| 1000-Q      | 1        | 1-3/8         | 40159      | 26.95      |

Stocked in medium cut without chip breakers, but can be ground to your specifications. Diamond cut 10% extra.



### HSS 1/4" SHANK • TREE ROUNDED SHAPE • R

| TOOL NUMBER | DIAMETER | LENGTH OF CUT | EDP NUMBER | LIST PRICE |
|-------------|----------|---------------|------------|------------|
| 250-R       | 1/4      | 3/4           | 40203      | 6.90       |
| 250-RB      | 1/4      | 1             | 40204      | 7.40       |
| 375-R       | 3/8      | 3/4           | 40206      | 8.60       |
| 500-R       | 1/2      | 1             | 40209      | 11.50      |
| 500-RB      | 1/2      | 1-1/8         | 40210      | 11.95      |

| TOOL NUMBER | DIAMETER | LENGTH OF CUT | EDP NUMBER | LIST PRICE |
|-------------|----------|---------------|------------|------------|
| 625-R       | 5/8      | 1-1/8         | 40212      | 13.30      |
| 750-R       | 3/4      | 1-1/4         | 40214      | 16.20      |
| 1000-R      | 1        | 1-1/4         | 40217      | 24.60      |
| 1125-R      | 1-1/8    | 1-3/4         | 40219      | 38.80      |
| 1250-R      | 1-1/4    | 2             | 40220      | 45.95      |

Stocked in medium cut without chip breakers, but can be ground to your specifications. Diamond cut 10% extra.

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## H.S.S. ROTARY CUTTERS



### HSS 1/4" SHANK • TREE POINTED SHAPE • T

| TOOL NUMBER | DIAMETER | LENGTH OF CUT | EDP NUMBER | LIST PRICE |
|-------------|----------|---------------|------------|------------|
| 250-T       | 1/4      | 3/4           | 40231      | 6.90       |
| 375-T       | 3/8      | 3/4           | 40233      | 8.60       |
| 500-TA      | 1/2      | 3/4           | 40234      | 9.30       |
| 500-TC      | 1/2      | 1-1/8         | 40236      | 12.45      |

| TOOL NUMBER | DIAMETER | LENGTH OF CUT | EDP NUMBER | LIST PRICE |
|-------------|----------|---------------|------------|------------|
| 625-T       | 5/8      | 1             | 40237      | 12.10      |
| 750-T       | 3/4      | 1             | 40238      | 14.80      |
| 1250-T      | 1-1/4    | 2             | 40240      | 46.20      |

Stocked in medium cut without chip breakers, but can be ground to your specifications. Diamond cut 10% extra.



### HSS 1/4" SHANK • FLAME SHAPE • FL

| TOOL NUMBER | DIAMETER | LENGTH OF CUT | EDP NUMBER | LIST PRICE |
|-------------|----------|---------------|------------|------------|
| 312-FL      | 5/16     | 3/4           | 40251      | 9.40       |
| 500-FL      | 1/2      | 1-1/4         | 40252      | 15.75      |

| TOOL NUMBER | DIAMETER | LENGTH OF CUT | EDP NUMBER | LIST PRICE |
|-------------|----------|---------------|------------|------------|
| 625-FL      | 5/8      | 1-7/16        | 40253      | 19.90      |
| 750-FL      | 3/4      | 1-5/8         | 40254      | 26.95      |

Stocked in medium cut without chip breakers, but can be ground to your specifications. Diamond cut 10% extra.



### HSS 1/4" SHANK • FLAT SHAPE • H

| TOOL NUMBER | DIAMETER | LENGTH OF CUT | EDP NUMBER | LIST PRICE |
|-------------|----------|---------------|------------|------------|
| 250-HA      | 1/4-25°  | 1/2           | 40261      | 6.60       |
| 250-HB      | 1/4-17°  | 3/4           | 40262      | 7.60       |
| 250-H       | 1/4-13°  | 1             | 40263      | 8.60       |
| 250-HC      | 1/4-10°  | 1-1/4         | 40264      | 9.90       |
| 312-H       | 5/16-16° | 1             | 40265      | 10.25      |

| TOOL NUMBER | DIAMETER  | LENGTH OF CUT | EDP NUMBER | LIST PRICE |
|-------------|-----------|---------------|------------|------------|
| 375-H       | 3/8-32°   | 5/8           | 40266      | 10.30      |
| 500-H       | 1/2-30°   | 7/8           | 40267      | 11.45      |
| 625-H       | 5/8-30.5° | 1             | 40268      | 13.50      |
| 750-H       | 3/4-33°   | 1-1/8         | 40269      | 16.00      |
| 1000-H      | 1-35°     | 1-3/8         | 40271      | 24.90      |

Stocked in medium cut without chip breakers, but can be ground to your specifications. Diamond cut 10% extra.



### HSS 1/4" SHANK • RADIUS CONE

| TOOL NUMBER | DIAMETER | LENGTH OF CUT | EDP NUMBER | LIST PRICE |
|-------------|----------|---------------|------------|------------|
| 250-HD      | 1/4-14°  | 5/8           | 40281      | 7.30       |
| 312-J       | 5/16-20° | 3/4           | 40284      | 8.65       |
| 375-L       | 3/8-14°  | 1             | 40285      | 12.75      |

| TOOL NUMBER | DIAMETER | LENGTH OF CUT | EDP NUMBER | LIST PRICE |
|-------------|----------|---------------|------------|------------|
| 375-LA      | 3/8-10°  | 1-3/4         | 40285      | 15.20      |
| 500-HD      | 1/2-28°  | 7/8           | 40287      | 15.60      |
| 625-F       | 5/8-36°  | 7/8           | 40289      | 16.40      |

Stocked in medium cut without chip breakers, but can be ground to your specifications. Diamond cut 10% extra.



## H.S.S. 1/8" ROTARY CUTTERS



### HSS 1/4" SHANK • BI SHAPE

| TOOL NUMBER | DIAMETER | LENGTH OF CUT | EDP NUMBER | LIST PRICE |
|-------------|----------|---------------|------------|------------|
| 250-BI      | 1/4      | 1             | 40371      | 9.90       |
| 312-BI      | 5/16     | 1-1/8         | 40372      | 13.20      |
| 375-BI      | 3/8      | 1-1/8         | 40373      | 14.85      |



### HSS 1/4" SHANK • 4" OAL

| TOOL NUMBER | DIAMETER | LENGTH OF CUT | EDP NUMBER | LIST PRICE |
|-------------|----------|---------------|------------|------------|
| 218-CA      | 7/32     | 2-1/2         | 40361      | 15.20      |
| 250-CB      | 1/4      | 2-1/2         | 40362      | 16.35      |
| 250-CT      | 1/4      | 2-3/4         | 40363      | 18.75      |

### HSS 1/4" SHANK • INTERNAL DEBURRING CUTTERS



| TOOL NUMBER | DIAMETER | 60° INCL. EDP NUMBER | 82° INCL. EDP NUMBER | 90° INCL. EDP NUMBER | LIST PRICE |
|-------------|----------|----------------------|----------------------|----------------------|------------|
| 250-ID      | 1/4      | 40301                | 40321                | 40341                | 6.30       |
| 375-ID      | 3/8      | 40303                | 40323                | 40343                | 7.45       |
| 500-ID      | 1/2      | 40304                | 40324                | 40344                | 10.70      |
| 625-ID      | 5/8      | 40305                | 40325                | 40345                | 12.50      |
| 750-ID      | 3/4      | 40306                | 40326                | 40346                | 14.95      |
| 1000-ID     | 1        | 40308                | 40328                | 40348                | 23.00      |
| 1250-ID     | 1-1/4    | 40310                | 40330                | 40350                | 36.60      |

Stocked in medium cut without chip breakers, but can be ground to your specifications. Available in 60°, 80°, and 90°, please specify.

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## H.S.S. 1/8" SHANK CUTTERS

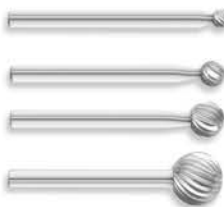
1 1/2" OAL



| TOOL NUMBER | DIAMETER<br>LENGTH OF CUT | EDP<br>NUMBER | LIST<br>PRICE |
|-------------|---------------------------|---------------|---------------|
| H-13        | 1/8 x 5/8                 | 41013         | 3.75          |
| H-21        | 3/16 x 5/8                | 41021         | 4.95          |
| H-20        | 1/4 x 1/2                 | 41020         | 6.00          |
| H-30        | 1/4x1/4-12°PS             | 41030         | 6.00          |



| TOOL NUMBER | DIAMETER<br>LENGTH OF CUT | EDP<br>NUMBER | LIST<br>PRICE |
|-------------|---------------------------|---------------|---------------|
| H-14        | 1/8 x 5/8                 | 41014         | 3.75          |
| H-23        | 3/16 x 5/8                | 41023         | 4.95          |
| H-32        | 1/4 x 1/2                 | 41032         | 6.00          |
| H-25        | 3/16 x 5/16               | 41025         | 4.95          |



| TOOL NUMBER | DIAMETER<br>LENGTH OF CUT | EDP<br>NUMBER | LIST<br>PRICE |
|-------------|---------------------------|---------------|---------------|
| H-22        | 1/8 x 1/8                 | 41022         | 3.75          |
| H-31        | 3/16 x 3/16               | 41031         | 4.95          |
| H-8         | 1/4 x 1/4                 | 41008         | 6.00          |
| H-19        | 3/8 x 3/8                 | 41019         | 6.30          |

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## H.S.S. 1/8" SHANK CUTTERS

### 1 1/2" OAL



| TOOL NUMBER | DIAMETER<br>LENGTH OF CUT | EDP<br>NUMBER | LIST<br>PRICE |
|-------------|---------------------------|---------------|---------------|
| H-28        | 3/16 x 3/8                | 41028         | 4.95          |
| H-1         | 1/4 x 1/2                 | 41001         | 6.00          |
| H-4         | 1/4 x 1/2                 | 41004         | 6.00          |



| TOOL NUMBER | DIAMETER<br>LENGTH OF CUT | EDP<br>NUMBER | LIST<br>PRICE |
|-------------|---------------------------|---------------|---------------|
| H-26        | 1/8 x 5/16                | 41026         | 3.75          |
| H-27        | 3/16 x 3/8                | 41027         | 4.95          |
| H-33        | 1/4 x 1/2                 | 41033         | 6.00          |
| H-3         | 1/4 x 1/2                 | 41003         | 6.00          |



| TOOL NUMBER | DIAMETER<br>LENGTH OF CUT | EDP<br>NUMBER | LIST<br>PRICE |
|-------------|---------------------------|---------------|---------------|
| H-11        | 1/8 x 1/4                 | 41011         | 3.75          |
| H-10        | 1/8 x 9/16                | 41010         | 4.45          |
| H-7         | 1/4 x 1/4                 | 41007         | 6.00          |
| H-2         | 1/4 x 1/2                 | 41002         | 6.00          |



| TOOL NUMBER | DIAMETER<br>LENGTH OF CUT | EDP<br>NUMBER | LIST<br>PRICE |
|-------------|---------------------------|---------------|---------------|
| H-15        | 5/8 x 1/8                 | 41015         | 9.90          |
| H-16        | 5/8 x 1/8                 | 41016         | 9.90          |
| H-18        | 5/8 x 1/8                 | 41018         | 9.90          |
| H-29        | 3/8 x 1/32                | 41029         | 6.95          |

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**HIGH SPEED STEEL 1/8" SHANK  
# 27 SET - \$159.85**

**TOOL NUMBERS**

H-13, H-21, H-20, H-30, H-14, H-23, H-32, H-25,  
H-22, H-31, H-8, H-19, H-28, H-1, H-4, H-26,  
H-27, H-33, H-3, H-11, H-10, H-7, H-2, H-15,  
H-16, H-18, H-29



**CARBIDE 1/8" SHANK  
R-115 SET - \$86.25**

**TOOL NUMBERS**

70211, 70203, 70204, 70205, 70206, 70207,  
70208, 70209, 71215, 72215, 70215, 70217,  
70213, 72214, 70216



**CARBIDE 1/4" SHANK  
R-125 SET - \$108.25**

**TOOL NUMBERS**

70243, 70244, 70438, 70450, 70248, 70239,  
70302, 70247, 70242, 70241



**CARBIDE 1/4" SHANK  
R-90 SET - \$142.60**

**TOOL NUMBERS**

70452, 70411, 70239, 70244, 70241,  
70383, 70353, 70440, 70305, 70412



**HIGH SPEED STEEL 1/4" SHANK # 25 SET - \$178.40**

**TOOL NUMBERS**

125-B, 250-B, 375-B, 500-B, 125-A, 375-A, 500-A, 375-Q, 500-Q, 500-H,  
250-T, 375-T, 125-C, 250-C, 375-C, 500-C, 250-HA, 250-R, 375-R, 500-R



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# FINISHING & ROUGHING END MILL FEED & SPEED SELECTOR

## INSTRUCTIONS

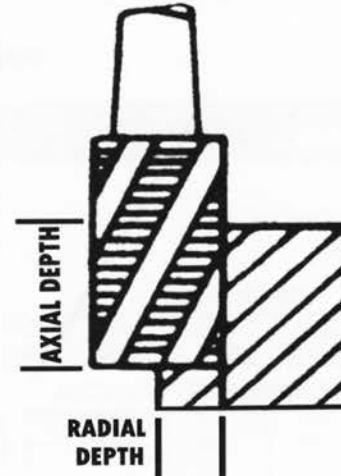
1. Locate SFPM & FPT for material, (table A)
2. Find RPM at intersection of SFM line & Diameter column, (table B)
3. Calculate Feed IPM = FPT x (No. of Flutes) x RPM

## EXPLANATION OF SYMBOLS:

SFPM = Surface Feet per Minute (Cutting Speed)  
RPM = Revolutions per Minute (Spindle Speed)  
FPT - Feed per Tooth  
IPM = Inches per Minute

| HIGH SPEED STEEL         |           |                      |       |       |       |       |         |          |
|--------------------------|-----------|----------------------|-------|-------|-------|-------|---------|----------|
| MATERIAL TO<br>BE CUT    | Condition | FEED PER TOOTH (FPT) |       |       |       |       |         | SFPM     |
|                          |           | 1/8" &<br>UNDER      | 1/4"  | 3/8"  | 1/2"  | 3/4"  | 1" & UP |          |
| Aluminum 2024, 6061 7075 | 150 Bhn   | .0006                | .0012 | .0020 | .0040 | .0064 | .0080   | 400-800  |
| Magnesium AM50A          | 90 Bhn    | .0007                | .0014 | .0023 | .0045 | .0072 | .0090   | 500-1000 |
| Bronze / Brass           | 81 RF     | .0004                | .0008 | .0013 | .0025 | .0040 | .0050   | 75-120   |
| Copper 834, 934, 978     | 150 Bhn   | .0005                | .0009 | .0015 | .0030 | .0048 | .0060   | 275-450  |
| Inconel 625, 718         | 300 Bhn   | .0002                | .0005 | .0008 | .0015 | .0024 | .0030   | 10-20    |
| Hastelloy Alloy B        | 220 Bhn   | .0002                | .0005 | .0008 | .0015 | .0024 | .0030   | 15-30    |
| Stainless Steel 304      | 185 Bhn   | .0004                | .0008 | .0013 | .0025 | .0040 | .0050   | 60-110   |
| Stainless Steel 17-4PH   | 375 Bhn   | .0002                | .0003 | .0005 | .0010 | .0016 | .0020   | 45-80    |
| Steel, 4140 / 4340       | 350 Bhn   | .0003                | .0006 | .0010 | .0020 | .0032 | .0040   | 40-70    |
| Steel, 1020              | 150 Bhn   | .0004                | .0008 | .0013 | .0025 | .0040 | .0050   | 100-165  |
| Tool Steel A2            | 250 Bhn   | .0002                | .0005 | .0008 | .0015 | .0024 | .0030   | 50-90    |
| Tool Steel D2            | 250 Bhn   | .0002                | .0005 | .0008 | .0015 | .0024 | .0030   | 35-65    |
| Tool Steel H13           | 200 Bhn   | .0002                | .0005 | .0008 | .0015 | .0024 | .0030   | 60-100   |
| Titanium 6Al-4V          | 325 Bhn   | .0002                | .0005 | .0008 | .0015 | .0024 | .0030   | 30-90    |
| Titanium 6Al-6V-2Sn      | 370 Bhn   | .0002                | .0005 | .0008 | .0015 | .0024 | .0030   | 30-90    |
| Cast Iron (Ductile)      | 190 Bhn   | .0005                | .0009 | .0015 | .0030 | .0048 | .0060   | 75-125   |
| Cast Iron (Gray)         | 220 Bhn   | .0003                | .0006 | .0010 | .0020 | .0032 | .0040   | 75-125   |

These are based on a RADIAL Depth of Cut equal to the Tool Diameter divided by 4



These Starting Points are Based on Maximum Axial Depth of 1.5 X the Cutting Diameter.

Speeds May be Increased When Using: TiN +25% TiCN +30% TiAlN +35%.

When Slotting Reduce Feed per Tooth 20% and if the Slot Depth is Greater then 1/2 of the Tool Diameter Reduce by 50%.

Roughing End Mills Increase Feed per Tooth by 20%.

## RPM SELECTOR

| Surface Feet<br>Per Minute<br>(SFPM) | 20                           | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  | 125  | 150  | 200  | 300  | 400  | 500  | 600  | 800  | 1000 |
|--------------------------------------|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Diameter<br>Inches                   | REVOLUTIONS PER MINUTE (RPM) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 1/16                                 | 122                          | 1833 | 2445 | 3056 | 3667 | 4278 | 4889 | 5500 | 6112 | 7639 | 9167 |      |      |      |      |      |      |      |
| 1/8                                  | 611                          | 917  | 1222 | 1528 | 1833 | 2139 | 2445 | 2750 | 3056 | 3820 | 4584 | 6112 | 9167 |      |      |      |      |      |
| 3/16                                 | 407                          | 611  | 815  | 1019 | 1222 | 1426 | 1630 | 1833 | 2037 | 2546 | 3056 | 4074 | 6112 | 8149 |      |      |      |      |
| 1/4                                  | 306                          | 458  | 611  | 764  | 917  | 1070 | 1222 | 1375 | 1528 | 1910 | 2292 | 3056 | 4584 | 6112 | 7639 | 9167 |      |      |
| 5/16                                 | 244                          | 367  | 489  | 611  | 733  | 856  | 978  | 1100 | 1222 | 1528 | 1833 | 2445 | 3667 | 4889 | 6112 | 7334 | 9778 |      |
| 3/8                                  | 204                          | 306  | 407  | 509  | 611  | 713  | 815  | 917  | 1019 | 1273 | 1528 | 2037 | 3056 | 4074 | 5093 | 6112 | 8149 |      |
| 7/16                                 | 175                          | 262  | 349  | 437  | 524  | 611  | 698  | 786  | 873  | 1091 | 1310 | 1746 | 2619 | 3492 | 4365 | 5238 | 6985 | 8731 |
| 1/2                                  | 153                          | 229  | 306  | 382  | 458  | 535  | 611  | 688  | 764  | 955  | 1146 | 1528 | 2292 | 3056 | 3820 | 4584 | 6112 | 7639 |
| 5/8                                  | 122                          | 183  | 244  | 306  | 367  | 428  | 489  | 550  | 611  | 764  | 917  | 1222 | 1833 | 2445 | 3056 | 3667 | 4889 | 6112 |
| 3/4                                  | 102                          | 153  | 204  | 255  | 306  | 357  | 407  | 458  | 509  | 637  | 764  | 1019 | 1528 | 2037 | 2546 | 3056 | 4074 | 5093 |
| 7/8                                  | 87                           | 131  | 175  | 218  | 262  | 306  | 349  | 393  | 437  | 546  | 655  | 873  | 1310 | 1746 | 2183 | 2619 | 3492 | 4365 |
| 1                                    | 76                           | 115  | 153  | 191  | 229  | 267  | 306  | 344  | 382  | 477  | 573  | 764  | 1146 | 1528 | 1910 | 2292 | 3056 | 3820 |
| 1-1/8                                | 68                           | 102  | 136  | 170  | 204  | 238  | 272  | 306  | 340  | 424  | 509  | 679  | 1019 | 1358 | 1698 | 2037 | 2716 | 3395 |
| 1-1/4                                | 61                           | 92   | 122  | 153  | 183  | 214  | 244  | 275  | 306  | 382  | 458  | 611  | 917  | 1222 | 1528 | 1833 | 2445 | 3056 |
| 1-3/8                                | 56                           | 83   | 111  | 139  | 167  | 194  | 222  | 250  | 278  | 347  | 417  | 556  | 833  | 1111 | 1389 | 1667 | 2222 | 2778 |
| 1-1/2                                | 51                           | 76   | 102  | 127  | 153  | 178  | 204  | 229  | 255  | 318  | 382  | 509  | 764  | 1019 | 1273 | 1528 | 2037 | 2546 |
| 1-5/8                                | 47                           | 71   | 94   | 118  | 141  | 165  | 188  | 212  | 235  | 294  | 353  | 470  | 705  | 940  | 1175 | 1410 | 1880 | 2351 |
| 1-3/4                                | 44                           | 66   | 87   | 109  | 131  | 153  | 175  | 196  | 218  | 273  | 327  | 437  | 655  | 873  | 1091 | 1310 | 1746 | 2183 |
| 1-7/8                                | 41                           | 61   | 82   | 102  | 122  | 143  | 163  | 183  | 204  | 255  | 306  | 407  | 611  | 815  | 1019 | 1222 | 1630 | 2037 |
| 2                                    | 38                           | 57   | 76   | 96   | 115  | 134  | 153  | 172  | 191  | 239  | 286  | 382  | 573  | 764  | 955  | 1446 | 1528 | 1910 |
| 2-1/2                                | 31                           | 46   | 61   | 76   | 92   | 107  | 122  | 138  | 153  | 191  | 229  | 306  | 458  | 611  | 764  | 917  | 1222 | 1528 |

## OTHER CONSIDERATIONS

### SPEED

#### Use Higher Speed For:

- Soft Materials
- Better Finishes
- Small Diameter Cutters
- Light Cuts
- Frail Set-Ups
- Maximum Production Rates

#### Use Lower Speed For:

- Hard Materials
- Abrasive Materials
- Tough Materials
- Heavy Cuts
- Maximum Cutter Life
- Minimum Tool Wear

### FEED

#### Use More Feed For:

- Heavy, Roughing Cuts
- Rigid Set-Ups
- Abrasive Materials
- High Tensile Strength Materials
- Chatter Problems
- Easily Machined Metals

#### Use Less Feed For:

- Light, & Finishing cuts
- Frail Set-Ups
- Smaller Diameter Cutters
- Hard to Machine Work Materials
- Deep Slotting Cuts
- Low Tensile Strength Materials



## 3 Flute Aluminum Coarse Knuckle C/C M-42 Cobalt

O.D.  
Tolerance  
+.003-.000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TiCN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|------------|
| AKQCS-12M      | 3/8            | 3/8            | 3/8            | 2-1/8       | 3     | CC       | STUB        | 11334     | \$20.26     | \$25.00    |
| AKQCS-16M      | 1/2            | 1/2            | 1/2            | 2-1/2       | 3     | CC       | STUB        | 11338     | \$23.75     | \$29.04    |
| AKQCS-20M      | 5/8            | 5/8            | 5/8            | 2-3/4       | 3     | CC       | STUB        | 11342     | \$27.30     | \$34.47    |
| AKQCS-24M      | 3/4            | 3/4            | 3/4            | 3           | 3     | CC       | STUB        | 11346     | \$34.28     | \$44.39    |
| AKQCS-32M      | 1              | 1              | 1              | 3-1/2       | 3     | CC       | STUB        | 11350     | \$50.38     | \$67.56    |
| AKQC-12M       | 3/8            | 3/8            | 3/4            | 2-1/2       | 3     | CC       | REG         | 11304     | \$21.04     | \$25.77    |
| AKQC-16M       | 1/2            | 1/2            | 1-1/4          | 3-1/4       | 3     | CC       | REG         | 11308     | \$24.80     | \$30.55    |
| AKQC-20M       | 5/8            | 5/8            | 1-5/8          | 3-3/4       | 3     | CC       | REG         | 11312     | \$30.07     | \$38.59    |
| AKQC-24M       | 3/4            | 3/4            | 1-5/8          | 3-7/8       | 3     | CC       | REG         | 11316     | \$37.04     | \$49.76    |
| AKQC-32M       | 1              | 1              | 2              | 4-1/2       | 3     | CC       | REG         | 11320     | \$54.13     | \$71.95    |
| AKQC-40M       | 1-1/4          | 1-1/4          | 2              | 4-1/2       | 3     | CC       | REG         | 11324     | \$69.17     | \$92.00    |
| AKQC-48M       | 1-1/2          | 1-1/4          | 2              | 4-1/2       | 3     | CC       | REG         | 11328     | \$93.08     | \$120.40   |
| AKQCM-12M      | 3/8            | 3/8            | 1-1/2          | 3-1/4       | 3     | CC       | MED         | 11368     | \$24.35     | \$29.08    |
| AKQCM-24M      | 3/4            | 3/4            | 3              | 5-1/2       | 3     | CC       | MED         | 11374     | \$59.15     | \$73.42    |
| AKQCM-32M      | 1              | 1              | 3              | 5-1/2       | 3     | CC       | MED         | 11378     | \$61.65     | \$81.13    |
| AKQCM-40M      | 1-1/4          | 1-1/4          | 3              | 5-1/2       | 3     | CC       | MED         | 11382     | \$87.16     | \$112.36   |
| AKQCM-48M      | 1-1/2          | 1-1/4          | 3              | 5-1/2       | 3     | CC       | MED         | 11386     | \$114.46    | \$144.25   |
| AKQCL-16M      | 1/2            | 1/2            | 2              | 4           | 3     | CC       | LONG        | 11352     | \$32.03     | \$40.62    |
| AKQCL-20M      | 5/8            | 5/8            | 2-1/2          | 4-5/8       | 3     | CC       | LONG        | 11354     | \$38.13     | \$48.86    |
| AKQCL-24M      | 3/4            | 3/4            | 4              | 6-1/4       | 3     | CC       | LONG        | 11356     | \$67.66     | \$85.07    |
| AKQCL-32M      | 1              | 1              | 4              | 6-1/2       | 3     | CC       | LONG        | 11358     | \$76.21     | \$98.36    |
| AKQCL-40M      | 1-1/4          | 1-1/4          | 4              | 6-1/2       | 3     | CC       | LONG        | 11362     | \$96.73     | \$125.95   |
| AKQCL-48M      | 1-1/2          | 1-1/4          | 4              | 6-1/2       | 3     | CC       | LONG        | 11366     | \$127.53    | \$161.52   |
| AKQCX-32M      | 1              | 1              | 6              | 8-1/2       | 3     | CC       | X-LONG      | 11394     | \$98.27     | \$123.74   |
| AKQCX-40M      | 1-1/4          | 1-1/4          | 6              | 8-1/2       | 3     | CC       | X-LONG      | 11396     | \$143.82    | \$180.57   |
| AKQCX-48M      | 1-1/2          | 1-1/4          | 6              | 8-1/2       | 3     | CC       | X-LONG      | 11398     | \$181.78    | \$223.62   |

## Fine Pitch Knuckle Non C/C M-42 Cobalt

O.D.  
Tolerance  
+.003-.000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TiAlN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| FKQCS-8M       | 1/4            | 3/8            | 1/4            | 2-5/16      | 3     | NCC      | STUB        | 22425     | \$18.79     | \$24.31     |
| FKQCS-12M      | 3/8            | 3/8            | 3/8            | 2-1/8       | 4     | NCC      | STUB        | 22428     | \$18.79     | \$24.31     |
| FKQCS-16ZM     | 1/2            | 1/2            | 1/2            | 2-1/2       | 4     | NCC      | STUB        | 22431     | \$24.43     | \$30.62     |
| FKQCS-16ZM5    | 1/2            | 1/2            | 1/2            | 2-1/2       | 5     | NCC      | STUB        | 22432     | \$26.88     | \$33.06     |
| FKQCS-20ZM     | 5/8            | 5/8            | 5/8            | 2-3/4       | 4     | NCC      | STUB        | 22434     | \$30.15     | \$38.53     |
| FKQCS-20ZM5    | 5/8            | 5/8            | 5/8            | 2-3/4       | 5     | NCC      | STUB        | 22435     | \$33.52     | \$41.89     |
| FKQCS-24M      | 3/4            | 3/4            | 3/4            | 3           | 4     | NCC      | STUB        | 22358     | \$37.04     | \$48.84     |
| FKQCS-24M5     | 3/4            | 3/4            | 3/4            | 3           | 5     | NCC      | STUB        | 22357     | \$41.16     | \$52.95     |
| FKQCS-28YM     | 7/8            | 3/4            | 7/8            | 3-1/8       | 4     | NCC      | STUB        | 22359     | \$46.79     | \$64.03     |
| FKQCS-32ZM6    | 1              | 3/4            | 1-1/8          | 3-5/8       | 6     | NCC      | STUB        | 22378     | \$58.39     | \$78.42     |
| FKQCS-32ZM5    | 1              | 3/4            | 1-1/8          | 3-5/8       | 5     | NCC      | STUB        | 22380     | \$45.36     | \$65.40     |
| FKQCS-32YM     | 1              | 1              | 1              | 3-1/2       | 6     | NCC      | STUB        | 22381     | \$51.63     | \$71.66     |
| FKQCS-32M5     | 1              | 3/4            | 3/4            | 3           | 5     | NCC      | STUB        | 22382     | \$47.87     | \$67.90     |
| FKQCS-32YM5    | 1              | 1              | 1              | 3-1/2       | 5     | NCC      | STUB        | 22387     | \$54.19     | \$74.22     |
| FKQCS-40ZM     | 1-1/4          | 3/4            | 1-1/8          | 3-5/8       | 6     | NCC      | STUB        | 22383     | \$79.92     | \$103.82    |
| FKQCS-48ZM     | 1-1/2          | 3/4            | 1-1/8          | 3-5/8       | 6     | NCC      | STUB        | 22384     | \$81.51     | \$110.54    |
| FKQCS-64ZM     | 2              | 3/4            | 1-1/8          | 3-5/8       | 8     | NCC      | STUB        | 22385     | \$132.02    | \$174.93    |



## Fine Pitch Knuckle Non C/C M-42 Cobalt

O.D.  
Tolerance  
+.003-.000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIALN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| FKQC-6M        | 3/16           | 3/8            | 1/2            | 2-3/8       | 3     | NCC      | REG         | 22326     | \$19.50     | \$25.03     |
| FKQC-8M        | 1/4            | 3/8            | 5/8            | 2-1/2       | 3     | NCC      | REG         | 22328     | \$19.50     | \$25.03     |
| FKQC-8M4       | 1/4            | 3/8            | 5/8            | 2-1/2       | 4     | NCC      | REG         | 22329     | \$19.50     | \$25.03     |
| FKQC-10M       | 5/16           | 3/8            | 3/4            | 2-1/2       | 3     | NCC      | REG         | 22334     | \$19.50     | \$25.03     |
| FKQC-12M       | 3/8            | 3/8            | 3/4            | 2-1/2       | 4     | NCC      | REG         | 22336     | \$19.50     | \$25.03     |
| FKQC-14M       | 7/16           | 1/2            | 1              | 2-11/16     | 4     | NCC      | REG         | 22340     | \$29.36     | \$35.54     |
| FKQC-16M       | 1/2            | 1/2            | 1-1/4          | 3-1/4       | 4     | NCC      | REG         | 22344     | \$25.60     | \$32.31     |
| FKQC-16M5      | 1/2            | 1/2            | 1-1/4          | 3-1/4       | 5     | NCC      | REG         | 22345     | \$28.44     | \$35.15     |
| FKQC-18M       | 9/16           | 1/2            | 1-3/8          | 3-3/8       | 4     | NCC      | REG         | 22350     | \$31.14     | \$41.08     |
| FKQC-20M       | 5/8            | 5/8            | 1-5/8          | 3-3/4       | 4     | NCC      | REG         | 22352     | \$31.06     | \$40.99     |
| FKQC-20M5      | 5/8            | 5/8            | 1-5/8          | 3-3/4       | 5     | NCC      | REG         | 22353     | \$34.83     | \$44.76     |
| FKQC-24M5      | 3/4            | 3/4            | 1-5/8          | 3-7/8       | 5     | NCC      | REG         | 22355     | \$40.09     | \$54.93     |
| FKQC-24M       | 3/4            | 3/4            | 1-5/8          | 3-7/8       | 4     | NCC      | REG         | 22356     | \$35.62     | \$50.46     |
| FKQC-24XM      | 3/4            | 5/8            | 1-5/8          | 3-3/4       | 4     | NCC      | REG         | 22360     | \$39.55     | \$51.34     |
| FKQC-28M       | 7/8            | 3/4            | 1-7/8          | 4-1/8       | 4     | NCC      | REG         | 22364     | \$51.11     | \$71.39     |
| FKQC-28YM      | 7/8            | 7/8            | 1-7/8          | 4-1/8       | 5     | NCC      | REG         | 22366     | \$49.12     | \$69.40     |
| FKQC-32YM      | 1              | 3/4            | 2              | 4-1/4       | 6     | NCC      | REG         | 22369     | \$56.12     | \$76.89     |
| FKQC-32M5      | 1              | 1              | 2              | 4-1/2       | 5     | NCC      | REG         | 22372     | \$53.61     | \$74.38     |
| FKQC-32M6      | 1              | 1              | 2              | 4-1/2       | 6     | NCC      | REG         | 22374     | \$59.95     | \$80.73     |
| FKQC-40M       | 1-1/4          | 1-1/4          | 2              | 4-1/2       | 6     | NCC      | REG         | 22400     | \$71.15     | \$97.77     |
| FKQC-48M       | 1-1/2          | 1-1/4          | 2              | 4-1/2       | 6     | NCC      | REG         | 22403     | \$99.34     | \$131.21    |
| FKQC-64M       | 2              | 1-1/4          | 2              | 4-1/2       | 8     | NCC      | REG         | 22406     | \$149.58    | \$197.57    |
| FKQCM-32M5     | 1              | 1              | 3              | 5-1/2       | 5     | NCC      | MED         | 22390     | \$68.65     | \$91.37     |
| FKQCM-32M6     | 1              | 1              | 3              | 5-1/2       | 6     | NCC      | MED         | 22392     | \$78.06     | \$100.77    |
| FKQCM-40M      | 1-1/4          | 1-1/4          | 3              | 5-1/2       | 6     | NCC      | MED         | 22409     | \$93.71     | \$123.10    |
| FKQCM-48M      | 1-1/2          | 1-1/4          | 3              | 5-1/2       | 6     | NCC      | MED         | 22412     | \$128.10    | \$162.84    |
| FKQCM-64M      | 2              | 1-1/4          | 3              | 5-1/2       | 8     | NCC      | MED         | 22415     | \$170.06    | \$223.16    |
| FKQCL-8M       | 1/4            | 3/8            | 1-1/4          | 3-1/8       | 3     | NCC      | LONG        | 22330     | \$23.26     | \$28.79     |
| FKQCL-10M      | 5/16           | 3/8            | 1-3/8          | 3-1/8       | 3     | NCC      | LONG        | 22332     | \$23.26     | \$28.79     |
| FKQCL-12M      | 3/8            | 3/8            | 1-1/2          | 3-1/4       | 4     | NCC      | LONG        | 22338     | \$23.26     | \$28.79     |
| FKQCL-14M      | 7/16           | 1/2            | 1-3/4          | 3-3/4       | 4     | NCC      | LONG        | 22346     | \$41.21     | \$47.94     |
| FKQCL-16M      | 1/2            | 1/2            | 2              | 4           | 4     | NCC      | LONG        | 22348     | \$34.09     | \$44.10     |
| FKQCL-20M      | 5/8            | 5/8            | 2-1/2          | 4-5/8       | 4     | NCC      | LONG        | 22354     | \$40.09     | \$52.62     |
| FKQCL-24M      | 3/4            | 3/4            | 3              | 5-1/4       | 4     | NCC      | LONG        | 22362     | \$46.62     | \$63.27     |
| FKQCL-28XM     | 7/8            | 3/4            | 3-1/2          | 5-3/4       | 5     | NCC      | LONG        | 22368     | \$59.59     | \$81.11     |
| FKQCL-28M      | 7/8            | 7/8            | 3-1/2          | 5-3/4       | 4     | NCC      | LONG        | 22370     | \$56.75     | \$78.26     |
| FKQCL-32M5     | 1              | 1              | 4              | 6-1/2       | 5     | NCC      | LONG        | 22386     | \$72.67     | \$98.52     |
| FKQCL-32M6     | 1              | 1              | 4              | 6-1/2       | 6     | NCC      | LONG        | 22388     | \$81.19     | \$107.04    |
| FKQCL-40M      | 1-1/4          | 1-1/4          | 4              | 6-1/2       | 6     | NCC      | LONG        | 22418     | \$105.24    | \$139.33    |
| FKQCL-48M      | 1-1/2          | 1-1/4          | 4              | 6-1/2       | 6     | NCC      | LONG        | 22421     | \$142.75    | \$182.39    |
| FKQCL-64M      | 2              | 1-1/4          | 4              | 6-1/2       | 8     | NCC      | LONG        | 22424     | \$183.57    | \$242.83    |
| FKQCL-264-4M   | 2              | 2*             | 4              | 7-3/4       | 8     | NCC      | LONG        | 22427     | \$205.96    | \$275.41    |
| FKQCL-264-6M   | 2              | 2*             | 6              | 9-3/4       | 8     | NCC      | LONG        | 22430     | \$254.62    | \$348.58    |
| FKQCL-264-8M   | 2              | 2*             | 8              | 11-3/4      | 8     | NCC      | LONG        | 22433     | \$380.08    | \$510.82    |
| FKQCX-32M5     | 1              | 1              | 6              | 8-1/2       | 5     | NCC      | X-LONG      | 22394     | \$99.24     | \$128.96    |
| FKQCX-32M6     | 1              | 1              | 6              | 8-1/2       | 6     | NCC      | X-LONG      | 22396     | \$111.13    | \$140.85    |
| FKQCX-40M      | 1-1/4          | 1-1/4          | 6              | 8-1/2       | 6     | NCC      | X-LONG      | 22436     | \$150.35    | \$193.22    |
| FKQCX-48-6M    | 1-1/2          | 1-1/4          | 6              | 8-1/2       | 6     | NCC      | X-LONG      | 22438     | \$209.71    | \$258.52    |
| FKQCX-48-8M    | 1-1/2          | 1-1/4          | 8              | 10-1/2      | 6     | NCC      | X-LONG      | 22439     | \$236.77    | \$291.95    |
| FKQCX-264-10M  | 2              | 2*             | 10             | 13-3/4      | 8     | NCC      | X-LONG      | 22442     | \$452.27    | \$615.68    |
| FKQCX-264-12M  | 2              | 2*             | 12             | 15-3/4      | 8     | NCC      | X-LONG      | 22445     | \$539.66    | \$784.78    |
| FKQCX-80-8M    | 2-1/2          | 2*             | 8              | 11-5/8      | 8     | NCC      | X-LONG      | 22447     | \$539.10    | \$825.08    |
| FKQCX-80-10M   | 2-1/2          | 2*             | 10             | 13-5/8      | 8     | NCC      | X-LONG      | 22449     | \$634.52    | \$969.52    |
| FKQCX-80-12M   | 2-1/2          | 2*             | 12             | 15-5/8      | 8     | NCC      | X-LONG      | 22451     | \$761.02    | \$1,149.14  |

\*Sure-Lock Combination Shank



## Fine Pitch Knuckle "Center Cutting" M-42 Cobalt

O.D  
Tolerance  
+.003-.000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIALN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| JFKQC-6M       | 3/16           | 3/8            | 1/2            | 2-3/8       | 3     | CC       | REG         | 27202     | \$22.81     | \$28.34     |
| JFKQC-8M       | 1/4            | 3/8            | 5/8            | 2-1/2       | 3     | CC       | REG         | 27205     | \$22.81     | \$28.34     |
| JFKQC-10M      | 5/16           | 3/8            | 3/4            | 2-1/2       | 3     | CC       | REG         | 27207     | \$22.81     | \$28.34     |
| JFKQC-12M      | 3/8            | 3/8            | 3/4            | 2-1/2       | 4     | CC       | REG         | 27210     | \$22.81     | \$28.34     |
| JFKQC-14M      | 7/16           | 1/2            | 1              | 2-11/16     | 4     | CC       | REG         | 27211     | \$30.07     | \$36.26     |
| JFKQC-16M      | 1/2            | 1/2            | 1-1/4          | 3-1/4       | 4     | CC       | REG         | 27212     | \$30.07     | \$36.78     |
| JFKQC-20M      | 5/8            | 5/8            | 1-5/8          | 3-3/4       | 4     | CC       | REG         | 27217     | \$37.04     | \$46.98     |
| JFKQC-24M      | 3/4            | 3/4            | 1-5/8          | 3-7/8       | 4     | CC       | REG         | 27222     | \$42.60     | \$57.43     |
| JFKQC-28M      | 7/8            | 3/4            | 1-7/8          | 4-1/8       | 4     | CC       | REG         | 27227     | \$59.59     | \$79.89     |
| JFKQC-32M5     | 1              | 1              | 2              | 4-1/2       | 5     | CC       | REG         | 27231     | \$65.15     | \$85.92     |
| JFKQC-32YM6    | 1              | 3/4            | 2              | 4-1/4       | 6     | CC       | REG         | 27232     | \$65.15     | \$85.92     |
| JFKQC-32M6     | 1              | 1              | 2              | 4-1/2       | 6     | CC       | REG         | 27233     | \$65.15     | \$85.92     |
| JFKQC-40M      | 1-1/4          | 1-1/4          | 2              | 4-1/2       | 6     | CC       | REG         | 27245     | \$85.20     | \$111.83    |
| JFKQC-48M      | 1-1/2          | 1-1/4          | 2              | 4-1/2       | 6     | CC       | REG         | 27255     | \$122.30    | \$154.18    |
| JFKQC-64M      | 2              | 1-1/4          | 2              | 4-1/2       | 8     | CC       | REG         | 27258     | \$180.38    | \$228.38    |
| JFKQC-264-2M   | 2              | 2              | 2              | 5-3/4       | 8     | CC       | REG         | 27275     | \$210.97    | \$264.08    |
| JFKQCL-8M      | 1/4            | 3/8            | 1-1/4          | 3-1/8       | 3     | CC       | LONG        | 27206     | \$28.11     | \$33.63     |
| JFKQCL-10M     | 5/16           | 3/8            | 1-3/8          | 3-1/8       | 3     | CC       | LONG        | 27208     | \$28.11     | \$33.63     |
| JFKQCL-12M     | 3/8            | 3/8            | 1-1/2          | 3-1/4       | 4     | CC       | LONG        | 27209     | \$28.11     | \$33.63     |
| JFKQCL-16M     | 1/2            | 1/2            | 2              | 4           | 4     | CC       | LONG        | 27215     | \$40.64     | \$50.65     |
| JFKQCL-20M     | 5/8            | 5/8            | 2-1/2          | 4-5/8       | 4     | CC       | LONG        | 27220     | \$48.60     | \$61.13     |
| JFKQCL-24M     | 3/4            | 3/4            | 3              | 5-1/4       | 4     | CC       | LONG        | 27225     | \$54.13     | \$70.79     |
| JFKQCL-32M5    | 1              | 1              | 4              | 6-1/2       | 5     | CC       | LONG        | 27236     | \$85.20     | \$111.05    |
| JFKQCL-40M     | 1-1/4          | 1-1/4          | 4              | 6-1/2       | 6     | CC       | LONG        | 27250     | \$127.79    | \$161.88    |
| JFKQCL-48M     | 1-1/2          | 1-1/4          | 4              | 6-1/2       | 6     | CC       | LONG        | 27260     | \$174.12    | \$213.76    |
| JFKQCL-64M     | 2              | 1-1/4          | 4              | 6-1/2       | 8     | CC       | LONG        | 27265     | \$236.73    | \$295.99    |
| JFKQCL-264-4M  | 2              | 2*             | 4              | 7-3/4       | 8     | CC       | LONG        | 27277     | \$248.92    | \$318.36    |
| JFKQCL-264-6M  | 2              | 2*             | 6              | 9-3/4       | 8     | CC       | LONG        | 27280     | \$307.91    | \$401.89    |

## Coarse Pitch Knuckle "Center Cutting" M-42 Cobalt

O.D  
Tolerance  
+.003-.000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIALN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| JKQC-6M        | 3/16           | 3/8            | 1/2            | 2-3/8       | 3     | CC       | REG         | 30302     | \$25.55     | \$31.09     |
| JKQC-8M        | 1/4            | 3/8            | 5/8            | 2-1/2       | 3     | CC       | REG         | 30305     | \$25.55     | \$31.09     |
| JKQC-10M       | 5/16           | 3/8            | 3/4            | 2-1/2       | 3     | CC       | REG         | 30307     | \$25.25     | \$30.77     |
| JKQC-12M       | 3/8            | 3/8            | 3/4            | 2-1/2       | 4     | CC       | REG         | 30310     | \$22.81     | \$28.34     |
| JKQC-14M       | 7/16           | 1/2            | 1              | 2-11/16     | 4     | CC       | REG         | 30311     | \$32.20     | \$38.39     |
| JKQC-16M       | 1/2            | 1/2            | 1-1/4          | 3-1/4       | 4     | CC       | REG         | 30312     | \$30.07     | \$36.78     |
| JKQC-20M       | 5/8            | 5/8            | 1-5/8          | 3-3/4       | 4     | CC       | REG         | 30317     | \$37.04     | \$46.98     |
| JKQC-24M       | 3/4            | 3/4            | 1-5/8          | 3-7/8       | 4     | CC       | REG         | 30322     | \$42.60     | \$57.43     |
| JKQC-28M       | 7/8            | 3/4            | 1-7/8          | 4-1/8       | 4     | CC       | REG         | 30327     | \$45.19     | \$65.48     |
| JKQC-32M5      | 1              | 1              | 2              | 4-1/2       | 5     | CC       | REG         | 30331     | \$65.15     | \$85.92     |
| JKQC-32YM6     | 1              | 3/4            | 2              | 4-1/4       | 6     | CC       | REG         | 30332     | \$65.15     | \$85.92     |
| JKQC-32M6      | 1              | 1              | 2              | 4-1/2       | 6     | CC       | REG         | 30333     | \$82.38     | \$103.15    |
| JKQC-40M       | 1-1/4          | 1-1/4          | 2              | 4-1/2       | 6     | CC       | REG         | 30345     | \$85.20     | \$111.83    |
| JKQC-48M       | 1-1/2          | 1-1/4          | 2              | 4-1/2       | 6     | CC       | REG         | 30355     | \$122.30    | \$154.18    |
| JKQC-64M       | 2              | 1-1/4          | 2              | 4-1/2       | 8     | CC       | REG         | 30358     | \$164.61    | \$212.61    |
| JKQC-264-2M    | 2              | 2*             | 2              | 5-3/4       | 8     | CC       | REG         | 30375     | \$230.89    | \$284.00    |



## Coarse Pitch Knuckle "Center Cutting" M-42 Cobalt

O.D  
Tolerance  
+.003-.000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIALN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| JKQCL-8M       | 1/4            | 3/8            | 1-1/4          | 3-1/8       | 3     | CC       | LONG        | 30306     | \$28.69     | \$34.22     |
| JKQCL-10M      | 5/16           | 3/8            | 1-3/8          | 3-1/8       | 3     | CC       | LONG        | 30308     | \$28.11     | \$33.63     |
| JKQCL-12M      | 3/8            | 3/8            | 1-1/2          | 3-1/4       | 4     | CC       | LONG        | 30309     | \$28.11     | \$33.63     |
| JKQCL-16M      | 1/2            | 1/2            | 2              | 4           | 4     | CC       | LONG        | 30315     | \$40.64     | \$50.65     |
| JKQCL-20M      | 5/8            | 5/8            | 2-1/2          | 4-5/8       | 4     | CC       | LONG        | 30320     | \$48.60     | \$61.13     |
| JKQCL-24M      | 3/4            | 3/4            | 3              | 5-1/4       | 4     | CC       | LONG        | 30325     | \$54.13     | \$70.79     |
| JKQCL-32M5     | 1              | 1              | 4              | 6-1/2       | 5     | CC       | LONG        | 30336     | \$85.20     | \$111.05    |
| JKQCL-40M      | 1-1/4          | 1-1/4          | 4              | 6-1/2       | 6     | CC       | LONG        | 30350     | \$127.79    | \$161.88    |
| JKQCL-48M      | 1-1/2          | 1-1/4          | 4              | 6-1/2       | 6     | CC       | LONG        | 30360     | \$174.12    | \$213.76    |
| JKQCL-64M      | 2              | 1-1/4          | 4              | 6-1/2       | 8     | CC       | LONG        | 30365     | \$259.08    | \$318.35    |
| JKQCL-264-4M   | 2              | 2*             | 4              | 7-3/4       | 8     | CC       | LONG        | 30377     | \$286.35    | \$355.80    |
| JKQCL-264-6M   | 2              | 2*             | 6              | 9-3/4       | 8     | CC       | LONG        | 30380     | \$368.99    | \$462.96    |

## Coarse Pitch Knuckle Non C/C M-42 Cobalt

O.D  
Tolerance  
+.003-.000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIALN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| KQCS-8M        | 1/4            | 3/8            | 1/4            | 2-5/16      | 3     | NCC      | STUB        | 30403     | \$18.79     | \$24.31     |
| KQCS-12M       | 3/8            | 3/8            | 3/8            | 2-1/8       | 4     | NCC      | STUB        | 30406     | \$18.79     | \$24.31     |
| KQCS-16M       | 1/2            | 1/2            | 3/4            | 2-3/4       | 4     | NCC      | STUB        | 30858     | \$24.93     | \$31.12     |
| KQCS-16ZM      | 1/2            | 1/2            | 1/2            | 2-1/2       | 4     | NCC      | STUB        | 30412     | \$24.43     | \$30.62     |
| KQCS-16ZM5     | 1/2            | 1/2            | 1/2            | 2-1/2       | 5     | NCC      | STUB        | 30413     | \$26.88     | \$33.06     |
| KQCS-20M       | 5/8            | 5/8            | 1              | 3-1/8       | 4     | NCC      | STUB        | 30814     | \$31.06     | \$40.99     |
| KQCS-20ZM      | 5/8            | 5/8            | 5/8            | 2-3/4       | 4     | NCC      | STUB        | 30415     | \$29.38     | \$37.75     |
| KQCS-20ZM5     | 5/8            | 5/8            | 5/8            | 2-3/4       | 5     | NCC      | STUB        | 30416     | \$33.52     | \$41.89     |
| KQCS-24M       | 3/4            | 3/4            | 3/4            | 3           | 4     | NCC      | STUB        | 30821     | \$37.04     | \$48.84     |
| KQCS-24M5      | 3/4            | 3/4            | 3/4            | 3           | 5     | NCC      | STUB        | 30418     | \$41.16     | \$52.95     |
| KQCS-24ZM      | 3/4            | 3/4            | 1              | 3-1/4       | 4     | NCC      | STUB        | 30839     | \$37.04     | \$48.84     |
| KQCS-28M       | 7/8            | 7/8            | 1              | 3-1/4       | 4     | NCC      | STUB        | 30871     | \$47.55     | \$64.77     |
| KQCS-28YM      | 7/8            | 3/4            | 7/8            | 3-1/8       | 4     | NCC      | STUB        | 30425     | \$49.12     | \$66.36     |
| KQCS-32M5      | 1              | 3/4            | 3/4            | 3           | 5     | NCC      | STUB        | 30829     | \$42.52     | \$62.55     |
| KQCS-32ZM6     | 1              | 3/4            | 1-1/8          | 3-5/8       | 6     | NCC      | STUB        | 30833     | \$50.12     | \$70.15     |
| KQCS-32YM6     | 1              | 1              | 1              | 3-1/2       | 6     | NCC      | STUB        | 30844     | \$51.63     | \$71.66     |
| KQCS-32YM5     | 1              | 1              | 1              | 3-1/2       | 5     | NCC      | STUB        | 30848     | \$54.19     | \$74.22     |
| KQCS-32ZM5     | 1              | 3/4            | 1-1/8          | 3-5/8       | 5     | NCC      | STUB        | 30834     | \$50.12     | \$70.15     |
| KQCS-36ZM      | 1-1/8          | 3/4            | 1-1/8          | 3-5/8       | 6     | NCC      | STUB        | 30843     | \$72.41     | \$96.31     |
| KQCS-40ZM      | 1-1/4          | 3/4            | 1-1/8          | 3-5/8       | 6     | NCC      | STUB        | 30846     | \$73.66     | \$97.56     |
| KQCS-44M       | 1-3/8          | 3/4            | 1-1/8          | 3-3/8       | 6     | NCC      | STUB        | 30853     | \$79.92     | \$108.95    |
| KQCS-48ZM      | 1-1/2          | 3/4            | 1-1/8          | 3-5/8       | 6     | NCC      | STUB        | 30856     | \$81.51     | \$110.54    |
| KQCS-52M       | 1-5/8          | 3/4            | 1-1/8          | 3-3/8       | 6     | NCC      | STUB        | 30866     | \$109.80    | \$147.80    |
| KQCS-56M       | 1-3/4          | 3/4            | 1-1/8          | 3-3/8       | 6     | NCC      | STUB        | 30893     | \$130.06    | \$168.06    |
| KQCS-64ZM      | 2              | 3/4            | 1-1/8          | 3-5/8       | 8     | NCC      | STUB        | 30868     | \$132.02    | \$174.93    |
| KQC-6M         | 3/16           | 3/8            | 1/2            | 2-3/8       | 3     | NCC      | REG         | 30802     | \$19.50     | \$25.03     |
| KQC-8M4        | 1/4            | 3/8            | 5/8            | 2-1/2       | 4     | NCC      | REG         | 30804     | \$19.50     | \$25.03     |
| KQC-8M         | 1/4            | 3/8            | 5/8            | 2-1/2       | 3     | NCC      | REG         | 30805     | \$19.50     | \$25.03     |
| KQC-9M         | 9/32           | 3/8            | 3/4            | 2-1/2       | 3     | NCC      | REG         | 30801     | \$24.05     | \$29.58     |
| KQC-10M        | 5/16           | 3/8            | 3/4            | 2-1/2       | 3     | NCC      | REG         | 30807     | \$19.50     | \$25.03     |
| KQC-11M        | 11/32          | 3/8            | 3/4            | 2-1/2       | 4     | NCC      | REG         | 30803     | \$24.05     | \$29.58     |
| KQC-12M        | 3/8            | 3/8            | 3/4            | 2-1/2       | 4     | NCC      | REG         | 30810     | \$19.50     | \$25.03     |
| KQC-13M        | 13/32          | 3/8            | 1              | 2-3/4       | 4     | NCC      | REG         | 30818     | \$32.01     | \$38.20     |
| KQC-14M        | 7/16           | 1/2            | 1              | 2-11/16     | 4     | NCC      | REG         | 30811     | \$28.90     | \$35.09     |
| KQC-15M        | 15/32          | 1/2            | 1-1/4          | 3-1/4       | 4     | NCC      | REG         | 30869     | \$30.57     | \$37.29     |
| KQC-16M        | 1/2            | 1/2            | 1-1/4          | 3-1/4       | 4     | NCC      | REG         | 30812     | \$25.61     | \$32.31     |



## Coarse Pitch Knuckle Non C/C M-42 Cobalt

O.D  
Tolerance  
+.003-.000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIALN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| KQC-16M5       | 1/2            | 1/2            | 1-1/4          | 3-1/4       | 5     | NCC      | REG         | 30849     | \$28.44     | \$35.15     |
| KQC-18M        | 9/16           | 1/2            | 1-3/8          | 3-3/8       | 4     | NCC      | REG         | 30816     | \$31.14     | \$41.08     |
| KQC-20M        | 5/8            | 5/8            | 1-5/8          | 3-3/4       | 4     | NCC      | REG         | 30817     | \$31.06     | \$40.99     |
| KQC-20M5       | 5/8            | 5/8            | 1-5/8          | 3-3/4       | 5     | NCC      | REG         | 30854     | \$34.83     | \$44.76     |
| KQC-22M        | 11/16          | 5/8            | 1-5/8          | 3-3/4       | 4     | NCC      | REG         | 30819     | \$39.55     | \$51.34     |
| KQC-24M        | 3/4            | 3/4            | 1-5/8          | 3-7/8       | 4     | NCC      | REG         | 30822     | \$35.62     | \$50.46     |
| KQC-24M5       | 3/4            | 3/4            | 1-5/8          | 3-7/8       | 5     | NCC      | REG         | 30861     | \$40.09     | \$54.93     |
| KQC-24XM       | 3/4            | 5/8            | 1-5/8          | 3-3/4       | 4     | NCC      | REG         | 30823     | \$39.55     | \$51.34     |
| KQC-26M        | 13/16          | 3/4            | 1-7/8          | 4           | 4     | NCC      | REG         | 30824     | \$41.97     | \$62.25     |
| KQC-28YM       | 7/8            | 7/8            | 1-5/8          | 4-1/8       | 5     | NCC      | REG         | 30826     | \$51.11     | \$71.39     |
| KQC-28M        | 7/8            | 3/4            | 1-7/8          | 4-1/8       | 4     | NCC      | REG         | 30827     | \$49.12     | \$69.40     |
| KQC-30M        | 15/16          | 3/4            | 1-7/8          | 4-1/8       | 4     | NCC      | REG         | 30851     | \$62.15     | \$82.91     |
| KQC-32M5       | 1              | 1              | 2              | 4-1/2       | 5     | NCC      | REG         | 30831     | \$53.61     | \$74.38     |
| KQC-32M6       | 1              | 1              | 2              | 4-1/2       | 6     | NCC      | REG         | 30832     | \$59.95     | \$80.73     |
| KQC-32YM6      | 1              | 3/4            | 2              | 4-1/4       | 6     | NCC      | REG         | 30859     | \$56.12     | \$76.89     |
| KQC-36M        | 1-1/8          | 1              | 2              | 4-1/2       | 6     | NCC      | REG         | 30842     | \$76.69     | \$103.32    |
| KQC-40M        | 1-1/4          | 1-1/4          | 2              | 4-1/2       | 6     | NCC      | REG         | 30845     | \$71.15     | \$97.77     |
| KQC-48M        | 1-1/2          | 1-1/4          | 2              | 4-1/2       | 6     | NCC      | REG         | 30855     | \$99.34     | \$131.21    |
| KQC-56M        | 1-3/4          | 1-1/4          | 2              | 4-1/2       | 6     | NCC      | REG         | 30863     | \$128.10    | \$168.14    |
| KQC-64M        | 2              | 1-1/4          | 2              | 4-1/2       | 8     | NCC      | REG         | 30867     | \$149.58    | \$197.57    |
| KQC-264-2M     | 2              | 2*             | 2              | 5-3/4       | 8     | NCC      | REG         | 30875     | \$166.75    | \$219.86    |
| KQCM-32M6      | 1              | 1              | 3              | 5-1/2       | 6     | NCC      | MED         | 30835     | \$78.06     | \$100.77    |
| KQCM-32M5      | 1              | 1              | 3              | 5-1/2       | 5     | NCC      | MED         | 30838     | \$68.65     | \$91.37     |
| KQCM-40M       | 1-1/4          | 1-1/4          | 3              | 5-1/2       | 6     | NCC      | MED         | 30847     | \$93.71     | \$123.10    |
| KQCM-48M       | 1-1/2          | 1-1/4          | 3              | 5-1/2       | 6     | NCC      | MED         | 30857     | \$128.10    | \$162.84    |
| KQCM-64M       | 2              | 1-1/4          | 3              | 5-1/2       | 8     | NCC      | MED         | 30870     | \$170.06    | \$223.16    |

## Coarse Pitch Knuckle Non C/C M-42 Cobalt

O.D  
Tolerance  
+.003-.000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIALN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| KQCL-8M        | 1/4            | 3/8            | 1-1/4          | 3-1/8       | 3     | NCC      | LONG        | 30806     | \$23.26     | \$28.79     |
| KQCL-10M       | 5/16           | 3/8            | 1-3/8          | 3-1/8       | 3     | NCC      | LONG        | 30808     | \$23.26     | \$28.79     |
| KQCL-12M       | 3/8            | 3/8            | 1-1/2          | 3-1/4       | 4     | NCC      | LONG        | 30809     | \$23.26     | \$28.79     |
| KQCL-14M       | 7/16           | 1/2            | 1-3/4          | 3-3/4       | 4     | NCC      | LONG        | 30813     | \$41.21     | \$47.94     |
| KQCL-16M       | 1/2            | 1/2            | 2              | 4           | 4     | NCC      | LONG        | 30815     | \$34.09     | \$44.10     |
| KQCL-20M       | 5/8            | 5/8            | 2-1/2          | 4-5/8       | 4     | NCC      | LONG        | 30820     | \$40.09     | \$52.62     |
| KQCL-24M       | 3/4            | 3/4            | 3              | 5-1/4       | 4     | NCC      | LONG        | 30825     | \$46.62     | \$63.27     |
| KQCL-28XM      | 7/8            | 3/4            | 3-1/2          | 5-3/4       | 5     | NCC      | LONG        | 30828     | \$59.59     | \$81.11     |
| KQCL-28M       | 7/8            | 7/8            | 3-1/2          | 5-1/4       | 4     | NCC      | LONG        | 30830     | \$62.19     | \$83.71     |
| KQCL-32M5      | 1              | 1              | 4              | 6-1/2       | 5     | NCC      | LONG        | 30836     | \$72.67     | \$98.52     |
| KQCL-32M6      | 1              | 1              | 4              | 6-1/2       | 6     | NCC      | LONG        | 30837     | \$81.19     | \$107.04    |
| KQCL-40M       | 1-1/4          | 1-1/4          | 4              | 6-1/2       | 6     | NCC      | LONG        | 30850     | \$105.24    | \$139.33    |
| KQCL-48M       | 1-1/2          | 1-1/4          | 4              | 6-1/2       | 6     | NCC      | LONG        | 30860     | \$142.75    | \$182.39    |
| KQCL-64M       | 2              | 1-1/4          | 4              | 6-1/2       | 8     | NCC      | LONG        | 30872     | \$183.57    | \$242.83    |
| KQCL-264-4M    | 2              | 2*             | 4              | 7-3/4       | 8     | NCC      | LONG        | 30877     | \$205.96    | \$275.41    |
| KQCL-264-6M    | 2              | 2*             | 6              | 9-3/4       | 8     | NCC      | LONG        | 30880     | \$254.62    | \$348.58    |
| KQCL-264-8M    | 2              | 2*             | 8              | 11-3/4      | 8     | NCC      | LONG        | 30882     | \$380.08    | \$510.82    |
| KQCL-80-4M     | 2-1/2          | 2*             | 4              | 7-5/8       | 8     | NCC      | LONG        | 30885     | \$349.39    | \$500.54    |
| KQCL-80-6M     | 2-1/2          | 2*             | 6              | 9-5/8       | 8     | NCC      | LONG        | 30887     | \$465.90    | \$690.59    |
| KQCL-96-4M     | 3              | 2-1/2*         | 4              | 7-5/8       | 10    | NCC      | LONG        | 30895     | \$656.75    | \$807.89    |
| KQCL-96-6M     | 3              | 2-1/2*         | 6              | 9-5/8       | 10    | NCC      | LONG        | 30896     | \$781.58    | \$1,006.27  |
| KQCL-96-8M     | 3              | 2-1/2*         | 8              | 11-5/8      | 10    | NCC      | LONG        | 30897     | \$943.93    | \$1,229.92  |



## Coarse Pitch Knuckle Non C/C M-42 Cobalt

O.D  
Tolerance  
+.003-.000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TiAlN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| KQCX-32M6      | 1              | 1              | 6              | 8-1/2       | 6     | NCC      | X-LONG      | 30840     | \$111.13    | \$140.85    |
| KQCX-32M5      | 1              | 1              | 6              | 8-1/2       | 5     | NCC      | X-LONG      | 30841     | \$99.24     | \$128.96    |
| KQCX-40M       | 1-1/4          | 1-1/4          | 6              | 8-1/2       | 6     | NCC      | X-LONG      | 30852     | \$145.88    | \$188.75    |
| KQCX-48-5M     | 1-1/2          | 1-1/4          | 5              | 7-1/2       | 6     | NCC      | X-LONG      | 30862     | \$168.71    | \$213.26    |
| KQCX-48-6M     | 1-1/2          | 1-1/4          | 6              | 8-1/2       | 6     | NCC      | X-LONG      | 30864     | \$209.71    | \$258.52    |
| KQCX-48-8M     | 1-1/2          | 1-1/4          | 8              | 10-1/2      | 6     | NCC      | X-LONG      | 30865     | \$236.77    | \$291.95    |
| KQCX-264-10M   | 2              | 2*             | 10             | 13-3/4      | 8     | NCC      | X-LONG      | 30883     | \$452.27    | \$615.68    |
| KQCX-264-12M   | 2              | 2*             | 12             | 15-3/4      | 8     | NCC      | X-LONG      | 30884     | \$539.66    | \$784.78    |
| KQCX-80-8M     | 2-1/2          | 2*             | 8              | 11-5/8      | 8     | NCC      | X-LONG      | 30890     | \$539.10    | \$825.08    |
| KQCX-80-10M    | 2-1/2          | 2*             | 10             | 13-5/8      | 8     | NCC      | X-LONG      | 30892     | \$634.43    | \$969.43    |
| KQCX-80-12M    | 2-1/2          | 2*             | 12             | 15-5/8      | 8     | NCC      | X-LONG      | 30894     | \$761.02    | \$1,149.14  |
| KQCX-96-10M    | 3              | 2-1/2*         | 10             | 13-5/8      | 10    | NCC      | X-LONG      | 30898     | \$1,052.05  | \$1,387.06  |
| KQCX-96-12M    | 3              | 2-1/2*         | 12             | 15-5/8      | 10    | NCC      | X-LONG      | 30899     | \$1,085.00  | \$1,475.28  |

## Coarse Pitch Knuckle Non C/C M-7 HSS

O.D  
Tolerance  
+.003-.000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TiN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-----------|
| KQC-8          | 1/4            | 3/8            | 5/8            | 2-1/2       | 3     | NCC      | REG         | 30706     | \$20.18     | \$23.33   |
| KQC-10         | 5/16           | 3/8            | 3/4            | 2-1/2       | 3     | NCC      | REG         | 30709     | \$21.17     | \$24.34   |
| KQC-12         | 3/8            | 3/8            | 3/4            | 2-1/2       | 4     | NCC      | REG         | 30711     | \$14.16     | \$17.32   |
| KQC-14         | 7/16           | 1/2            | 1              | 2-11/16     | 4     | NCC      | REG         | 30712     | \$23.18     | \$26.71   |
| KQC-16         | 1/2            | 1/2            | 1-1/4          | 3-1/4       | 4     | NCC      | REG         | 30714     | \$20.42     | \$24.25   |
| KQC-20         | 5/8            | 5/8            | 1-5/8          | 3-3/4       | 4     | NCC      | REG         | 30719     | \$26.18     | \$31.87   |
| KQC-24         | 3/4            | 3/4            | 1-5/8          | 3-7/8       | 4     | NCC      | REG         | 30724     | \$29.69     | \$38.18   |
| KQC-28         | 7/8            | 3/4            | 1-7/8          | 4-1/8       | 4     | NCC      | REG         | 30729     | \$34.95     | \$46.55   |
| KQC-32Z-5      | 1              | 3/4            | 1-1/8          | 3-5/8       | 5     | NCC      | STUB        | 30732     | \$42.73     | \$54.17   |
| KQC-32-5       | 1              | 1              | 2              | 4-1/2       | 5     | NCC      | REG         | 30733     | \$44.97     | \$56.85   |
| KQC-32-6       | 1              | 1              | 2              | 4-1/2       | 6     | NCC      | REG         | 30734     | \$49.49     | \$61.37   |
| KQC-32Z-6      | 1              | 3/4            | 1-1/8          | 3-5/8       | 6     | NCC      | STUB        | 30735     | \$46.98     | \$58.44   |
| KQC-36         | 1-1/8          | 1              | 2              | 4-1/2       | 6     | NCC      | REG         | 30744     | \$62.02     | \$77.23   |
| KQC-36Z        | 1-1/8          | 3/4            | 1-1/8          | 3-5/8       | 6     | NCC      | STUB        | 30745     | \$56.13     | \$69.78   |
| KQC-40         | 1-1/4          | 1-1/4          | 2              | 4-1/2       | 6     | NCC      | REG         | 30746     | \$62.64     | \$77.86   |
| KQC-40Z        | 1-1/4          | 3/4            | 1-1/8          | 3-5/8       | 6     | NCC      | STUB        | 30747     | \$59.64     | \$73.29   |
| KQC-48         | 1-1/2          | 1-1/4          | 2              | 4-1/2       | 6     | NCC      | REG         | 30756     | \$84.31     | \$102.52  |
| KQC-48Z        | 1-1/2          | 3/4            | 1-1/8          | 3-5/8       | 6     | NCC      | STUB        | 30757     | \$76.47     | \$93.05   |
| KQC-64         | 2              | 1-1/4          | 2              | 4-1/2       | 8     | NCC      | REG         | 30769     | \$114.77    | \$142.19  |
| KQC-64Z        | 2              | 3/4            | 1-1/8          | 3-5/8       | 8     | NCC      | STUB        | 30770     | \$103.66    | \$128.17  |
| KQC-264-2      | 2              | 2*             | 2              | 5-3/4       | 8     | NCC      | REG         | 30776     | \$140.91    | \$171.26  |
| KQCM-32-6      | 1              | 1              | 3              | 5-1/2       | 6     | NCC      | MED         | 30736     | \$55.13     | \$68.10   |
| KQCM-32-5      | 1              | 1              | 3              | 5-1/2       | 5     | NCC      | MED         | 30737     | \$50.12     | \$63.09   |
| KQCM-40        | 1-1/4          | 1-1/4          | 3              | 5-1/2       | 6     | NCC      | MED         | 30749     | \$75.42     | \$92.22   |
| KQCM-48        | 1-1/2          | 1-1/4          | 3              | 5-1/2       | 6     | NCC      | MED         | 30759     | \$94.77     | \$114.62  |
| KQCM-64        | 2              | 1-1/4          | 3              | 5-1/2       | 8     | NCC      | MED         | 30771     | \$126.66    | \$157.02  |

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## Coarse Pitch Knuckle Non C/C M-7 HSS

O.D  
Tolerance  
+.003-.000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-----------|
| KQCL-14        | 7/16           | 1/2            | 1-3/4          | 3-3/4       | 4     | NCC      | LONG        | 30713     | \$28.95     | \$32.78   |
| KQCL-16        | 1/2            | 1/2            | 2              | 4           | 4     | NCC      | LONG        | 30716     | \$27.32     | \$33.04   |
| KQCL-20        | 5/8            | 5/8            | 2-1/2          | 4-5/8       | 4     | NCC      | LONG        | 30721     | \$32.95     | \$40.12   |
| KQCL-24        | 3/4            | 3/4            | 3              | 5-1/4       | 4     | NCC      | LONG        | 30726     | \$38.21     | \$47.74   |
| KQCL-28        | 7/8            | 7/8            | 3-1/2          | 5-1/4       | 4     | NCC      | LONG        | 30731     | \$48.73     | \$61.02   |
| KQCL-32-6      | 1              | 1              | 4              | 6-1/2       | 6     | NCC      | LONG        | 30739     | \$63.52     | \$78.29   |
| KQCL-32-5      | 1              | 1              | 4              | 6-1/2       | 5     | NCC      | LONG        | 30740     | \$57.76     | \$72.53   |
| KQCL-40        | 1-1/4          | 1-1/4          | 4              | 6-1/2       | 6     | NCC      | LONG        | 30751     | \$83.19     | \$102.68  |
| KQCL-48        | 1-1/2          | 1-1/4          | 4              | 6-1/2       | 6     | NCC      | LONG        | 30761     | \$107.84    | \$130.49  |
| KQCL-64        | 2              | 1-1/4          | 4              | 6-1/2       | 8     | NCC      | LONG        | 30774     | \$139.34    | \$173.21  |
| KQCL-264-4     | 2              | 2*             | 4              | 7-3/4       | 8     | NCC      | LONG        | 30779     | \$140.91    | \$180.59  |
| KQCL-264-6     | 2              | 2*             | 6              | 9-3/4       | 8     | NCC      | LONG        | 30781     | \$173.85    | \$227.54  |
| KQCL-264-8     | 2              | 2*             | 8              | 11-3/4      | 8     | NCC      | LONG        | 30784     | \$341.02    | \$415.73  |
| KQCL-80-4      | 2-1/2          | 2*             | 4              | 7-5/8       | 8     | NCC      | LONG        | 30786     | \$289.13    | \$375.52  |
| KQCL-80-6      | 2-1/2          | 2*             | 6              | 9-5/8       | 8     | NCC      | LONG        | 30789     | \$358.81    | \$487.20  |
| KQCX-32-6      | 1              | 1              | 6              | 8-1/2       | 6     | NCC      | X-LONG      | 30741     | \$87.83     | \$104.80  |
| KQCX-32-5      | 1              | 1              | 6              | 8-1/2       | 5     | NCC      | X-LONG      | 30742     | \$79.81     | \$96.79   |
| KQCX-40        | 1-1/4          | 1-1/4          | 6              | 8-1/2       | 6     | NCC      | X-LONG      | 30754     | \$121.40    | \$145.90  |
| KQCX-48-5      | 1-1/2          | 1-1/4          | 5              | 7-1/2       | 6     | NCC      | X-LONG      | 30764     | \$116.33    | \$141.80  |
| KQCX-48-8      | 1-1/2          | 1-1/4          | 8              | 10-1/2      | 6     | NCC      | X-LONG      | 30766     | \$161.69    | \$193.22  |
| KQCX-80-8      | 2-1/2          | 2*             | 8              | 11-5/8      | 8     | NCC      | X-LONG      | 30791     | \$431.49    | \$594.90  |
| KQCX-80-10     | 2-1/2          | 2*             | 10             | 13-5/8      | 8     | NCC      | X-LONG      | 30794     | \$520.24    | \$711.67  |

## Fine Pitch Knuckle Ball End M-42 Cobalt

O.D  
Tolerance  
+.003-.000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TiAlN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| RFKQC-8M       | 1/4            | 3/8            | 5/8            | 2-1/2       | 3     | BAL      | REG         | 36807     | \$31.57     | \$35.00     |
| RFKQC-10M      | 5/16           | 3/8            | 3/4            | 2-1/2       | 3     | BAL      | REG         | 36810     | \$31.57     | \$37.10     |
| RFKQC-12M      | 3/8            | 3/8            | 3/4            | 2-1/2       | 4     | BAL      | REG         | 36812     | \$31.57     | \$37.10     |
| RFKQC-14M      | 7/16           | 1/2            | 1              | 2-11/16     | 4     | BAL      | REG         | 36813     | \$46.11     | \$52.29     |
| RFKQC-16M      | 1/2            | 1/2            | 1-1/4          | 3-1/4       | 4     | BAL      | REG         | 36815     | \$41.08     | \$47.80     |
| RFKQC-20M      | 5/8            | 5/8            | 1-5/8          | 3-3/4       | 4     | BAL      | REG         | 36820     | \$50.12     | \$60.06     |
| RFKQC-24M      | 3/4            | 3/4            | 1-5/8          | 3-7/8       | 4     | BAL      | REG         | 36825     | \$54.13     | \$68.97     |
| RFKQC-28YM     | 7/8            | 7/8            | 1-7/8          | 4-1/8       | 5     | BAL      | REG         | 36828     | \$79.62     | \$99.90     |
| RFKQC-32M6     | 1              | 1              | 2              | 4-1/2       | 6     | BAL      | REG         | 36833     | \$79.64     | \$100.42    |
| RFKQC-40M      | 1-1/4          | 1-1/4          | 2              | 4-1/2       | 6     | BAL      | REG         | 36847     | \$99.24     | \$125.87    |
| RFKQC-48M      | 1-1/2          | 1-1/4          | 2              | 4-1/2       | 6     | BAL      | REG         | 36858     | \$130.33    | \$162.21    |
| RFKQCL-32M6    | 1              | 1              | 4              | 6-1/2       | 6     | BAL      | LONG        | 36838     | \$107.75    | \$133.60    |
| RFKQCL-40M     | 1-1/4          | 1-1/4          | 4              | 6-1/2       | 6     | BAL      | LONG        | 36853     | \$173.09    | \$207.17    |
| RFKQCL-48M     | 1-1/2          | 1-1/4          | 4              | 6-1/2       | 6     | BAL      | LONG        | 36862     | \$232.87    | \$272.51    |

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## Coarse Pitch Knuckle Ball End M-42 Cobalt

O.D.  
Tolerance  
+.003-.000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIALN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| RKQC-8M        | 1/4            | 3/8            | 5/8            | 2-1/2       | 3     | BAL      | REG         | 37307     | \$31.57     | \$37.10     |
| RKQC-10M       | 5/16           | 3/8            | 3/4            | 2-1/2       | 3     | BAL      | REG         | 37310     | \$31.57     | \$37.10     |
| RKQC-12M       | 3/8            | 3/8            | 3/4            | 2-1/2       | 4     | BAL      | REG         | 37312     | \$31.57     | \$37.10     |
| RKQC-14M       | 7/16           | 1/2            | 1              | 2-11/16     | 4     | BAL      | REG         | 37313     | \$46.11     | \$52.29     |
| RKQC-16M       | 1/2            | 1/2            | 1-1/4          | 3-1/4       | 4     | BAL      | REG         | 37315     | \$41.08     | \$47.80     |
| RKQC-20M       | 5/8            | 5/8            | 1-5/8          | 3-3/4       | 4     | BAL      | REG         | 37320     | \$50.12     | \$60.06     |
| RKQC-24M       | 3/4            | 3/4            | 1-5/8          | 3-7/8       | 4     | BAL      | REG         | 37325     | \$54.13     | \$68.97     |
| RKQC-28YM      | 7/8            | 7/8            | 1-7/8          | 4-1/8       | 4     | BAL      | REG         | 37328     | \$79.62     | \$99.90     |
| RKQC-32M6      | 1              | 1              | 2              | 4-1/2       | 6     | BAL      | REG         | 37333     | \$79.64     | \$100.42    |
| RKQC-40M       | 1-1/4          | 1-1/4          | 2              | 4-1/2       | 6     | BAL      | REG         | 37347     | \$99.24     | \$125.87    |
| RKQC-48M       | 1-1/2          | 1-1/4          | 2              | 4-1/2       | 6     | BAL      | REG         | 37358     | \$130.33    | \$162.21    |
| RKQCL-32M6     | 1              | 1              | 4              | 6-1/2       | 6     | BAL      | LONG        | 37338     | \$107.75    | \$133.60    |
| RKQCL-40M      | 1-1/4          | 1-1/4          | 4              | 6-1/2       | 6     | BAL      | LONG        | 37353     | \$173.09    | \$207.17    |
| RKQCL-48M      | 1-1/2          | 1-1/4          | 4              | 6-1/2       | 6     | BAL      | LONG        | 37362     | \$232.87    | \$272.51    |

## Rough & Finish "Truncated" Non C/C M-42 Cobalt

O.D.  
Tolerance  
+.003-.000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIALN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| TQC-8M         | 1/4            | 3/8            | 5/8            | 2-1/2       | 3     | NCC      | REG         | 56304     | \$19.50     | \$25.03     |
| TQC-10M #      | 5/16           | 3/8            | 3/4            | 2-1/2       | 3     | NCC      | REG         | 56306     | \$19.50     | \$25.04     |
| TQC-12M        | 3/8            | 3/8            | 3/4            | 2-1/2       | 4     | NCC      | REG         | 56309     | \$19.50     | \$25.03     |
| TQC-14M #      | 7/16           | 1/2            | 1              | 2-11/16     | 4     | NCC      | REG         | 56310     | \$28.90     | \$35.09     |
| TQC-16M        | 1/2            | 1/2            | 1-1/4          | 3-1/4       | 4     | NCC      | REG         | 56311     | \$25.60     | \$32.31     |
| TQC-20M        | 5/8            | 5/8            | 1-5/8          | 3-3/4       | 4     | NCC      | REG         | 56316     | \$31.06     | \$40.99     |
| TQC-24M        | 3/4            | 3/4            | 1-5/8          | 3-7/8       | 4     | NCC      | REG         | 56320     | \$35.62     | \$50.46     |
| TQC-28M        | 7/8            | 3/4            | 1-7/8          | 4-1/8       | 4     | NCC      | REG         | 56325     | \$51.11     | \$71.39     |
| TQC-32M6       | 1              | 1              | 2              | 4-1/2       | 6     | NCC      | REG         | 56330     | \$59.95     | \$80.73     |
| TQC-32M5       | 1              | 1              | 2              | 4-1/2       | 5     | NCC      | REG         | 56331     | \$53.61     | \$74.38     |
| TQC-36M        | 1-1/8          | 1              | 2              | 4-1/2       | 6     | NCC      | REG         | 56340     | \$77.94     | \$104.57    |
| TQC-40M        | 1-1/4          | 1-1/4          | 2              | 4-1/2       | 6     | NCC      | REG         | 56342     | \$71.15     | \$97.77     |
| TQC-48M        | 1-1/2          | 1-1/4          | 2              | 4-1/2       | 6     | NCC      | REG         | 56352     | \$99.34     | \$131.21    |
| TQC-64M        | 2              | 1-1/4          | 2              | 4-1/2       | 8     | NCC      | REG         | 56365     | \$149.58    | \$197.57    |
| TQC-264-2M #   | 2              | 2*             | 2              | 5-3/4       | 8     | NCC      | REG         | 56372     | \$166.75    | \$219.86    |
| TQCM-24M       | 3/4            | 3/4            | 3              | 5-1/4       | 4     | NCC      | MED         | 56323     | \$46.62     | \$63.27     |
| TQCM-32M6      | 1              | 1              | 3              | 5-1/2       | 6     | NCC      | MED         | 56332     | \$78.06     | \$100.77    |
| TQCM-32M5      | 1              | 1              | 3              | 5-1/2       | 5     | NCC      | MED         | 56333     | \$68.65     | \$91.37     |
| TQCM-40M       | 1-1/4          | 1-1/4          | 3              | 5-1/2       | 6     | NCC      | MED         | 56345     | \$93.71     | \$123.10    |
| TQCM-48M       | 1-1/2          | 1-1/4          | 3              | 5-1/2       | 6     | NCC      | MED         | 56355     | \$128.10    | \$162.84    |
| TQCM-64M       | 2              | 1-1/4          | 3              | 5-1/2       | 8     | NCC      | MED         | 56367     | \$170.06    | \$223.16    |

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PROUD TO BE MADE IN THE U.S.A.



## Rough & Finish "Truncated" Non C/C M-42 Cobalt

O.D  
Tolerance  
+.003-.000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIALN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| TQCL-14M #     | 7/16           | 1/2            | 1-3/4          | 3-3/4       | 4     | NCC      | LONG        | 56312     | \$41.21     | \$47.94     |
| TQCL-16M       | 1/2            | 1/2            | 2              | 4           | 4     | NCC      | LONG        | 56313     | \$34.09     | \$44.10     |
| TQCL-20M       | 5/8            | 5/8            | 2-1/2          | 4-5/8       | 4     | NCC      | LONG        | 56318     | \$40.09     | \$52.62     |
| TQCL-28M #     | 7/8            | 7/8            | 3-1/2          | 5-1/4       | 4     | NCC      | LONG        | 56327     | \$65.41     | \$86.92     |
| TQCL-32M6      | 1              | 1              | 4              | 6-1/2       | 6     | NCC      | LONG        | 56335     | \$81.19     | \$107.04    |
| TQCL-32M5      | 1              | 1              | 4              | 6-1/2       | 5     | NCC      | LONG        | 56336     | \$72.67     | \$98.52     |
| TQCL-40M       | 1-1/4          | 1-1/4          | 4              | 6-1/2       | 6     | NCC      | LONG        | 56347     | \$105.24    | \$139.33    |
| TQCL-48M       | 1-1/2          | 1-1/4          | 4              | 6-1/2       | 6     | NCC      | LONG        | 56357     | \$142.75    | \$182.39    |
| TQCL-64M       | 2              | 1-1/4          | 4              | 6-1/2       | 8     | NCC      | LONG        | 56370     | \$183.57    | \$242.83    |
| TQCL-264-6M #  | 2              | 2*             | 6              | 9-3/4       | 8     | NCC      | LONG        | 56377     | \$254.62    | \$348.58    |
| TQCL-80-4M #   | 2-1/2          | 2*             | 4              | 7-5/8       | 8     | NCC      | LONG        | 56382     | \$349.39    | \$500.54    |
| TQCL-80-6M     | 2-1/2          | 2*             | 6              | 9-3/8       | 8     | NCC      | LONG        | 56385     | \$465.90    | \$690.59    |
| TQCX-32M6      | 1              | 1              | 6              | 8-1/2       | 6     | NCC      | X-LONG      | 56337     | \$111.13    | \$140.85    |
| TQCX-32M5      | 1              | 1              | 6              | 8-1/2       | 5     | NCC      | X-LONG      | 56338     | \$99.24     | \$128.96    |
| TQCX-40M       | 1-1/4          | 1-1/4          | 6              | 8-1/2       | 6     | NCC      | X-LONG      | 56350     | \$145.88    | \$188.75    |
| TQCX-48-5M #   | 1-1/2          | 1-1/4          | 5              | 7-1/2       | 6     | NCC      | X-LONG      | 56360     | \$168.71    | \$213.26    |
| TQCX-48-8M #   | 1-1/2          | 1-1/4          | 8              | 10-1/2      | 6     | NCC      | X-LONG      | 56362     | \$236.77    | \$291.95    |
| TQCX-80-8M #   | 2-1/2          | 2*             | 8              | 11-5/8      | 8     | NCC      | X-LONG      | 56387     | \$539.10    | \$825.08    |
| TQCX-80-10M #  | 2-1/2          | 2*             | 10             | 13-5/8      | 8     | NCC      | X-LONG      | 56390     | \$634.43    | \$969.43    |

# To Be Discontinued when stock is depleted

## 2 FLUTE ALUMINUM 37° HELIX M-7 HSS

O.D  
Tolerance  
+.0015-.000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIALN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| A-6            | 3/16           | 3/8            | 5/8            | 2-1/2       | 2     | CC       | REG         | 10503     | \$11.03     | \$15.76     |
| A-8            | 1/4            | 3/8            | 5/8            | 2-1/2       | 2     | CC       | REG         | 10505     | \$11.03     | \$15.76     |
| A-12           | 3/8            | 3/8            | 3/4            | 2-1/2       | 2     | CC       | REG         | 10515     | \$11.03     | \$15.76     |
| A-14           | 7/16           | 3/8            | 1              | 2-11/16     | 2     | CC       | REG         | 10520     | \$14.28     | \$19.59     |
| A-16           | 1/2            | 1/2            | 1-1/4          | 3-1/4       | 2     | CC       | REG         | 10525     | \$15.41     | \$21.17     |
| A-20           | 5/8            | 5/8            | 1-5/8          | 3-3/4       | 2     | CC       | REG         | 10530     | \$20.42     | \$28.95     |
| A-24           | 3/4            | 3/4            | 1-5/8          | 3-7/8       | 2     | CC       | REG         | 10540     | \$22.93     | \$35.65     |
| A-32           | 1              | 1              | 2              | 4-1/2       | 2     | CC       | REG         | 10560     | \$37.96     | \$55.76     |
| A-32X          | 1              | 3/4            | 1-7/8          | 4-1/8       | 2     | CC       | REG         | 10565     | \$40.72     | \$58.52     |
| A-48           | 1-1/2          | 1-1/4          | 2              | 4-1/2       | 2     | CC       | REG         | 10575     | \$75.02     | \$102.35    |
| A-264-3        | 2              | 2*             | 3              | 6-3/4       | 2     | CC       | REG         | 10588     | \$205.08    | \$255.89    |
| A-264-4        | 2              | 2*             | 4              | 7-3/4       | 2     | CC       | REG         | 10590     | \$205.08    | \$264.62    |
| AL-8           | 1/4            | 3/8            | 1-1/4          | 3-1/8       | 2     | CC       | LONG        | 12006     | \$13.16     | \$17.89     |
| AL-12          | 3/8            | 3/8            | 1-1/2          | 3-1/4       | 2     | CC       | LONG        | 12016     | \$13.16     | \$17.89     |
| AL-16          | 1/2            | 1/2            | 2              | 4           | 2     | CC       | LONG        | 12026     | \$18.41     | \$27.00     |
| AL-20          | 5/8            | 5/8            | 2-1/2          | 4-5/8       | 2     | CC       | LONG        | 12031     | \$24.56     | \$35.29     |
| AL-24          | 3/4            | 3/4            | 3              | 5-1/4       | 2     | CC       | LONG        | 12036     | \$32.20     | \$46.47     |
| AL-32          | 1              | 1              | 4              | 6-1/2       | 2     | CC       | LONG        | 12046     | \$54.88     | \$77.03     |
| AL-32A         | 1              | 1              | 3              | 5-1/2       | 2     | CC       | LONG        | 12051     | \$48.99     | \$68.46     |
| AL-40          | 1-1/4          | 1-1/4          | 4              | 6-1/2       | 2     | CC       | LONG        | 12056     | \$78.30     | \$107.52    |
| AL-48          | 1-1/2          | 1-1/4          | 4              | 6-1/2       | 2     | CC       | LONG        | 12066     | \$103.66    | \$137.64    |
| AL-64          | 2              | 1-1/4          | 4              | 6-1/2       | 2     | CC       | LONG        | 12076     | \$167.05    | \$217.85    |
| AL-264-6       | 2              | 2*             | 6              | 9-3/4       | 2     | CC       | LONG        | 12082     | \$250.31    | \$330.86    |

\* Sure-Lock Combination Shank

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PROUD TO BE MADE IN THE U.S.A.



## 2 FLUTE ALUMINUM 37° HELIX M-7 HSS

O.D  
Tolerance  
+.0015-.000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIALN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| AX-8           | 1/4            | 3/8            | 1-3/4          | 3-9/16      | 2     | CC       | X-LONG      | 13509     | \$14.54     | \$19.27     |
| AX-12          | 3/8            | 3/8            | 2-1/2          | 4-1/4       | 2     | CC       | X-LONG      | 13519     | \$15.91     | \$22.30     |
| AX-16          | 1/2            | 1/2            | 3              | 5           | 2     | CC       | X-LONG      | 13529     | \$21.55     | \$31.97     |
| AX-20          | 5/8            | 5/8            | 4              | 6-1/8       | 2     | CC       | X-LONG      | 13534     | \$30.94     | \$45.04     |
| AX-24          | 3/4            | 3/4            | 4              | 6-1/4       | 2     | CC       | X-LONG      | 13539     | \$38.34     | \$55.75     |
| AX-32          | 1              | 1              | 6              | 8-1/2       | 2     | CC       | X-LONG      | 13549     | \$67.28     | \$92.75     |
| AX-40          | 1-1/4          | 1-1/4          | 6              | 8-1/2       | 2     | CC       | X-LONG      | 13554     | \$98.48     | \$135.23    |
| AX-48X         | 1-1/2          | 1-1/4          | 6              | 8-1/2       | 2     | CC       | X-LONG      | 13559     | \$125.48    | \$167.32    |
| AX-48          | 1-1/2          | 1-1/4          | 8              | 10-1/2      | 2     | CC       | X-LONG      | 13564     | \$145.35    | \$192.64    |

## 2 FLUTE ALUMINUM 37° HELIX M-7 HSS

O.D  
Tolerance  
+.0015-.000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIALN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| AR-8           | 1/4            | 3/8            | 5/8            | 2-1/2       | 2     | BAL      | REG         | 13008     | \$17.92     | \$22.65     |
| AR-16          | 1/2            | 1/2            | 1-1/4          | 3-1/4       | 2     | BAL      | REG         | 13028     | \$26.69     | \$32.44     |
| AR-24          | 3/4            | 3/4            | 1-5/8          | 3-7/8       | 2     | BAL      | REG         | 13043     | \$41.21     | \$53.93     |
| AR-32          | 1              | 1              | 2              | 4-1/2       | 2     | BAL      | REG         | 13063     | \$61.89     | \$79.70     |
| AR-56          | 1-3/4          | 1-1/4          | 2              | 4-1/2       | 2     | BAL      | REG         | 13083     | \$110.45    | \$144.77    |
| ALR-8          | 1/4            | 3/8            | 1-1/4          | 3-1/8       | 2     | BAL      | LONG        | 12507     | \$23.43     | \$28.17     |
| ALR-12         | 3/8            | 3/8            | 1-1/2          | 3-1/4       | 2     | BAL      | LONG        | 12517     | \$24.43     | \$29.17     |
| ALR-16         | 1/2            | 1/2            | 2              | 4           | 2     | BAL      | LONG        | 12527     | \$33.45     | \$42.03     |
| ALR-20         | 5/8            | 5/8            | 2-1/2          | 4-5/8       | 2     | BAL      | LONG        | 12532     | \$45.73     | \$56.46     |
| ALR-24         | 3/4            | 3/4            | 3              | 5-1/4       | 2     | BAL      | LONG        | 12537     | \$57.14     | \$71.40     |
| ALR-32         | 1              | 1              | 4              | 6-1/2       | 2     | BAL      | LONG        | 12547     | \$87.07     | \$109.22    |
| ALR-48         | 1-1/2          | 1-1/4          | 4              | 6-1/2       | 2     | BAL      | LONG        | 12557     | \$130.45    | \$164.44    |
| ALR-64         | 2              | 1-1/4          | 4              | 6-1/2       | 2     | BAL      | LONG        | 12567     | \$204.70    | \$255.49    |
| AXR-8          | 1/4            | 3/8            | 1-3/4          | 3-9/16      | 2     | BAL      | X-LONG      | 14011     | \$25.81     | \$30.54     |
| AXR-12         | 3/8            | 3/8            | 2-1/2          | 4-1/4       | 2     | BAL      | X-LONG      | 14021     | \$27.43     | \$33.83     |
| AXR-16         | 1/2            | 1/2            | 3              | 5           | 2     | BAL      | X-LONG      | 14031     | \$38.34     | \$48.77     |
| AXR-24         | 3/4            | 3/4            | 4              | 6-1/4       | 2     | BAL      | X-LONG      | 14041     | \$64.90     | \$82.31     |
| AXR-32         | 1              | 1              | 6              | 8-1/2       | 2     | BAL      | X-LONG      | 14051     | \$95.98     | \$121.45    |
| AXR-40         | 1-1/4          | 1-1/4          | 6              | 8-1/2       | 2     | BAL      | X-LONG      | 14056     | \$113.52    | \$150.26    |
| AXR-48         | 1-1/2          | 1-1/4          | 8              | 10-1/2      | 2     | BAL      | X-LONG      | 14061     | \$165.22    | \$212.51    |
| AXR-48X        | 1-1/2          | 1-1/4          | 6              | 8-1/2       | 2     | BAL      | X-LONG      | 14066     | \$155.41    | \$197.25    |

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PROUD TO BE MADE IN THE U.S.A.



## 2 FLUTE DOUBLE END M-42 COBALT

O.D  
Tolerance  
-.0015+.0000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIALN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| XC-4M          | 1/8            | 3/8            | 3/16           | 2-3/4       | 2     | CC       | STUB        | 58607     | \$14.28     | \$19.81     |
| XC-5M          | 5/32           | 3/8            | 15/64          | 2-3/4       | 2     | CC       | STUB        | 58613     | \$17.41     | \$22.94     |
| XC-6M          | 3/16           | 3/8            | 9/32           | 2-3/4       | 2     | CC       | STUB        | 58619     | \$14.28     | \$19.81     |
| XC-7M          | 7/32           | 3/8            | 21/32          | 2-7/8       | 2     | CC       | STUB        | 58625     | \$17.41     | \$22.94     |
| XC-8M          | 1/4            | 3/8            | 3/8            | 2-7/8       | 2     | CC       | STUB        | 58631     | \$14.28     | \$19.81     |
| DC-4M          | 1/8            | 3/8            | 3/8            | 3-1/16      | 2     | CC       | REG         | 18010     | \$14.02     | \$19.55     |
| DC-6M          | 3/16           | 3/8            | 7/16           | 3-1/8       | 2     | CC       | REG         | 18018     | \$14.02     | \$19.55     |
| DC-8M          | 1/4            | 3/8            | 1/2            | 3-1/8       | 2     | CC       | REG         | 18026     | \$14.02     | \$19.55     |
| DC-10M         | 5/16           | 3/8            | 9/16           | 3-1/8       | 2     | CC       | REG         | 18034     | \$14.02     | \$19.55     |
| DC-11M         | 11/32          | 3/8            | 9/16           | 3-1/8       | 2     | CC       | REG         | 18038     | \$16.33     | \$21.87     |
| DC-12M *       | 3/8            | 3/8            | 9/16           | 3-1/8       | 2     | CC       | REG         | 18042     | \$14.02     | \$19.55     |
| DC-13M         | 13/32          | 1/2            | 13/16          | 3-3/4       | 2     | CC       | REG         | 18046     | \$25.06     | \$31.77     |
| DC-16M *       | 1/2            | 1/2            | 13/16          | 3-3/4       | 2     | CC       | REG         | 18058     | \$21.07     | \$27.79     |
| DC-17M         | 17/32          | 5/8            | 1-1/8          | 4-1/2       | 2     | CC       | REG         | 18060     | \$33.48     | \$46.01     |
| DC-19M         | 19/32          | 5/8            | 1-1/8          | 4-1/2       | 2     | CC       | REG         | 18064     | \$33.48     | \$46.01     |
| DC-20M *       | 5/8            | 5/8            | 1-1/8          | 4-1/2       | 2     | CC       | REG         | 18066     | \$28.60     | \$41.13     |
| DC-22M         | 11/16          | 3/4            | 1-5/16         | 5           | 2     | CC       | REG         | 18070     | \$38.79     | \$55.45     |
| DC-24M *       | 3/4            | 3/4            | 1-5/16         | 5           | 2     | CC       | REG         | 18074     | \$37.11     | \$53.76     |
| DC-26M         | 13/16          | 7/8            | 1-9/16         | 5-1/2       | 2     | CC       | REG         | 18078     | \$46.57     | \$68.08     |

\* When cutting diameter and shank diameter are the same the tolerance is +.0000-.0025

## 2 FLUTE DOUBLE END M-7 HSS

O.D  
Tolerance  
+.0000-.0015



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIALN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| XC-4           | 1/8            | 3/8            | 3/16           | 2-3/4       | 2     | CC       | STUB        | 58505     | \$12.91     | \$16.06     |
| XC-5           | 5/32           | 3/8            | 15/64          | 2-3/4       | 2     | CC       | STUB        | 58511     | \$13.53     | \$16.69     |
| XC-6           | 3/16           | 3/8            | 9/32           | 2-3/4       | 2     | CC       | STUB        | 58517     | \$12.91     | \$16.06     |
| XC-7           | 7/32           | 3/8            | 21/32          | 2-7/8       | 2     | CC       | STUB        | 58523     | \$13.53     | \$16.69     |
| XC-8           | 1/4            | 3/8            | 3/8            | 2-7/8       | 2     | CC       | STUB        | 58529     | \$12.91     | \$16.06     |
| DC-2           | 1/16           | 3/8            | 7/32           | 3           | 2     | CC       | REG         | 17502     | \$15.16     | \$18.32     |
| DC-3           | 3/32           | 3/8            | 5/16           | 3-1/16      | 2     | CC       | REG         | 17505     | \$14.28     | \$17.45     |
| DC-4           | 1/8            | 3/8            | 3/8            | 3-1/16      | 2     | CC       | REG         | 17509     | \$12.78     | \$15.93     |
| DC-5           | 5/32           | 3/8            | 7/16           | 3-1/8       | 2     | CC       | REG         | 17513     | \$13.53     | \$16.69     |
| DC-6           | 3/16           | 3/8            | 7/16           | 3-1/8       | 2     | CC       | REG         | 17517     | \$12.78     | \$15.93     |
| DC-7           | 7/32           | 3/8            | 1/2            | 3-1/8       | 2     | CC       | REG         | 17521     | \$13.53     | \$16.69     |
| DC-8           | 1/4            | 3/8            | 1/2            | 3-1/8       | 2     | CC       | REG         | 17525     | \$13.03     | \$16.19     |
| DC-9           | 9/32           | 3/8            | 9/16           | 3-1/8       | 2     | CC       | REG         | 17529     | \$13.78     | \$16.94     |
| DC-10          | 5/16           | 3/8            | 9/16           | 3-1/8       | 2     | CC       | REG         | 17533     | \$12.78     | \$15.93     |
| DC-11          | 11/32          | 3/8            | 9/16           | 3-1/8       | 2     | CC       | REG         | 17537     | \$13.53     | \$16.69     |
| DC-12 *        | 3/8            | 3/8            | 9/16           | 3-1/8       | 2     | CC       | REG         | 17541     | \$13.03     | \$16.19     |
| DC-13          | 13/32          | 1/2            | 13/16          | 3-3/4       | 2     | CC       | REG         | 17545     | \$20.67     | \$24.50     |
| DC-14          | 7/16           | 1/2            | 13/16          | 3-3/4       | 2     | CC       | REG         | 17549     | \$19.67     | \$23.51     |
| DC-16 *        | 1/2            | 1/2            | 13/16          | 3-3/4       | 2     | CC       | REG         | 17557     | \$19.67     | \$23.51     |
| DC-17          | 17/32          | 5/8            | 1-1/8          | 4-1/2       | 2     | CC       | REG         | 17559     | \$30.70     | \$37.86     |
| DC-18          | 9/16           | 5/8            | 1-1/8          | 4-1/2       | 2     | CC       | REG         | 17561     | \$27.81     | \$34.99     |
| DC-20 *        | 5/8            | 5/8            | 1-1/8          | 4-1/2       | 2     | CC       | REG         | 17565     | \$27.19     | \$34.36     |
| DC-24 *        | 3/4            | 3/4            | 1-5/16         | 5           | 2     | CC       | REG         | 17573     | \$34.32     | \$43.85     |
| DC-28 *        | 7/8            | 7/8            | 1-9/16         | 5-1/2       | 2     | CC       | REG         | 17581     | \$43.22     | \$55.52     |
| DC-32 *        | 1              | 1              | 1-5/8          | 5-7/8       | 2     | CC       | REG         | 17589     | \$53.12     | \$67.89     |

\* When cutting diameter and shank diameter are the same the tolerance is +.0000-.0025



## 2 FLUTE HEAVY DUTY w/SURE-LOCK SHANK M-7 HSS

O.D  
Tolerance  
+.0015-.000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIALN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| PL-64-2        | 2              | 2*             | 2              | 5-3/4       | 2     | CC       | REG         | 31011     | \$126.79    | \$157.14    |
| PL-64-6        | 2              | 2*             | 6              | 9-3/4       | 2     | CC       | REG         | 31033     | \$181.04    | \$234.73    |
| PL-80-4        | 2-1/2          | 2*             | 4              | 7-5/8       | 2     | CC       | REG         | 31044     | \$265.48    | \$351.85    |
| PL-96-4        | 3              | 2-1/2*         | 4              | 7-5/8       | 2     | CC       | REG         | 31066     | \$355.14    | \$441.53    |
| PL-96-5        | 3              | 2-1/2*         | 5              | 8-5/8       | 2     | CC       | REG         | 31077     | \$412.26    | \$524.33    |
| PL-96-6        | 3              | 2-1/2*         | 6              | 9-5/8       | 2     | CC       | REG         | 31088     | \$457.24    | \$585.63    |

\*Heavy Duty Sure-Lok Shank

## 2 FLUTE "METRIC DIAMETER" FLUTES M-7 HSS

O.D  
Tolerance  
+.0015-.000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIALN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| MSG-3          | 3MM            | 3/8            | 3/8            | 2-5/16      | 2     | CC       | REG         | 31100     | \$9.89      | \$13.06     |
| MSG-4          | 4MM            | 3/8            | 7/16           | 2-5/16      | 2     | CC       | REG         | 31101     | \$9.89      | \$13.06     |
| MSG-5          | 5MM            | 3/8            | 1/2            | 2-5/16      | 2     | CC       | REG         | 31105     | \$10.90     | \$14.05     |
| MSG-6          | 6MM            | 3/8            | 1/2            | 2-5/16      | 2     | CC       | REG         | 31111     | \$10.90     | \$14.05     |
| MSG-7          | 7MM            | 3/8            | 9/16           | 2-5/16      | 2     | CC       | REG         | 31117     | \$10.90     | \$14.05     |
| MSG-8          | 8MM            | 3/8            | 9/16           | 2-5/16      | 2     | CC       | REG         | 31123     | \$10.90     | \$14.05     |
| MSG-9          | 9MM            | 3/8            | 9/16           | 2-5/16      | 2     | CC       | REG         | 31129     | \$10.90     | \$14.05     |
| MSG-10         | 10MM           | 3/8            | 13/16          | 2-1/2       | 2     | CC       | REG         | 31135     | \$13.16     | \$16.69     |
| MSG-11         | 11MM           | 3/8            | 13/16          | 2-1/2       | 2     | CC       | REG         | 31141     | \$15.79     | \$19.33     |
| MSG-12         | 12MM           | 1/2            | 1              | 3           | 2     | CC       | REG         | 31147     | \$16.67     | \$20.50     |
| MSG-13         | 13MM           | 1/2            | 1-1/8          | 3-1/8       | 2     | CC       | REG         | 31153     | \$19.42     | \$25.09     |
| MSG-14         | 14MM           | 1/2            | 1-1/8          | 3-1/8       | 2     | CC       | REG         | 31159     | \$19.42     | \$25.09     |
| MSG-15         | 15MM           | 1/2            | 1-1/8          | 3-1/8       | 2     | CC       | REG         | 31165     | \$20.67     | \$26.35     |
| MSG-16         | 16MM           | 1/2            | 1-5/16         | 3-5/16      | 2     | CC       | REG         | 31168     | \$22.06     | \$28.79     |
| MSG-17         | 17MM           | 5/8            | 1-5/16         | 3-7/16      | 2     | CC       | REG         | 31171     | \$23.56     | \$30.29     |
| MSG-18         | 18MM           | 1/2            | 1-5/16         | 3-5/16      | 2     | CC       | REG         | 31174     | \$24.56     | \$31.30     |
| MSG-20         | 20MM           | 3/4            | 1-1/2          | 3-3/4       | 2     | CC       | REG         | 31180     | \$29.44     | \$39.29     |

## 2 FLUTE SPIRAL FLUTE M-7 HSS

O.D  
Tolerance  
+.0000-.0015



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIALN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| SGS-8          | 1/4            | 1/4            | 3/8            | 1-7/16      | 2     | CC       | STUB        | 47014     | \$12.66     | \$14.61     |
| SGS-10         | 5/16           | 5/16           | 15/32          | 1-9/16      | 2     | CC       | STUB        | 47021     | \$14.54     | \$17.69     |
| SGS-16         | 1/2            | 1/2            | 3/4            | 2-1/16      | 2     | CC       | STUB        | 47042     | \$20.18     | \$23.71     |
| SGS-20         | 5/8            | 5/8            | 15/16          | 2-5/16      | 2     | CC       | STUB        | 47049     | \$24.43     | \$29.22     |

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## 2 FLUTE STANDARD M-42 COBALT

O.D  
Tolerance  
+.0015-.000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIALN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| SG-4M          | 1/8            | 3/8            | 3/8            | 2-5/16      | 2     | CC       | REG         | 45504     | \$9.86      | \$15.39     |
| SG-6M          | 3/16           | 3/8            | 3/8            | 2-5/16      | 2     | CC       | REG         | 45508     | \$9.86      | \$15.39     |
| SG-8M          | 1/4            | 3/8            | 1/2            | 2-5/16      | 2     | CC       | REG         | 45512     | \$9.86      | \$15.39     |
| SG-10M         | 5/16           | 3/8            | 9/16           | 2-5/16      | 2     | CC       | REG         | 45516     | \$9.86      | \$15.39     |
| SG-12M         | 3/8            | 3/8            | 9/16           | 2-5/16      | 2     | CC       | REG         | 45520     | \$9.86      | \$15.39     |
| SG-14M         | 7/16           | 3/8            | 13/16          | 2-1/2       | 2     | CC       | REG         | 45524     | \$15.07     | \$21.26     |
| SG-16M         | 1/2            | 1/2            | 1              | 3           | 2     | CC       | REG         | 45528     | \$13.24     | \$19.96     |
| SG-18M         | 9/16           | 1/2            | 1-1/8          | 3-1/8       | 2     | CC       | REG         | 45532     | \$20.97     | \$30.91     |
| SG-20M         | 5/8            | 5/8            | 1-5/16         | 3-7/16      | 2     | CC       | REG         | 45536     | \$20.79     | \$30.72     |
| SG-24M         | 3/4            | 3/4            | 1-5/16         | 3-9/16      | 2     | CC       | REG         | 45540     | \$22.52     | \$34.30     |
| SG-28M         | 7/8            | 7/8            | 1-1/2          | 3-3/4       | 2     | CC       | REG         | 45544     | \$31.03     | \$48.25     |
| SG-28YM        | 7/8            | 3/4            | 1-1/2          | 3-3/4       | 2     | CC       | REG         | 45546     | \$32.27     | \$49.49     |
| SG-32M         | 1              | 1              | 1-5/8          | 4-1/8       | 2     | CC       | REG         | 45548     | \$34.61     | \$55.37     |
| SG-32ZM        | 1              | 3/4            | 1-1/2          | 3-3/4       | 2     | CC       | REG         | 45549     | \$37.11     | \$57.15     |
| SG-40M         | 1-1/4          | 1-1/4          | 1-5/8          | 4-1/8       | 2     | CC       | REG         | 45552     | \$63.31     | \$89.94     |
| SG-40ZM        | 1-1/4          | 3/4            | 1-1/2          | 3-3/4       | 2     | CC       | REG         | 45554     | \$64.05     | \$87.95     |
| SG-48XM        | 1-1/2          | 1-1/4          | 1-5/8          | 4-1/8       | 2     | CC       | REG         | 45556     | \$84.70     | \$116.57    |
| SG-64M         | 2              | 1-1/4          | 1-5/8          | 4-1/8       | 2     | CC       | REG         | 45560     | \$112.93    | \$160.94    |

## 2 FLUTE STANDARD M-7 HSS

STUB  
Tolerance  
+.0000-.0015  
REG  
Tolerance  
+.0015-.0000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIALN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| XG-4           | 1/8            | 3/8            | 3/16           | 2-1/8       | 2     | CC       | STUB        | 60007     | \$9.27      | \$12.43     |
| XG-6           | 3/16           | 3/8            | 9/32           | 2-3/16      | 2     | CC       | STUB        | 60014     | \$9.27      | \$12.43     |
| XG-8           | 1/4            | 3/8            | 3/8            | 2-1/4       | 2     | CC       | STUB        | 60021     | \$9.27      | \$12.43     |
| SG-4           | 1/8            | 3/8            | 3/8            | 2-5/16      | 2     | CC       | REG         | 45003     | \$9.15      | \$12.30     |
| SG-5           | 5/32           | 3/8            | 7/16           | 2-5/16      | 2     | CC       | REG         | 45005     | \$9.15      | \$12.30     |
| SG-6           | 3/16           | 3/8            | 3/8            | 2-5/16      | 2     | CC       | REG         | 45007     | \$9.15      | \$12.30     |
| SG-6C          | 3/16           | 3/8            | 9/16           | 2-9/16      | 2     | CC       | REG         | 45107     | \$11.28     | \$14.43     |
| SG-7           | 7/32           | 3/8            | 1/2            | 2-5/16      | 2     | CC       | REG         | 45009     | \$10.40     | \$13.56     |
| SG-8           | 1/4            | 3/8            | 1/2            | 2-5/16      | 2     | CC       | REG         | 45011     | \$9.15      | \$12.30     |

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## 2 FLUTE STANDARD M-7 HSS



O.D  
Tolerance  
+.0015-.000

| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIALN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| SG-8C          | 1/4            | 3/8            | 9/16           | 2-9/16      | 2     | CC       | REG         | 45111     | \$10.52     | \$13.69     |
| SG-9           | 9/32           | 3/8            | 9/16           | 2-5/16      | 2     | CC       | REG         | 45013     | \$10.40     | \$13.56     |
| SG-10          | 5/16           | 3/8            | 9/16           | 2-5/16      | 2     | CC       | REG         | 45015     | \$9.15      | \$12.30     |
| SG-11          | 11/32          | 3/8            | 9/16           | 2-5/16      | 2     | CC       | REG         | 45017     | \$10.40     | \$13.56     |
| SG-12          | 3/8            | 3/8            | 9/16           | 2-5/16      | 2     | CC       | REG         | 45019     | \$9.15      | \$12.30     |
| SG-12C         | 3/8            | 3/8            | 9/16           | 2-9/16      | 2     | CC       | REG         | 45119     | \$10.52     | \$13.69     |
| SG-13          | 13/32          | 3/8            | 13/16          | 2-1/2       | 2     | CC       | REG         | 45021     | \$13.40     | \$16.94     |
| SG-14          | 7/16           | 3/8            | 13/16          | 2-1/2       | 2     | CC       | REG         | 45023     | \$12.91     | \$16.44     |
| SG-15          | 15/32          | 1/2            | 1              | 3           | 2     | CC       | REG         | 45025     | \$14.90     | \$18.75     |
| SG-16          | 1/2            | 1/2            | 1              | 3           | 2     | CC       | REG         | 45027     | \$12.91     | \$16.74     |
| SG-16C         | 1/2            | 5/8            | 1              | 3-1/8       | 2     | CC       | REG         | 45127     | \$21.05     | \$26.72     |
| SG-16X         | 1/2            | 3/8            | 13/16          | 2-1/2       | 2     | CC       | REG         | 45028     | \$13.40     | \$16.94     |
| SG-17          | 17/32          | 1/2            | 1-1/8          | 3-1/8       | 2     | CC       | REG         | 45030     | \$18.41     | \$24.09     |
| SG-18          | 9/16           | 1/2            | 1-1/8          | 3-1/8       | 2     | CC       | REG         | 45032     | \$16.16     | \$21.84     |
| SG-18C         | 9/16           | 5/8            | 1              | 3-1/8       | 2     | CC       | REG         | 45132     | \$22.80     | \$28.47     |
| SG-19          | 19/32          | 1/2            | 1-1/8          | 3-1/8       | 2     | CC       | REG         | 45034     | \$20.29     | \$25.97     |
| SG-20C         | 5/8            | 5/8            | 1              | 3-1/8       | 2     | CC       | REG         | 45136     | \$22.30     | \$27.98     |
| SG-20X         | 5/8            | 1/2            | 1-1/8          | 3-1/8       | 2     | CC       | REG         | 45037     | \$18.79     | \$24.47     |
| SG-22          | 11/16          | 5/8            | 1-5/16         | 3-7/16      | 2     | CC       | REG         | 45041     | \$19.42     | \$26.16     |
| SG-22X         | 11/16          | 1/2            | 1-5/16         | 3-5/16      | 2     | CC       | REG         | 45042     | \$19.42     | \$26.16     |
| SG-24          | 3/4            | 5/8            | 1-5/16         | 3-7/16      | 2     | CC       | REG         | 45046     | \$21.17     | \$27.92     |
| SG-24C         | 3/4            | 3/4            | 1              | 3-1/8       | 2     | CC       | REG         | 45146     | \$24.30     | \$31.05     |
| SG-24CC        | 3/4            | 5/8            | 1              | 3-1/8       | 2     | CC       | REG         | 45147     | \$26.06     | \$32.80     |
| SG-24X         | 3/4            | 1/2            | 1-5/16         | 3-5/16      | 2     | CC       | REG         | 45047     | \$21.17     | \$27.92     |
| SG-24Y         | 3/4            | 3/4            | 1-5/16         | 3-9/16      | 2     | CC       | REG         | 45048     | \$21.17     | \$27.92     |
| SG-25          | 25/32          | 1/2            | 1-1/2          | 3-1/2       | 2     | CC       | REG         | 45050     | \$28.69     | \$38.54     |
| SG-26          | 13/16          | 5/8            | 1-1/2          | 3-5/8       | 2     | CC       | REG         | 45052     | \$25.55     | \$35.41     |
| SG-26X         | 13/16          | 1/2            | 1-1/2          | 3-1/2       | 2     | CC       | REG         | 45053     | \$25.55     | \$35.41     |
| SG-26Y         | 13/16          | 3/4            | 1-1/2          | 3-3/4       | 2     | CC       | REG         | 45054     | \$25.55     | \$35.41     |
| SG-28          | 7/8            | 7/8            | 1-1/2          | 3-3/4       | 2     | CC       | REG         | 45057     | \$25.55     | \$35.41     |
| SG-28A         | 7/8            | 1/2            | 1-1/2          | 3-1/2       | 2     | CC       | REG         | 45058     | \$25.81     | \$35.66     |
| SG-28C         | 7/8            | 5/8            | 1              | 3-1/8       | 2     | CC       | REG         | 45159     | \$26.81     | \$36.66     |
| SG-28X         | 7/8            | 5/8            | 1-1/2          | 3-5/8       | 2     | CC       | REG         | 45059     | \$26.69     | \$36.53     |
| SG-28Y         | 7/8            | 3/4            | 1-1/2          | 3-3/4       | 2     | CC       | REG         | 45060     | \$26.69     | \$36.53     |
| SG-30          | 15/16          | 5/8            | 1-1/2          | 3-5/8       | 2     | CC       | REG         | 45064     | \$28.69     | \$40.14     |
| SG-31          | 31/32          | 1/2            | 1-1/2          | 3-1/2       | 2     | CC       | REG         | 45069     | \$33.20     | \$44.65     |
| SG-32          | 1              | 1              | 1-5/8          | 4-1/8       | 2     | CC       | REG         | 45071     | \$29.57     | \$41.44     |
| SG-32A         | 1              | 1/2            | 1-3/8          | 3-3/8       | 2     | CC       | REG         | 45072     | \$29.57     | \$41.01     |
| SG-32C         | 1              | 5/8            | 1              | 3-1/8       | 2     | CC       | REG         | 45172     | \$29.06     | \$40.52     |
| SG-32X         | 1              | 5/8            | 1-1/2          | 3-5/8       | 2     | CC       | REG         | 45073     | \$29.57     | \$41.01     |
| SG-32Z         | 1              | 3/4            | 1-1/2          | 3-3/4       | 2     | CC       | REG         | 45075     | \$33.33     | \$44.77     |
| SG-34          | 1-1/16         | 1              | 1-5/8          | 4-1/8       | 2     | CC       | REG         | 45076     | \$54.88     | \$70.09     |
| SG-34Z         | 1-1/16         | 3/4            | 1-1/2          | 3-3/4       | 2     | CC       | REG         | 45177     | \$54.88     | \$68.53     |
| SG-36          | 1-1/8          | 1              | 1-5/8          | 4-1/8       | 2     | CC       | REG         | 45077     | \$48.86     | \$64.07     |
| SG-36Z         | 1-1/8          | 3/4            | 1-1/2          | 3-3/4       | 2     | CC       | REG         | 45079     | \$47.99     | \$61.64     |
| SG-38          | 1-3/16         | 1              | 1-5/8          | 4-1/8       | 2     | CC       | REG         | 45080     | \$60.63     | \$75.85     |
| SG-38Z         | 1-3/16         | 3/4            | 1-5/8          | 3-7/8       | 2     | CC       | REG         | 45181     | \$60.63     | \$75.85     |
| SG-40          | 1-1/4          | 1              | 1-5/8          | 4-1/8       | 2     | CC       | REG         | 45081     | \$53.50     | \$68.71     |
| SG-40C         | 1-1/4          | 5/8            | 1              | 3-1/8       | 2     | CC       | REG         | 45182     | \$45.98     | \$59.64     |
| SG-40X         | 1-1/4          | 7/8            | 1-5/8          | 3-7/8       | 2     | CC       | REG         | 45082     | \$47.11     | \$62.31     |
| SG-40Y         | 1-1/4          | 1-1/4          | 1-5/8          | 4-1/8       | 2     | CC       | REG         | 45083     | \$53.50     | \$68.71     |
| SG-40Z         | 1-1/4          | 3/4            | 1-1/2          | 3-3/4       | 2     | CC       | REG         | 45084     | \$60.63     | \$74.30     |

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## 2 FLUTE STANDARD M-7 HSS

O.D  
Tolerance  
+.0015-.000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIALN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| SG-42          | 1-5/16         | 1              | 1-5/8          | 4-1/8       | 2     | CC       | REG         | 45085     | \$69.28     | \$87.49     |
| SG-44          | 1-3/8          | 1              | 1-5/8          | 4-1/8       | 2     | CC       | REG         | 45086     | \$62.48     | \$80.68     |
| SG-44Z         | 1-3/8          | 3/4            | 1-5/8          | 3-7/8       | 2     | CC       | REG         | 45087     | \$63.26     | \$81.47     |
| SG-46          | 1-7/16         | 1              | 1-5/8          | 4-1/8       | 2     | CC       | REG         | 45187     | \$76.21     | \$94.41     |
| SG-48          | 1-1/2          | 1              | 1-5/8          | 4-1/8       | 2     | CC       | REG         | 45088     | \$68.49     | \$86.70     |
| SG-48Z         | 1-1/2          | 3/4            | 1-1/2          | 3-3/4       | 2     | CC       | REG         | 45090     | \$74.90     | \$91.49     |
| SG-50          | 1-9/16         | 1-1/4          | 1-5/8          | 4-1/8       | 2     | CC       | REG         | 45190     | \$84.17     | \$107.05    |
| SG-52          | 1-5/8          | 1-1/4          | 1-5/8          | 4-1/8       | 2     | CC       | REG         | 45091     | \$72.80     | \$95.68     |
| SG-56          | 1-3/4          | 1-1/4          | 1-5/8          | 4-1/8       | 2     | CC       | REG         | 45093     | \$84.05     | \$106.93    |
| SG-56Z         | 1-3/4          | 3/4            | 1-5/8          | 3-7/8       | 2     | CC       | REG         | 45096     | \$106.40    | \$133.82    |
| SG-58          | 1-13/16        | 1-1/4          | 1-5/8          | 4-1/8       | 2     | CC       | REG         | 45194     | \$84.05     | \$106.93    |
| SG-64          | 2              | 1-1/4          | 1-5/8          | 4-1/8       | 2     | CC       | REG         | 45095     | \$98.82     | \$126.24    |
| SG-64Z         | 2              | 3/4            | 1-5/8          | 3-7/8       | 2     | CC       | REG         | 45097     | \$99.48     | \$126.89    |
| SG-72          | 2-1/4          | 1-1/4          | 1-5/8          | 4-1/8       | 2     | CC       | REG         | 45098     | \$132.41    | \$181.44    |
| SG-80          | 2-1/2          | 1-1/4          | 1-5/8          | 4-1/8       | 2     | CC       | REG         | 45099     | \$171.89    | \$220.92    |

## 2 FLUTE STANDARD M-7 HSS

O.D  
Tolerance  
+.0015-.000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIALN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| SGX-8          | 1/4            | 3/8            | 1              | 3-1/16      | 2     | CC       | MED         | 47503     | \$14.03     | \$17.19     |
| SGX-8A         | 1/4            | 3/8            | 1-1/2          | 3-5/16      | 2     | CC       | LONG        | 47504     | \$14.41     | \$17.56     |
| SGX-10         | 5/16           | 3/8            | 1-1/4          | 3-5/16      | 2     | CC       | MED         | 47506     | \$14.41     | \$17.56     |
| SGX-12         | 3/8            | 3/8            | 1-1/2          | 3-1/4       | 2     | CC       | LONG        | 47509     | \$14.03     | \$17.19     |
| SGX-12A        | 3/8            | 3/8            | 1              | 2-3/4       | 2     | CC       | MED         | 47512     | \$11.77     | \$14.94     |
| SGX-14         | 7/16           | 1/2            | 1-3/4          | 3-3/4       | 2     | CC       | MED         | 47513     | \$16.42     | \$20.25     |
| SGX-16         | 1/2            | 1/2            | 2              | 4           | 2     | CC       | LONG        | 47515     | \$17.67     | \$23.39     |
| SGX-16A        | 1/2            | 1/2            | 1-1/2          | 3-1/2       | 2     | CC       | MED         | 47518     | \$15.79     | \$19.62     |
| SGX-18         | 9/16           | 1/2            | 1-7/8          | 3-7/8       | 2     | CC       | MED         | 47519     | \$22.93     | \$30.09     |
| SGX-20         | 5/8            | 5/8            | 2-3/8          | 4-1/2       | 2     | CC       | X-LONG      | 47521     | \$23.67     | \$30.85     |
| SGX-20A        | 5/8            | 5/8            | 1-5/8          | 3-3/4       | 2     | CC       | MED         | 47524     | \$21.17     | \$26.85     |
| SGX-20B        | 5/8            | 5/8            | 2              | 4-1/8       | 2     | CC       | LONG        | 47525     | \$23.43     | \$30.60     |
| SGX-24         | 3/4            | 3/4            | 3-1/8          | 5-3/8       | 2     | CC       | X-LONG      | 47530     | \$30.94     | \$40.47     |
| SGX-24A        | 3/4            | 3/4            | 1-3/4          | 4           | 2     | CC       | MED         | 47533     | \$24.05     | \$32.54     |
| SGX-24B        | 3/4            | 3/4            | 2-1/4          | 4-1/2       | 2     | CC       | LONG        | 47537     | \$22.17     | \$30.66     |
| SGX-28         | 7/8            | 7/8            | 3-5/8          | 5-7/8       | 2     | CC       | LONG        | 47543     | \$37.59     | \$51.34     |
| SGX-28B        | 7/8            | 7/8            | 2-1/2          | 4-3/4       | 2     | CC       | MED         | 47546     | \$27.94     | \$39.52     |
| SGX-32         | 1              | 1              | 4-5/8          | 7-1/8       | 2     | CC       | X-LONG      | 47549     | \$54.00     | \$69.66     |
| SGX-32A        | 1              | 1              | 2-5/8          | 5-1/8       | 2     | CC       | MED         | 47552     | \$37.96     | \$50.94     |
| SGX-32B        | 1              | 1              | 3-5/8          | 6-1/8       | 2     | CC       | LONG        | 47555     | \$47.36     | \$62.14     |
| SGX-32C        | 1              | 1              | 3              | 5-1/2       | 2     | CC       | MED         | 47558     | \$42.47     | \$55.46     |
| SGX-32D        | 1              | 1              | 2-1/4          | 4-3/4       | 2     | CC       | MED         | 47561     | \$41.47     | \$53.34     |

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## 2 FLUTE STANDARD M-7 HSS & M-42 COBALT

O.D  
Tolerance  
+.0015-.000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TiN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-----------|
| SGX-40         | 1-1/4          | 1-1/4          | 4-3/4          | 7-1/4       | 2     | CC       | X-LONG      | 47570     | \$84.70     | \$106.86  |
| SGX-40A        | 1-1/4          | 1              | 2-1/4          | 4-3/4       | 2     | CC       | MED         | 47573     | \$62.02     | \$77.23   |
| SGX-40B        | 1-1/4          | 1              | 3              | 5-1/2       | 2     | CC       | LONG        | 47576     | \$71.04     | \$87.83   |
| SGX-40X        | 1-1/4          | 1-1/4          | 2-1/4          | 4-3/4       | 2     | CC       | MED         | 47579     | \$57.76     | \$72.96   |
| SGX-40Y        | 1-1/4          | 1-1/4          | 3              | 5-1/2       | 2     | CC       | LONG        | 47582     | \$71.04     | \$87.83   |
| SGX-48         | 1-1/2          | 1-1/4          | 3              | 5-1/2       | 2     | CC       | MED         | 47585     | \$88.49     | \$108.34  |
| SGX-56         | 1-3/4          | 1-1/4          | 3              | 5-1/2       | 2     | CC       | LONG        | 47591     | \$108.36    | \$134.04  |
| SGX-64         | 2              | 1-1/4          | 3              | 5-1/2       | 2     | CC       | LONG        | 47594     | \$135.15    | \$165.51  |
| SGX-64A        | 2              | 1-1/4          | 2-1/4          | 4-3/4       | 2     | CC       | MED         | 47595     | \$113.33    | \$140.75  |
| SGX-56A        | 1-3/4          | 1-1/4          | 2-1/4          | 4-3/4       | 2     | CC       | MED         | 47596     | \$94.11     | \$116.99  |
| SGX-72         | 2-1/4          | 1-1/4          | 3              | 5-1/2       | 2     | CC       | MED         | 47597     | \$166.40    | \$221.61  |
| SGX-80         | 2-1/2          | 1-1/4          | 3              | 5-1/2       | 2     | CC       | MED         | 47599     | \$201.82    | \$257.04  |
| SGX-16M        | 1/2            | 1/2            | 2              | 4           | 2     | CC       | MED         | 47616     | \$20.92     | \$30.93   |
| SGX-20AM       | 5/8            | 5/8            | 1-5/8          | 3-3/4       | 2     | CC       | MED         | 47625     | \$25.68     | \$35.62   |
| SGX-24M        | 3/4            | 3/4            | 3-1/8          | 5-3/8       | 2     | CC       | LONG        | 47631     | \$39.22     | \$55.87   |
| SGX-24BM       | 3/4            | 3/4            | 2-1/4          | 4-1/2       | 2     | CC       | MED         | 47638     | \$29.69     | \$44.52   |
| SGX-28AM       | 7/8            | 7/8            | 2              | 4-1/4       | 2     | CC       | MED         | 47645     | \$38.46     | \$58.74   |
| SGX-32DM       | 1              | 1              | 2-1/4          | 4-3/4       | 2     | CC       | MED         | 47662     | \$54.44     | \$75.21   |
| SGX-40XM       | 1-1/4          | 1-1/4          | 2-1/4          | 4-3/4       | 2     | CC       | MED         | 47680     | \$77.30     | \$103.93  |
| SGX-40YM       | 1-1/4          | 1-1/4          | 3              | 5-1/2       | 2     | CC       | MED         | 47683     | \$91.71     | \$121.10  |
| SGX-64M        | 2              | 1-1/4          | 3              | 5-1/2       | 2     | CC       | MED         | 47695     | \$162.34    | \$258.98  |

GREEN SHADED AREA REPRESENTS TIALN



LONG  
Tolerance  
+.0015-.0000  
X-LONG  
Tolerance  
+.001-.000

## 2 FLUTE LONG & EXTRA LONG REACH M-7 HSS & M-42 COBALT

| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TiN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-----------|
| SGL-4          | 1/8            | 3/8            | 3/8            | 2-3/8       | 2     | CC       | L-REACH     | 46507     | \$16.04     | \$19.20   |
| SGL-6          | 3/16           | 3/8            | 1/2            | 2-11/16     | 2     | CC       | L-REACH     | 46513     | \$16.04     | \$19.20   |
| SGL-8          | 1/4            | 3/8            | 5/8            | 3-1/16      | 2     | CC       | L-REACH     | 46519     | \$16.04     | \$19.20   |
| SGL-10         | 5/16           | 3/8            | 3/4            | 3-5/16      | 2     | CC       | L-REACH     | 46525     | \$16.29     | \$19.44   |
| SGL-12         | 3/8            | 3/8            | 3/4            | 3-5/16      | 2     | CC       | L-REACH     | 46531     | \$16.29     | \$19.44   |
| SGL-14         | 7/16           | 1/2            | 1              | 3-7/8       | 2     | CC       | L-REACH     | 46535     | \$19.04     | \$24.77   |
| SGL-16         | 1/2            | 1/2            | 1              | 4           | 2     | CC       | L-REACH     | 46537     | \$20.67     | \$26.39   |
| SGL-20         | 5/8            | 5/8            | 1-3/8          | 4-5/8       | 2     | CC       | L-REACH     | 46543     | \$30.07     | \$37.23   |
| SGL-24         | 3/4            | 3/4            | 1-5/8          | 5-3/8       | 2     | CC       | L-REACH     | 46555     | \$37.96     | \$47.48   |
| SGL-24X        | 3/4            | 1/2            | 1-5/8          | 5-1/4       | 2     | CC       | L-REACH     | 46561     | \$37.96     | \$47.48   |
| SGL-28         | 7/8            | 7/8            | 2              | 6           | 2     | CC       | L-REACH     | 46567     | \$42.98     | \$56.73   |
| SGL-32         | 1              | 1              | 2-1/2          | 7-1/4       | 2     | CC       | L-REACH     | 46572     | \$66.65     | \$82.31   |
| SGXL-14XM      | 7/16           | 3/8            | 3/4            | 5           | 2     | CC       | XL-REACH    | 47416     | \$39.22     | \$51.38   |
| SGXL-16M       | 1/2            | 1/2            | 1              | 6           | 2     | CC       | XL-REACH    | 47418     | \$41.34     | \$55.89   |
| SGXL-18XM      | 9/16           | 1/2            | 1              | 6           | 2     | CC       | XL-REACH    | 47420     | \$51.69     | \$66.23   |
| SGXL-24M       | 3/4            | 3/4            | 1-1/2          | 8-1/4       | 2     | CC       | XL-REACH    | 47436     | \$74.68     | \$101.09  |
| SGXL-28XM      | 7/8            | 3/4            | 1-1/2          | 8-1/4       | 2     | CC       | XL-REACH    | 47440     | \$93.34     | \$119.77  |
| SGXL-32M       | 1              | 1              | 2              | 10-1/4      | 2     | CC       | XL-REACH    | 47458     | \$124.16    | \$163.32  |
| SGXL-36XM      | 1-1/8          | 1              | 2              | 10-1/4      | 2     | CC       | XL-REACH    | 47460     | \$155.23    | \$194.40  |

GREEN SHADED AREA REPRESENTS TIALN

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## 2 FLUTE "KEYWAY TOLERANCE" M-7 HSS

O.D  
Tolerance  
+.000-.001



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIALN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| SKG-4          | 1/8            | 3/8            | 3/8            | 2-5/16      | 2     | CC       | REG         | 47704     | \$11.03     | \$14.18     |
| SKG-6          | 3/16           | 3/8            | 3/8            | 2-5/16      | 2     | CC       | REG         | 47706     | \$11.03     | \$14.18     |
| SKG-8          | 1/4            | 3/8            | 1/2            | 2-5/16      | 2     | CC       | REG         | 47708     | \$11.03     | \$14.18     |
| SKG-10         | 5/16           | 3/8            | 9/16           | 2-5/16      | 2     | CC       | REG         | 47710     | \$11.03     | \$14.18     |
| SKG-12         | 3/8            | 3/8            | 9/16           | 2-5/16      | 2     | CC       | REG         | 47712     | \$11.65     | \$14.81     |
| SKG-16         | 1/2            | 1/2            | 1              | 3           | 2     | CC       | REG         | 47716     | \$15.79     | \$19.62     |
| SKG-20         | 5/8            | 5/8            | 1-5/16         | 3-7/16      | 2     | CC       | REG         | 47720     | \$22.80     | \$28.47     |
| SKG-24         | 3/4            | 3/4            | 1-5/16         | 3-9/16      | 2     | CC       | REG         | 47724     | \$25.81     | \$32.55     |
| SKG-32         | 1              | 1              | 1-5/8          | 4-1/8       | 2     | CC       | REG         | 47732     | \$40.09     | \$51.97     |

## 2 FLUTE STANDARD BALL END M-7 HSS & M-42 COBALT

O.D  
Tolerance  
+.0015-.0000



| CATALOG NUMBER                   | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIALN PRICE |
|----------------------------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| SR-4                             | 1/8            | 3/8            | 3/8            | 2-5/16      | 2     | BAL      | REG         | 48504     | \$12.91     | \$16.06     |
| SR-6                             | 3/16           | 3/8            | 1/2            | 2-3/8       | 2     | BAL      | REG         | 48508     | \$12.91     | \$16.06     |
| SR-8                             | 1/4            | 3/8            | 5/8            | 2-7/16      | 2     | BAL      | REG         | 48512     | \$12.91     | \$16.06     |
| SR-9                             | 9/32           | 3/8            | 5/8            | 2-1/2       | 2     | BAL      | REG         | 48514     | \$15.03     | \$18.57     |
| SR-10                            | 5/16           | 3/8            | 3/4            | 2-1/2       | 2     | BAL      | REG         | 48516     | \$14.41     | \$17.56     |
| SR-12                            | 3/8            | 3/8            | 3/4            | 2-1/2       | 2     | BAL      | REG         | 48520     | \$14.90     | \$18.07     |
| SR-14                            | 7/16           | 1/2            | 1              | 3           | 2     | BAL      | REG         | 48524     | \$19.67     | \$23.51     |
| SR-16                            | 1/2            | 1/2            | 1              | 3           | 2     | BAL      | REG         | 48528     | \$19.67     | \$23.51     |
| SR-18                            | 9/16           | 1/2            | 1              | 3           | 2     | BAL      | REG         | 48532     | \$24.30     | \$29.99     |
| SR-20                            | 5/8            | 5/8            | 1-3/8          | 3-1/2       | 2     | BAL      | REG         | 48536     | \$28.06     | \$33.74     |
| SR-24                            | 3/4            | 3/4            | 1-5/8          | 3-7/8       | 2     | BAL      | REG         | 48544     | \$32.82     | \$41.31     |
| SR-26                            | 13/16          | 3/4            | 2              | 4-1/4       | 2     | BAL      | REG         | 48552     | \$41.72     | \$53.31     |
| SR-28                            | 7/8            | 7/8            | 2              | 4-1/4       | 2     | BAL      | REG         | 48556     | \$41.72     | \$53.31     |
| SR-28Y                           | 7/8            | 3/4            | 2              | 4-1/4       | 2     | BAL      | REG         | 48560     | \$41.72     | \$53.31     |
| SR-30                            | 15/16          | 3/4            | 2-1/4          | 4-1/2       | 2     | BAL      | REG         | 48564     | \$48.61     | \$60.49     |
| SR-32                            | 1              | 1              | 2-1/4          | 4-3/4       | 2     | BAL      | REG         | 48568     | \$52.62     | \$64.50     |
| SR-32X                           | 1              | 3/4            | 2-1/4          | 4-1/2       | 2     | BAL      | REG         | 48572     | \$52.62     | \$64.50     |
| SR-36                            | 1-1/8          | 1              | 2-1/4          | 4-3/4       | 2     | BAL      | REG         | 48576     | \$66.27     | \$81.48     |
| SR-44                            | 1-3/8          | 1-1/4          | 2-1/2          | 5           | 2     | BAL      | REG         | 48584     | \$85.10     | \$104.95    |
| SR-48                            | 1-1/2          | 1-1/4          | 2-1/2          | 5           | 2     | BAL      | REG         | 48588     | \$93.72     | \$113.57    |
| SR-64                            | 2              | 1-1/4          | 2-1/2          | 5           | 2     | BAL      | REG         | 48592     | \$147.45    | \$177.79    |
| <b>LONG REACH BALL END</b>       |                |                |                |             |       |          |             |           |             |             |
| SRL-4                            | 1/8            | 3/8            | 3/8            | 2-3/8       | 2     | BAL      | L-REACH     | 50505     | \$19.92     | \$23.08     |
| SRL-8                            | 1/4            | 3/8            | 5/8            | 3-1/16      | 2     | BAL      | L-REACH     | 50517     | \$19.92     | \$23.08     |
| SRL-12                           | 3/8            | 3/8            | 3/4            | 3-3/16      | 2     | BAL      | L-REACH     | 50528     | \$21.30     | \$24.45     |
| SRL-14                           | 7/16           | 1/2            | 1              | 3-7/8       | 2     | BAL      | L-REACH     | 50538     | \$30.94     | \$36.68     |
| SRL-16                           | 1/2            | 1/2            | 1              | 4           | 2     | BAL      | L-REACH     | 50540     | \$30.94     | \$36.68     |
| SRL-24                           | 3/4            | 3/4            | 1-5/8          | 5-3/8       | 2     | BAL      | L-REACH     | 50552     | \$52.37     | \$61.89     |
| SRL-32                           | 1              | 1              | 2-1/2          | 7-1/4       | 2     | BAL      | L-REACH     | 50564     | \$81.93     | \$97.59     |
| SRL-40                           | 1-1/4          | 1-1/4          | 3              | 7-1/4       | 2     | BAL      | L-REACH     | 50570     | \$104.75    | \$126.91    |
| <b>EXTRA LONG REACH BALL END</b> |                |                |                |             |       |          |             |           |             |             |
| SRXL-10XM                        | 5/16           | 1/4            | 1/2            | 4           | 2     | BAL      | XL-REACH    | 51119     | \$46.23     | \$53.68     |
| SRXL-12M                         | 3/8            | 3/8            | 3/4            | 5           | 2     | BAL      | XL-REACH    | 51121     | \$47.17     | \$59.33     |
| SRXL-16M                         | 1/2            | 1/2            | 1              | 6           | 2     | BAL      | XL-REACH    | 51125     | \$62.02     | \$76.57     |
| SRXL-18XM                        | 9/16           | 1/2            | 1              | 6           | 2     | BAL      | XL-REACH    | 51127     | \$77.55     | \$94.00     |
| SRXL-24M                         | 3/4            | 3/4            | 1-1/2          | 8-1/4       | 2     | BAL      | XL-REACH    | 51139     | \$110.88    | \$137.31    |
| SRXL-28XM                        | 7/8            | 3/4            | 1-1/2          | 8-1/4       | 2     | BAL      | XL-REACH    | 51142     | \$138.57    | \$167.54    |
| SRXL-32M                         | 1              | 1              | 2              | 10-1/4      | 2     | BAL      | XL-REACH    | 51161     | \$183.55    | \$222.72    |
| SRXL-36XM                        | 1-1/8          | 1              | 2              | 10-1/4      | 2     | BAL      | XL-REACH    | 51163     | \$229.41    | \$276.40    |

TIALN



## 2 FLUTE STANDARD BALL END M-42 COBALT

O.D  
Tolerance  
+.0015-.0000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TiAlN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| SR-4M          | 1/8            | 3/8            | 3/8            | 2-5/16      | 2     | BAL      | REG         | 49005     | \$16.33     | \$21.87     |
| SR-12M         | 3/8            | 3/8            | 9/16           | 2-5/16      | 2     | BAL      | REG         | 49033     | \$15.57     | \$21.09     |
| SR-16M         | 1/2            | 1/2            | 1              | 3           | 2     | BAL      | REG         | 49040     | \$22.52     | \$29.23     |
| SR-24XM        | 3/4            | 3/4            | 1-5/8          | 3-7/8       | 2     | BAL      | REG         | 49056     | \$37.40     | \$45.91     |
| SR-32M         | 1              | 1              | 1-5/8          | 4-1/8       | 2     | BAL      | REG         | 49061     | \$51.13     | \$71.90     |
| SR-32XM        | 1              | 1              | 2-1/4          | 4-3/4       | 2     | BAL      | REG         | 49063     | \$89.40     | \$110.18    |

## 2 FLUTE DOUBLE END BALL END M-7 HSS

O.D  
Tolerance  
+.0000-.0015



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TiN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-----------|
| SRR-4          | 1/8            | 3/8            | 3/8            | 3-1/16      | 2     | BAL      | REG         | 51007     | \$25.55     | \$28.72   |
| SRR-6          | 3/16           | 3/8            | 7/16           | 3-1/8       | 2     | BAL      | REG         | 51015     | \$25.55     | \$28.72   |
| SRR-7          | 7/32           | 3/8            | 1/2            | 3-1/8       | 2     | BAL      | REG         | 51019     | \$25.55     | \$28.72   |
| SRR-8          | 1/4            | 3/8            | 1/2            | 3-1/8       | 2     | BAL      | REG         | 51023     | \$25.55     | \$28.72   |
| SRR-9          | 9/32           | 3/8            | 9/16           | 3-1/8       | 2     | BAL      | REG         | 51027     | \$25.55     | \$28.72   |
| SRR-10         | 5/16           | 3/8            | 9/16           | 3-1/8       | 2     | BAL      | REG         | 51031     | \$25.55     | \$28.72   |
| SRR-12 *       | 3/8            | 3/8            | 9/16           | 3-1/8       | 2     | BAL      | REG         | 51039     | \$25.55     | \$28.72   |
| SRR-14         | 7/16           | 1/2            | 13/16          | 3-3/4       | 2     | BAL      | REG         | 51043     | \$35.96     | \$39.80   |
| SRR-16 *       | 1/2            | 1/2            | 13/16          | 3-3/4       | 2     | BAL      | REG         | 51047     | \$35.96     | \$39.80   |
| SRR-18         | 9/16           | 5/8            | 1-1/8          | 4-1/2       | 2     | BAL      | REG         | 51049     | \$45.48     | \$52.64   |
| SRR-20 *       | 5/8            | 5/8            | 1-1/8          | 4-1/2       | 2     | BAL      | REG         | 51051     | \$49.24     | \$56.40   |
| SRR-24 *       | 3/4            | 3/4            | 1-5/16         | 5           | 2     | BAL      | REG         | 51055     | \$62.40     | \$71.91   |
| SRR-32 *       | 1              | 1              | 1-5/8          | 5-7/8       | 2     | BAL      | REG         | 51063     | \$94.72     | \$109.48  |

\* When cutting diameter and shank diameter are the same the tolerance is +.0000-.0025

## 2 FLUTE BRIDGEPORT END MILL M-7 HSS

O.D  
Tolerance  
+.0000-.0015



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TiN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-----------|
| STG-24         | 3/4            | 1/2            | 3/4            | 2-3/4       | 2     | CC       | STUB        | 54005     | \$30.07     | \$45.71   |
| STG-32         | 1              | 1/2            | 3/4            | 2-3/4       | 2     | CC       | STUB        | 54017     | \$42.22     | \$60.81   |
| STG-32B        | 1              | 3/4            | 3/4            | 3           | 2     | CC       | STUB        | 54029     | \$43.22     | \$54.68   |
| STG-36A        | 1-1/8          | 5/8            | 3/4            | 2-7/8       | 2     | CC       | STUB        | 54041     | \$64.90     | \$78.55   |
| STG-40         | 1-1/4          | 1/2            | 3/4            | 2-3/4       | 2     | CC       | STUB        | 54053     | \$68.41     | \$82.06   |
| STG-40B        | 1-1/4          | 3/4            | 3/4            | 3           | 2     | CC       | STUB        | 54065     | \$68.41     | \$82.06   |
| STG-44A        | 1-3/8          | 5/8            | 3/4            | 2-7/8       | 2     | CC       | STUB        | 54071     | \$70.72     | \$87.31   |
| STG-44B        | 1-3/8          | 3/4            | 3/4            | 3           | 2     | CC       | STUB        | 54077     | \$70.72     | \$87.31   |
| STG-48A        | 1-1/2          | 5/8            | 3/4            | 2-7/8       | 2     | CC       | STUB        | 54083     | \$76.73     | \$93.31   |
| STG-48B        | 1-1/2          | 3/4            | 3/4            | 3           | 2     | CC       | STUB        | 54089     | \$76.73     | \$93.31   |



## 4 FLUTE DOUBLE END NON C/C M-7 HSS

O.D  
Tolerance  
+.0015-.0000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-----------|
| DB-4           | 1/8            | 3/8            | 3/8            | 3-1/16      | 4     | NCC      | REG         | 15504     | \$13.03     | \$16.19   |
| DB-4X          | 1/8            | 3/8            | 5/8            | 3-9/16      | 4     | NCC      | REG         | 15505     | \$15.53     | \$18.70   |
| DB-5           | 5/32           | 3/8            | 7/16           | 3-1/8       | 4     | NCC      | REG         | 15508     | \$13.53     | \$16.69   |
| DB-6           | 3/16           | 3/8            | 1/2            | 3-1/4       | 4     | NCC      | REG         | 15512     | \$13.03     | \$16.19   |
| DB-6X          | 3/16           | 3/8            | 7/8            | 4-1/8       | 4     | NCC      | REG         | 15513     | \$15.53     | \$19.80   |
| DB-7           | 7/32           | 3/8            | 9/16           | 3-1/4       | 4     | NCC      | REG         | 15516     | \$13.53     | \$16.69   |
| DB-8           | 1/4            | 3/8            | 5/8            | 3-3/8       | 4     | NCC      | REG         | 15520     | \$12.78     | \$15.93   |
| DB-9           | 9/32           | 3/8            | 11/16          | 3-3/8       | 4     | NCC      | REG         | 15524     | \$13.53     | \$16.69   |
| DB-10          | 5/16           | 3/8            | 3/4            | 3-1/2       | 4     | NCC      | REG         | 15528     | \$12.78     | \$15.93   |
| DB-11          | 11/32          | 3/8            | 3/4            | 3-1/2       | 4     | NCC      | REG         | 15532     | \$13.53     | \$16.69   |
| DB-12 *        | 3/8            | 3/8            | 3/4            | 3-1/2       | 4     | NCC      | REG         | 15536     | \$12.78     | \$15.93   |
| DB-13          | 13/32          | 1/2            | 1              | 4-1/8       | 4     | NCC      | REG         | 15540     | \$18.92     | \$24.64   |
| DB-14          | 7/16           | 1/2            | 1              | 4-1/8       | 4     | NCC      | REG         | 15544     | \$18.41     | \$24.15   |
| DB-16 *        | 1/2            | 1/2            | 1              | 4-1/8       | 4     | NCC      | REG         | 15552     | \$18.41     | \$24.15   |
| DB-18          | 9/16           | 5/8            | 1-3/8          | 5           | 4     | NCC      | REG         | 15556     | \$26.81     | \$35.13   |
| DB-20 *        | 5/8            | 5/8            | 1-3/8          | 5           | 4     | NCC      | REG         | 15560     | \$26.81     | \$35.13   |
| DB-24 *        | 3/4            | 3/4            | 1-5/8          | 5-5/8       | 4     | NCC      | REG         | 15568     | \$33.83     | \$43.35   |
| DB-32 *        | 1              | 1              | 1-7/8          | 6-3/8       | 4     | NCC      | REG         | 15584     | \$51.99     | \$66.77   |

\* When cutting diameter and shank diameter are the same the tolerance is +.0000-.0025

## 4, 6 FLUTE STANDARD "CENTER CUTTING" M-7 HSS

O.D  
Tolerance  
+.010-.000



| CATALOG NUMBER        | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIN PRICE |
|-----------------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-----------|
| <b>45° INC. ANGLE</b> |                |                |                |             |       |          |             |           |             |           |
| DT-12-45              | 3/8            | 3/8            | 1/8            | 2-1/8       | 6     | NCC      | RAD         | 20500     | \$36.71     | \$39.87   |
| DT-16-45              | 1/2            | 3/8            | 1/8            | 2-1/8       | 8     | NCC      | RAD         | 20510     | \$39.84     | \$43.38   |
| DT-32-45              | 1              | 1/2            | 1/4            | 2-1/2       | 10    | NCC      | RAD         | 20525     | \$49.87     | \$59.57   |
| DT-44-45              | 1-3/8          | 5/8            | 3/8            | 2-7/8       | 10    | NCC      | RAD         | 20530     | \$72.92     | \$88.81   |
| DT-44-45A             | 1-3/8          | 1/2            | 3/8            | 2-7/8       | 10    | NCC      | RAD         | 20540     | \$72.92     | \$88.81   |
| DT-60-45              | 1-7/8          | 7/8            | 1/2            | 3-1/4       | 12    | NCC      | RAD         | 20550     | \$158.24    | \$181.74  |
| DT-80-45              | 2-1/2          | 1              | 3/4            | 3-3/4       | 12    | NCC      | RAD         | 20570     | \$223.14    | \$261.63  |
| <b>60° INC. ANGLE</b> |                |                |                |             |       |          |             |           |             |           |
| DT-12-60              | 3/8            | 3/8            | 3/16           | 2-1/8       | 6     | NCC      | RAD         | 21015     | \$36.71     | \$39.87   |
| DT-16-60              | 1/2            | 3/8            | 7/32           | 2-1/8       | 8     | NCC      | RAD         | 21025     | \$39.84     | \$43.38   |
| DT-24-60              | 3/4            | 3/8            | 5/16           | 2-1/8       | 8     | NCC      | RAD         | 21035     | \$46.49     | \$52.21   |
| DT-32-60              | 1              | 1/2            | 1/4            | 2-1/2       | 10    | NCC      | RAD         | 21040     | \$49.87     | \$59.57   |
| DT-44-60              | 1-3/8          | 5/8            | 9/16           | 2-7/8       | 10    | NCC      | RAD         | 21045     | \$72.67     | \$88.56   |
| DT-60-60              | 1-7/8          | 7/8            | 13/16          | 3-1/4       | 12    | NCC      | RAD         | 21065     | \$158.24    | \$181.74  |
| DT-72-60              | 2-1/4          | 1              | 1-1/16         | 3-3/4       | 12    | NCC      | RAD         | 21075     | \$188.56    | \$227.04  |
| DT-12-60M             | 3/8            | 3/8            | 3/16           | 2-1/8       | 6     | NCC      | RAD         | 21210     | \$44.86     | \$50.38   |
| DT-24-60M             | 3/4            | 3/8            | 5/16           | 2-1/8       | 8     | NCC      | RAD         | 21230     | \$56.76     | \$66.77   |

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## 4 FLUTE DOUBLE END "CENTER CUTTING" M-7 HSS

O.D  
Tolerance  
+.0000-.0015



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-----------|
| JB-4           | 1/8            | 3/8            | 3/8            | 3-1/16      | 4     | CC       | REG         | 25006     | \$16.67     | \$19.82   |
| JB-6           | 3/16           | 3/8            | 1/2            | 3-1/4       | 4     | CC       | REG         | 25012     | \$16.67     | \$19.82   |
| JB-8           | 1/4            | 3/8            | 5/8            | 3-3/8       | 4     | CC       | REG         | 25018     | \$16.67     | \$19.82   |
| JB-10          | 5/16           | 3/8            | 3/4            | 3-1/2       | 4     | CC       | REG         | 25024     | \$16.67     | \$19.82   |
| JB-12 *        | 3/8            | 3/8            | 3/4            | 3-1/2       | 4     | CC       | REG         | 25030     | \$16.67     | \$19.82   |
| JB-16 *        | 1/2            | 1/2            | 1              | 4-1/8       | 4     | CC       | REG         | 25036     | \$25.93     | \$31.66   |
| JB-20 *        | 5/8            | 5/8            | 1-3/8          | 5           | 4     | CC       | REG         | 25042     | \$33.07     | \$41.39   |
| JB-24 *        | 3/4            | 3/4            | 1-5/8          | 5-5/8       | 4     | CC       | REG         | 25048     | \$41.59     | \$51.12   |
| JB-28 *        | 7/8            | 7/8            | 1-7/8          | 6-1/8       | 4     | CC       | REG         | 25054     | \$53.87     | \$67.63   |
| JB-32 *        | 1              | 1              | 1-7/8          | 6-3/8       | 4     | CC       | REG         | 25060     | \$64.77     | \$79.55   |

\* When cutting diameter and shank diameter are the same the tolerance is +.0000-.0025

## 4, 6 FLUTE STANDARD "CENTER CUTTING" M-7 HSS

O.D  
Tolerance  
+.0015-.0000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-----------|
| JF-4           | 1/8            | 3/8            | 3/8            | 2-5/16      | 4     | CC       | REG         | 26004     | \$12.53     | \$15.68   |
| JF-5           | 5/32           | 3/8            | 7/16           | 2-3/8       | 4     | CC       | REG         | 26008     | \$12.53     | \$15.68   |
| JF-6           | 3/16           | 3/8            | 1/2            | 2-3/8       | 4     | CC       | REG         | 26010     | \$12.53     | \$15.68   |
| JF-7           | 7/32           | 3/8            | 5/8            | 2-1/2       | 4     | CC       | REG         | 26012     | \$13.16     | \$16.31   |
| JF-8           | 1/4            | 3/8            | 5/8            | 2-1/2       | 4     | CC       | REG         | 26014     | \$12.03     | \$15.19   |
| JF-9           | 9/32           | 3/8            | 5/8            | 2-1/2       | 4     | CC       | REG         | 26016     | \$13.29     | \$16.44   |
| JF-10          | 5/16           | 3/8            | 3/4            | 2-1/2       | 4     | CC       | REG         | 26018     | \$12.03     | \$15.19   |
| JF-11          | 11/32          | 3/8            | 3/4            | 2-1/2       | 4     | CC       | REG         | 26020     | \$13.29     | \$16.44   |
| JF-12          | 3/8            | 3/8            | 3/4            | 2-1/2       | 4     | CC       | REG         | 26022     | \$12.03     | \$15.19   |
| JF-13          | 13/32          | 3/8            | 3/4            | 2-1/2       | 4     | CC       | REG         | 26023     | \$18.04     | \$21.57   |
| JF-14          | 7/16           | 3/8            | 1              | 2-11/16     | 4     | CC       | REG         | 26024     | \$17.16     | \$20.70   |
| JF-16          | 1/2            | 1/2            | 1-1/4          | 3-1/4       | 4     | CC       | REG         | 26026     | \$17.67     | \$21.50   |
| JF-17          | 17/32          | 1/2            | 1-3/8          | 3-3/8       | 4     | CC       | REG         | 26028     | \$22.17     | \$27.85   |
| JF-18          | 9/16           | 1/2            | 1-3/8          | 3-3/8       | 4     | CC       | REG         | 26029     | \$24.18     | \$29.86   |
| JF-20          | 5/8            | 5/8            | 1-5/8          | 3-3/4       | 4     | CC       | REG         | 26030     | \$22.17     | \$27.85   |
| JF-22          | 11/16          | 5/8            | 1-5/8          | 3-3/4       | 4     | CC       | REG         | 26034     | \$24.18     | \$30.92   |
| JF-24Y         | 3/4            | 3/4            | 1-5/8          | 3-7/8       | 4     | CC       | REG         | 26038     | \$25.55     | \$34.04   |
| JF-26          | 13/16          | 3/4            | 1-7/8          | 4-1/8       | 4     | CC       | REG         | 26040     | \$31.45     | \$43.04   |
| JF-28          | 7/8            | 7/8            | 1-7/8          | 4-1/8       | 4     | CC       | REG         | 26042     | \$32.20     | \$43.79   |
| JF-30          | 15/16          | 7/8            | 1-7/8          | 4-1/8       | 4     | CC       | REG         | 26044     | \$35.71     | \$47.59   |
| JF-32Y         | 1              | 1              | 2              | 4-1/2       | 4     | CC       | REG         | 26046     | \$38.84     | \$50.72   |
| JF-36          | 1-1/8          | 1              | 2              | 4-1/2       | 4     | CC       | REG         | 26050     | \$53.74     | \$68.96   |
| JF-36-6        | 1-1/8          | 1              | 2              | 4-1/2       | 6     | CC       | REG         | 26054     | \$53.74     | \$68.96   |
| JF-40          | 1-1/4          | 1              | 2              | 4-1/2       | 6     | CC       | REG         | 26058     | \$58.89     | \$74.10   |
| JF-40Y         | 1-1/4          | 1-1/4          | 2              | 4-1/2       | 6     | CC       | REG         | 26060     | \$56.13     | \$71.34   |
| JF-40Z         | 1-1/4          | 1-1/4          | 2              | 4-1/2       | 4     | CC       | REG         | 26062     | \$56.13     | \$71.34   |
| JF-48          | 1-1/2          | 1              | 2              | 4-1/2       | 6     | CC       | REG         | 26066     | \$77.77     | \$95.99   |
| JF-48X         | 1-1/2          | 1-1/4          | 2              | 4-1/2       | 6     | CC       | REG         | 26068     | \$72.80     | \$91.02   |
| JF-48Y         | 1-1/2          | 1-1/4          | 2              | 4-1/2       | 4     | CC       | REG         | 26070     | \$72.15     | \$90.36   |
| JF-56          | 1-3/4          | 1-1/4          | 2              | 4-1/2       | 6     | CC       | REG         | 26074     | \$89.02     | \$111.90  |
| JF-64A         | 2              | 1-1/4          | 2              | 4-1/2       | 4     | CC       | REG         | 26078     | \$104.43    | \$131.86  |

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## 4 OR MORE FLUTE STANDARD "CENTER CUTTING" M-7 HSS

O.D.  
Tolerance  
+.0015-.0000



| CATALOG NUMBER             | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIN PRICE |
|----------------------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-----------|
| JFM-32                     | 1              | 1              | 3              | 5-1/2       | 4     | CC       | MED         | 29010     | \$52.12     | \$65.10   |
| JFM-40X                    | 1-1/4          | 1-1/4          | 3              | 5-1/2       | 6     | CC       | MED         | 29030     | \$70.54     | \$87.32   |
| JFL-8                      | 1/4            | 3/8            | 1-1/4          | 3-1/8       | 4     | CC       | LONG        | 27504     | \$14.28     | \$17.45   |
| JFL-10                     | 5/16           | 3/8            | 1-3/8          | 3-1/8       | 4     | CC       | LONG        | 27510     | \$14.28     | \$17.45   |
| JFL-12                     | 3/8            | 3/8            | 1-1/2          | 3-1/4       | 4     | CC       | LONG        | 27516     | \$13.65     | \$16.82   |
| JFL-16                     | 1/2            | 1/2            | 2              | 4           | 4     | CC       | LONG        | 27522     | \$19.04     | \$24.77   |
| JFL-20                     | 5/8            | 5/8            | 2-1/2          | 4-5/8       | 4     | CC       | LONG        | 27528     | \$26.69     | \$33.85   |
| JFL-24                     | 3/4            | 3/4            | 3              | 5-1/4       | 4     | CC       | LONG        | 27534     | \$32.70     | \$42.22   |
| JFL-28                     | 7/8            | 7/8            | 3-1/2          | 5-3/4       | 4     | CC       | LONG        | 27540     | \$40.72     | \$53.01   |
| JFL-32                     | 1              | 1              | 4              | 6-1/2       | 4     | CC       | LONG        | 27546     | \$54.75     | \$69.52   |
| JFL-40                     | 1-1/4          | 1              | 4              | 6-1/2       | 6     | CC       | LONG        | 27552     | \$85.20     | \$104.67  |
| JFL-40Y                    | 1-1/4          | 1-1/4          | 4              | 6-1/2       | 4     | CC       | LONG        | 27558     | \$85.20     | \$104.67  |
| JFL-56                     | 1-3/4          | 1-1/4          | 4              | 6-1/2       | 6     | CC       | LONG        | 27570     | \$136.46    | \$164.48  |
| JFX-6                      | 3/16           | 3/8            | 1-1/4          | 3-1/16      | 4     | CC       | X-LONG      | 29506     | \$17.92     | \$21.07   |
| JFX-8                      | 1/4            | 3/8            | 1-3/4          | 3-1/2       | 4     | CC       | X-LONG      | 29508     | \$16.78     | \$19.95   |
| JFX-8X                     | 1/4            | 3/8            | 2-1/4          | 4-1/8       | 4     | CC       | X-LONG      | 29510     | \$20.29     | \$24.56   |
| JFX-12                     | 3/8            | 3/8            | 2-1/2          | 4-1/4       | 4     | CC       | X-LONG      | 29516     | \$17.92     | \$22.17   |
| JFX-12X                    | 3/8            | 3/8            | 3-1/4          | 5           | 4     | CC       | X-LONG      | 29517     | \$22.68     | \$29.63   |
| JFX-16                     | 1/2            | 1/2            | 3              | 5           | 4     | CC       | X-LONG      | 29520     | \$22.93     | \$29.88   |
| JFX-16X                    | 1/2            | 1/2            | 4              | 6           | 4     | CC       | X-LONG      | 29522     | \$29.44     | \$37.76   |
| JFX-20                     | 5/8            | 5/8            | 4              | 6-1/8       | 4     | CC       | X-LONG      | 29524     | \$33.07     | \$42.47   |
| JFX-20X                    | 5/8            | 5/8            | 5              | 7-1/8       | 4     | CC       | X-LONG      | 29526     | \$41.72     | \$52.80   |
| JFX-24                     | 3/4            | 3/4            | 4              | 6-1/4       | 4     | CC       | X-LONG      | 29528     | \$38.84     | \$50.46   |
| JFX-24X                    | 3/4            | 3/4            | 6              | 8-1/4       | 4     | CC       | X-LONG      | 29530     | \$47.23     | \$62.34   |
| JFX-28                     | 7/8            | 7/8            | 5              | 7-1/4       | 4     | CC       | X-LONG      | 29532     | \$50.99     | \$65.76   |
| JFX-32                     | 1              | 1              | 6              | 8-1/2       | 4     | CC       | X-LONG      | 29536     | \$66.90     | \$83.88   |
| JFX-32X                    | 1              | 1              | 8              | 10-1/2      | 4     | CC       | X-LONG      | 29538     | \$87.32     | \$109.70  |
| JFX-40X                    | 1-1/4          | 1-1/4          | 6              | 8-1/2       | 4     | CC       | X-LONG      | 29540     | \$100.23    | \$124.72  |
| JFX-48                     | 1-1/2          | 1-1/4          | 8              | 10-1/2      | 6     | CC       | X-LONG      | 29544     | \$165.09    | \$196.62  |
| <b>LONG REACH END MILL</b> |                |                |                |             |       |          |             |           |             |           |
| JFXL-16                    | 1/2            | 1/2            | 1-1/4          | 6           | 4     | CC       | L-REACH     | 30619     | \$37.46     | \$45.78   |
| JFXL-20                    | 5/8            | 5/8            | 1-1/2          | 7-1/8       | 4     | CC       | L-REACH     | 30625     | \$48.86     | \$59.94   |
| JFXL-24                    | 3/4            | 3/4            | 2              | 8-1/4       | 4     | CC       | L-REACH     | 30637     | \$66.27     | \$81.38   |
| JFXL-32                    | 1              | 1              | 2-1/2          | 10-1/4      | 4     | CC       | L-REACH     | 30659     | \$108.62    | \$131.00  |

## 4 OR MORE FLUTE STANDARD "CENTER CUTTING" M-42 COBALT

O.D.  
Tolerance  
+.0000-.0015



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-----------|
| JF-4M          | 1/8            | 3/8            | 3/8            | 2-5/16      | 4     | CC       | REG         | 26507     | \$12.85     | \$18.37   |
| JF-6M          | 3/16           | 3/8            | 1/2            | 2-3/8       | 4     | CC       | REG         | 26511     | \$12.85     | \$18.37   |
| JF-8M          | 1/4            | 3/8            | 5/8            | 2-1/2       | 4     | CC       | REG         | 26515     | \$12.85     | \$18.37   |
| JF-10M         | 5/16           | 3/8            | 3/4            | 2-1/2       | 4     | CC       | REG         | 26519     | \$12.85     | \$18.37   |

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## 4 OR MORE FLUTE STANDARD "CENTER CUTTING" M-42 COBALT

O.D.  
Tolerance  
+.0015-.0000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIALN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| JF-12M         | 3/8            | 3/8            | 3/4            | 2-1/2       | 4     | CC       | REG         | 26523     | \$12.85     | \$18.37     |
| JF-14M         | 7/16           | 3/8            | 1              | 2-11/16     | 4     | CC       | REG         | 26527     | \$17.60     | \$23.79     |
| JF-16M         | 1/2            | 1/2            | 1-1/4          | 3-1/4       | 4     | CC       | REG         | 26531     | \$18.30     | \$25.01     |
| JF-16M6        | 1/2            | 1/2            | 1-1/4          | 3-1/4       | 6     | CC       | REG         | 26535     | \$18.30     | \$25.01     |
| JF-18M         | 9/16           | 1/2            | 1-3/8          | 3-3/8       | 4     | CC       | REG         | 26539     | \$24.84     | \$34.79     |
| JF-20M         | 5/8            | 5/8            | 1-5/8          | 3-3/4       | 4     | CC       | REG         | 26543     | \$23.78     | \$33.71     |
| JF-20M6        | 5/8            | 5/8            | 1-5/8          | 3-3/4       | 6     | CC       | REG         | 26547     | \$27.07     | \$37.00     |
| JF-24YM        | 3/4            | 3/4            | 1-5/8          | 3-7/8       | 4     | CC       | REG         | 26551     | \$27.07     | \$41.90     |
| JF-24YM6       | 3/4            | 3/4            | 1-5/8          | 3-7/8       | 6     | CC       | REG         | 26555     | \$29.58     | \$44.42     |
| JF-28M         | 7/8            | 7/8            | 1-7/8          | 4-1/8       | 4     | CC       | REG         | 26559     | \$35.57     | \$55.85     |
| JF-32YM        | 1              | 1              | 2              | 4-1/2       | 4     | CC       | REG         | 26563     | \$40.59     | \$61.37     |
| JF-32YM6       | 1              | 1              | 2              | 4-1/2       | 6     | CC       | REG         | 26567     | \$44.08     | \$64.85     |
| JF-32ZM        | 1              | 3/4            | 1-7/8          | 4-1/8       | 4     | CC       | REG         | 26568     | \$43.59     | \$64.36     |
| JF-40YM        | 1-1/4          | 1-1/4          | 2              | 4-1/2       | 6     | CC       | REG         | 26571     | \$72.58     | \$99.20     |
| JF-40ZM        | 1-1/4          | 1-1/4          | 2              | 4-1/2       | 4     | CC       | REG         | 26575     | \$65.14     | \$91.76     |
| JF-48XM        | 1-1/2          | 1-1/4          | 2              | 4-1/2       | 6     | CC       | REG         | 26579     | \$87.33     | \$119.20    |
| JF-64AM        | 2              | 1-1/4          | 2              | 4-1/2       | 4     | CC       | REG         | 26587     | \$135.93    | \$183.92    |
| JF-64BM        | 2              | 1-1/4          | 2              | 4-1/2       | 6     | CC       | REG         | 26591     | \$135.93    | \$183.92    |
| JFM-8M         | 1/4            | 3/8            | 3/4            | 2-9/16      | 4     | CC       | MED         | 29210     | \$10.65     | \$16.17     |
| JFM-12M        | 3/8            | 3/8            | 1-1/8          | 2-7/8       | 4     | CC       | MED         | 29214     | \$10.65     | \$16.17     |
| JFM-16M        | 1/2            | 1/2            | 1-1/2          | 3-1/2       | 4     | CC       | MED         | 29216     | \$17.23     | \$23.95     |
| JFM-20M        | 5/8            | 5/8            | 1-7/8          | 4           | 4     | CC       | MED         | 29218     | \$23.05     | \$35.58     |
| JFM-24YM       | 3/4            | 3/4            | 2              | 4-1/4       | 4     | CC       | MED         | 29220     | \$35.08     | \$49.91     |
| JFM-24YM6      | 3/4            | 3/4            | 2              | 4-1/4       | 6     | CC       | MED         | 29222     | \$35.08     | \$49.91     |
| JFM-32M        | 1              | 1              | 3              | 5-1/2       | 4     | CC       | MED         | 29224     | \$54.12     | \$76.84     |
| JFM-32M6       | 1              | 1              | 3              | 5-1/2       | 6     | CC       | MED         | 29226     | \$62.63     | \$85.35     |
| JFM-40M        | 1-1/4          | 1-1/4          | 3              | 5-1/2       | 4     | CC       | MED         | 29228     | \$82.73     | \$112.12    |
| JFM-40M6       | 1-1/4          | 1-1/4          | 3              | 5-1/2       | 6     | CC       | MED         | 29230     | \$82.73     | \$112.12    |
| JFM-48M6       | 1-1/2          | 1-1/4          | 3              | 5-1/2       | 6     | CC       | MED         | 29234     | \$104.46    | \$141.54    |
| JFL-8M         | 1/4            | 3/8            | 1-1/4          | 3-1/8       | 4     | CC       | LONG        | 28007     | \$15.74     | \$21.28     |
| JFL-10M        | 5/16           | 3/8            | 1-3/8          | 3-1/8       | 4     | CC       | LONG        | 28011     | \$15.74     | \$21.28     |
| JFL-12M        | 3/8            | 3/8            | 1-1/2          | 3-1/4       | 4     | CC       | LONG        | 28015     | \$15.74     | \$21.28     |
| JFL-14M        | 7/16           | 1/2            | 1-3/4          | 3-3/4       | 4     | CC       | LONG        | 28019     | \$24.68     | \$31.39     |
| JFL-16M        | 1/2            | 1/2            | 2              | 4           | 4     | CC       | LONG        | 28023     | \$23.30     | \$33.30     |
| JFL-16M6       | 1/2            | 1/2            | 2              | 4           | 6     | CC       | LONG        | 28027     | \$23.30     | \$33.30     |
| JFL-20M        | 5/8            | 5/8            | 2-1/2          | 4-5/8       | 4     | CC       | LONG        | 28031     | \$31.03     | \$43.56     |
| JFL-20M6       | 5/8            | 5/8            | 2-1/2          | 4-5/8       | 6     | CC       | LONG        | 28035     | \$31.03     | \$43.56     |
| JFL-24M        | 3/4            | 3/4            | 3              | 5-1/4       | 4     | CC       | LONG        | 28039     | \$34.61     | \$51.25     |
| JFL-24M6       | 3/4            | 3/4            | 3              | 5-1/4       | 6     | CC       | LONG        | 28043     | \$40.10     | \$56.76     |
| JFL-28M        | 7/8            | 7/8            | 3-1/2          | 5-3/4       | 4     | CC       | LONG        | 28047     | \$51.13     | \$72.64     |
| JFL-32M        | 1              | 1              | 4              | 6-1/2       | 4     | CC       | LONG        | 28051     | \$62.63     | \$88.48     |
| JFL-32M6       | 1              | 1              | 4              | 6-1/2       | 6     | CC       | LONG        | 28055     | \$71.14     | \$96.98     |
| JFL-40M        | 1-1/4          | 1-1/4          | 4              | 6-1/2       | 4     | CC       | LONG        | 28059     | \$85.15     | \$119.24    |
| JFL-40XM       | 1-1/4          | 1-1/4          | 4              | 6-1/2       | 6     | CC       | LONG        | 28063     | \$93.75     | \$127.84    |
| JFL-48M        | 1-1/2          | 1-1/4          | 4              | 6-1/2       | 6     | CC       | LONG        | 28067     | \$107.69    | \$147.34    |
| JFL-64AM       | 2              | 1-1/4          | 4              | 6-1/2       | 4     | CC       | LONG        | 28071     | \$169.41    | \$228.67    |
| JFL-64BM       | 2              | 1-1/4          | 4              | 6-1/2       | 6     | CC       | LONG        | 28075     | \$169.41    | \$228.67    |
| JFL-64-4M      | 2              | 2              | 4              | 7-3/4       | 6     | CC       | LONG        | 28079     | \$254.82    | \$324.25    |
| JFL-64-6M      | 2              | 2              | 6              | 9-3/4       | 6     | CC       | LONG        | 28083     | \$305.03    | \$399.01    |
| JFX-16M        | 1/2            | 1/2            | 3              | 5           | 4     | CC       | X-LONG      | 30017     | \$26.10     | \$38.26     |
| JFX-20M        | 5/8            | 5/8            | 4              | 6-1/8       | 4     | CC       | X-LONG      | 30025     | \$37.11     | \$53.57     |
| JFX-24M        | 3/4            | 3/4            | 4              | 6-1/4       | 4     | CC       | X-LONG      | 30033     | \$45.14     | \$65.47     |
| JFX-24M6       | 3/4            | 3/4            | 4              | 6-1/4       | 6     | CC       | X-LONG      | 30037     | \$51.13     | \$71.45     |
| JFX-32M        | 1              | 1              | 6              | 8-1/2       | 4     | CC       | X-LONG      | 30045     | \$76.64     | \$106.35    |
| JFX-32M6       | 1              | 1              | 6              | 8-1/2       | 6     | CC       | X-LONG      | 30049     | \$85.15     | \$119.24    |
| JFX-40M        | 1-1/4          | 1-1/4          | 4              | 6-1/2       | 4     | CC       | X-LONG      | 30053     | \$107.69    | \$147.34    |
| JFX-40M6       | 1-1/4          | 1-1/4          | 4              | 6-1/2       | 6     | CC       | X-LONG      | 30057     | \$127.84    | \$172.64    |

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## 4 FLUTE DOUBLE END "CENTER CUTTING" M-42 COBALT

O.D  
Tolerance  
+.0000-.0015



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIALN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| JXB-4M         | 1/8            | 3/8            | 3/16           | 2-3/4       | 4     | CC       | STUB        | 30107     | \$16.10     | \$21.63     |
| JXB-5M         | 5/32           | 3/8            | 15/64          | 2-3/4       | 4     | CC       | STUB        | 30113     | \$16.10     | \$21.63     |
| JXB-6M         | 3/16           | 3/8            | 9/32           | 2-3/4       | 4     | CC       | STUB        | 30119     | \$16.10     | \$21.63     |
| JXB-7M         | 7/32           | 3/8            | 21/64          | 2-7/8       | 4     | CC       | STUB        | 30125     | \$16.10     | \$21.63     |
| JXB-8M         | 1/4            | 3/8            | 3/8            | 2-7/8       | 4     | CC       | STUB        | 30131     | \$16.10     | \$21.63     |
| JB-4M          | 1/8            | 3/8            | 3/8            | 3-1/16      | 4     | CC       | REG         | 25508     | \$17.49     | \$23.01     |
| JB-5M          | 5/32           | 3/8            | 7/16           | 3-1/8       | 4     | CC       | REG         | 25510     | \$18.76     | \$24.28     |
| JB-6M          | 3/16           | 3/8            | 1/2            | 3-1/4       | 4     | CC       | REG         | 25514     | \$17.49     | \$23.01     |
| JB-6AM         | 13/64          | 3/8            | 9/16           | 3-1/4       | 4     | CC       | REG         | 25515     | \$22.06     | \$27.58     |
| JB-7M          | 7/32           | 3/8            | 9/16           | 3-1/4       | 4     | CC       | REG         | 25516     | \$18.76     | \$24.28     |
| JB-8M          | 1/4            | 3/8            | 5/8            | 3-3/8       | 4     | CC       | REG         | 25520     | \$17.49     | \$23.01     |
| JB-10M         | 5/16           | 3/8            | 3/4            | 3-1/2       | 4     | CC       | REG         | 25526     | \$17.49     | \$23.01     |
| JB-12M *       | 3/8            | 3/8            | 3/4            | 3-1/2       | 4     | CC       | REG         | 25532     | \$17.49     | \$23.01     |
| JB-12AM        | 25/64          | 1/2            | 1              | 4-1/8       | 4     | CC       | REG         | 25533     | \$32.52     | \$42.53     |
| JB-13M         | 13/32          | 1/2            | 1              | 4-1/8       | 4     | CC       | REG         | 25534     | \$27.94     | \$37.95     |
| JB-14M         | 7/16           | 1/2            | 1              | 4-1/8       | 4     | CC       | REG         | 25536     | \$26.10     | \$36.11     |
| JB-16M *       | 1/2            | 1/2            | 1              | 4-1/8       | 4     | CC       | REG         | 25538     | \$26.75     | \$36.76     |
| JB-17M         | 17/32          | 5/8            | 1-3/8          | 5           | 4     | CC       | REG         | 25539     | \$43.60     | \$58.14     |
| JB-18M         | 9/16           | 5/8            | 1-3/8          | 5           | 4     | CC       | REG         | 25540     | \$35.08     | \$49.63     |
| JB-19M         | 19/32          | 5/8            | 1-3/8          | 5           | 4     | CC       | REG         | 25542     | \$43.60     | \$58.14     |
| JB-20M *       | 5/8            | 5/8            | 1-3/8          | 5           | 4     | CC       | REG         | 25544     | \$34.11     | \$48.66     |
| JB-21M         | 21/32          | 3/4            | 1-5/8          | 5-5/8       | 4     | CC       | REG         | 25546     | \$55.69     | \$72.34     |
| JB-24M *       | 3/4            | 3/4            | 1-5/8          | 5-5/8       | 4     | CC       | REG         | 25550     | \$43.11     | \$59.76     |
| JB-32M *       | 1              | 1              | 1-7/8          | 6-3/8       | 4     | CC       | REG         | 25562     | \$71.14     | \$96.98     |

\* When cutting diameter and shank diameter are the same the tolerance is +.0000-.0025

## 4 FLUTE "METRIC FLUTES" NON C/C M-42 COBALT

O.D  
Tolerance  
+.0015-.0000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIALN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| MSF-4A         | 4.5MM          | 3/8            | 1/2            | 2-3/8       | 4     | NCC      | REG         | 30903     | \$10.78     | \$15.42     |
| MSF-5          | 5MM            | 3/8            | 5/8            | 2-1/2       | 4     | NCC      | REG         | 30904     | \$10.78     | \$16.30     |
| MSF-6          | 6MM            | 3/8            | 5/8            | 2-1/2       | 4     | NCC      | REG         | 30910     | \$10.78     | \$16.30     |
| MSF-7          | 7MM            | 3/8            | 5/8            | 2-1/2       | 4     | NCC      | REG         | 30916     | \$10.78     | \$16.30     |
| MSF-8          | 8MM            | 3/8            | 3/4            | 2-1/2       | 4     | NCC      | REG         | 30922     | \$10.78     | \$16.30     |
| MSF-9          | 9MM            | 3/8            | 3/4            | 2-1/2       | 4     | NCC      | REG         | 30928     | \$10.78     | \$16.30     |
| MSF-10         | 10MM           | 3/8            | 1              | 2-11/16     | 4     | NCC      | REG         | 30934     | \$13.53     | \$19.72     |
| MSF-11         | 11MM           | 3/8            | 1              | 2-11/16     | 4     | NCC      | REG         | 30940     | \$14.28     | \$20.47     |
| MSF-11A        | 11.5MM         | 3/8            | 1              | 2-11/16     | 4     | NCC      | REG         | 30943     | \$14.28     | \$20.47     |
| MSF-12         | 12MM           | 3/8            | 1              | 2-11/16     | 4     | NCC      | REG         | 30946     | \$14.54     | \$20.72     |
| MSF-13         | 13MM           | 1/2            | 1-3/8          | 3-3/8       | 4     | NCC      | REG         | 30952     | \$16.67     | \$26.59     |
| MSF-14         | 14MM           | 1/2            | 1-3/8          | 3-3/8       | 4     | NCC      | REG         | 30958     | \$16.67     | \$26.59     |
| MSF-15         | 15MM           | 1/2            | 1-3/8          | 3-3/8       | 4     | NCC      | REG         | 30964     | \$17.41     | \$27.35     |
| MSF-16         | 16MM           | 5/8            | 1-5/8          | 3-3/4       | 4     | NCC      | REG         | 30967     | \$19.92     | \$31.71     |
| MSF-18         | 18MM           | 3/4            | 1-5/8          | 3-7/8       | 4     | NCC      | REG         | 30973     | \$22.42     | \$37.26     |
| MSF-20         | 20MM           | 3/4            | 1-7/8          | 4-1/8       | 4     | NCC      | REG         | 30979     | \$28.69     | \$48.98     |

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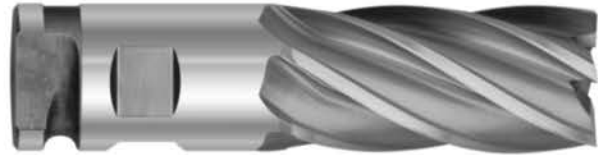
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PROUD TO BE MADE IN THE U.S.A.



## M-7 HSS & M-42 COBALT 4 OR MORE FLUTES HEAVY DUTY SURE-LOCK NCC

O.D  
Tolerance  
+.0015-.0000



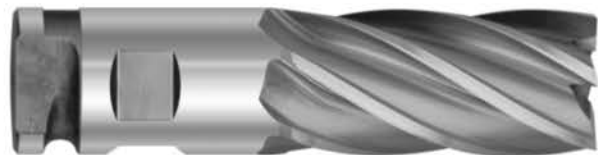
| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIALN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| PLC-64-2       | 2              | 2*             | 2              | 5-3/4       | 6     | NCC      | REG         | 32504     | \$148.62    | \$178.98    |
| PLC-64Y-2      | 2              | 2*             | 2              | 5-3/4       | 4     | NCC      | REG         | 32007     | \$166.66    | \$197.01    |
| PLC-64-3       | 2              | 2*             | 3              | 6-3/4       | 6     | NCC      | REG         | 32508     | \$148.62    | \$182.49    |
| PLC-64-4       | 2              | 2*             | 4              | 7-3/4       | 6     | NCC      | REG         | 32512     | \$149.15    | \$188.83    |
| PLC-64Y-4      | 2              | 2*             | 4              | 7-3/4       | 4     | NCC      | REG         | 32021     | \$146.53    | \$186.22    |
| PLC-64-6       | 2              | 2*             | 6              | 9-3/4       | 6     | NCC      | REG         | 32520     | \$183.65    | \$237.34    |
| PLC-64Y-6      | 2              | 2*             | 6              | 9-3/4       | 4     | NCC      | REG         | 32035     | \$181.04    | \$234.73    |
| PLC-64-8       | 2              | 2*             | 8              | 11-3/4      | 6     | NCC      | LONG        | 32524     | \$218.03    | \$292.73    |
| PLC-64Y-8      | 2              | 2*             | 8              | 11-3/4      | 4     | NCC      | LONG        | 32042     | \$215.42    | \$290.12    |
| PLC-64-10      | 2              | 2*             | 10             | 13-3/4      | 6     | NCC      | X-LONG      | 32530     | \$279.59    | \$372.98    |
| PLC-64-12      | 2              | 2*             | 12             | 15-3/4      | 6     | NCC      | X-LONG      | 32534     | \$307.43    | \$447.51    |
| PLC-80-4       | 2-1/2          | 2*             | 4              | 7-5/8       | 6     | NCC      | REG         | 32538     | \$232.15    | \$318.52    |
| PLC-80X-4      | 2-1/2          | 2-1/2*         | 4              | 8           | 6     | NCC      | REG         | 32550     | \$221.82    | \$333.88    |
| PLC-80X-6      | 2-1/2          | 2-1/2*         | 6              | 10          | 6     | NCC      | REG         | 32554     | \$276.32    | \$421.07    |
| PLC-80X-8      | 2-1/2          | 2-1/2*         | 8              | 12          | 6     | NCC      | X-LONG      | 32558     | \$324.69    | \$502.12    |
| PLC-80X-10     | 2-1/2          | 2-1/2*         | 10             | 14          | 6     | NCC      | X-LONG      | 32562     | \$363.12    | \$561.56    |
| PLC-80X-12     | 2-1/2          | 2-1/2*         | 12             | 16          | 6     | NCC      | X-LONG      | 32566     | \$411.49    | \$656.61    |
| PLC-80Y-6      | 2-1/2          | 2*             | 6              | 9-5/8       | 4     | NCC      | REG         | 32063     | \$284.16    | \$412.57    |
| PLC-80-8       | 2-1/2          | 2*             | 8              | 11-5/8      | 6     | NCC      | LONG        | 32546     | \$318.80    | \$482.23    |
| PLC-80Y-8      | 2-1/2          | 2*             | 8              | 11-5/8      | 4     | NCC      | LONG        | 32070     | \$272.40    | \$435.83    |
| PLC-80XY-4     | 2-1/2          | 2-1/2*         | 4              | 8           | 4     | NCC      | REG         | 32077     | \$233.72    | \$320.09    |
| PLC-80XY-6     | 2-1/2          | 2-1/2*         | 6              | 10          | 4     | NCC      | REG         | 32084     | \$270.06    | \$414.79    |
| PLC-80XY-8     | 2-1/2          | 2-1/2*         | 8              | 12          | 4     | NCC      | LONG        | 32091     | \$318.54    | \$495.98    |
| PLC-96-4       | 3              | 2-1/2*         | 4              | 7-5/8       | 8     | NCC      | REG         | 33510     | \$308.74    | \$395.12    |
| PLC-96-5       | 3              | 2-1/2*         | 5              | 8-5/8       | 8     | NCC      | REG         | 33520     | \$351.10    | \$463.15    |
| PLC-96B-5      | 3              | 2-1/2*         | 5              | 8-5/8       | 6     | NCC      | REG         | 32574     | \$344.82    | \$456.88    |
| PLC-96-6       | 3              | 2-1/2*         | 6              | 9-5/8       | 8     | NCC      | REG         | 33530     | \$384.81    | \$513.22    |
| PLC-96B-6      | 3              | 2-1/2*         | 6              | 9-5/8       | 6     | NCC      | REG         | 32578     | \$396.45    | \$524.85    |
| PLC-96-8       | 3              | 2-1/2*         | 8              | 11-5/8      | 8     | NCC      | REG         | 33540     | \$467.95    | \$631.37    |
| PLC-96B-8      | 3              | 2-1/2*         | 8              | 11-5/8      | 6     | NCC      | REG         | 32582     | \$481.54    | \$644.97    |
| PLC-96-10      | 3              | 2-1/2*         | 10             | 13-5/8      | 8     | NCC      | LONG        | 33550     | \$576.84    | \$768.27    |
| PLC-96-12      | 3              | 2-1/2*         | 12             | 15-5/8      | 8     | NCC      | LONG        | 33560     | \$606.64    | \$829.64    |
| PLC-64-4M      | 2              | 2*             | 4              | 7-3/4       | 6     | NCC      | X-LONG      | 33015     | \$164.14    | \$233.59    |
| PLC-64Y-6M     | 2              | 2*             | 6              | 9-3/4       | 4     | NCC      | X-LONG      | 33042     | \$214.38    | \$308.35    |

\* HEAVY DUTY SURE-LOCK SHANK

GREEN SHADED AREA REPRESENTS TIALN

## 4 OR MORE FLUTES HEAVY DUTY SURE-LOCK C/C M-7 HSS

O.D  
Tolerance  
+.0015-.0000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIALN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| PLCJ-64Y-4     | 2              | 2*             | 4              | 7-3/4       | 4     | CC       | REG         | 34009     | \$175.94    | \$215.63    |
| PLCJ-64-6      | 2              | 2*             | 6              | 9-3/4       | 6     | CC       | REG         | 34511     | \$197.51    | \$251.20    |
| PLCJ-64Y-6     | 2              | 2*             | 6              | 9-3/4       | 4     | CC       | REG         | 34018     | \$215.02    | \$268.71    |
| PLCJ-64-8      | 2              | 2*             | 8              | 11-3/4      | 6     | CC       | LONG        | 34517     | \$235.68    | \$310.38    |
| PLCJ-64Y-8     | 2              | 2*             | 8              | 11-3/4      | 4     | CC       | LONG        | 34027     | \$254.63    | \$329.33    |
| PLCJ-64-10     | 2              | 2*             | 10             | 13-3/4      | 6     | CC       | X-LONG      | 34523     | \$309.79    | \$403.17    |

\* HEAVY DUTY SURE-LOCK SHANK

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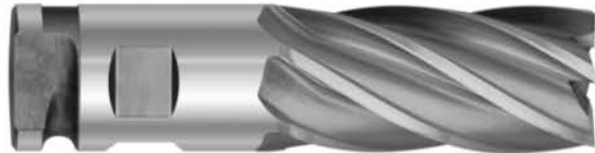
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## 4 OR MORE FLUTES HEAVY DUTY SURE-LOCK M-7 HSS "CENTER CUTTING"

O.D  
Tolerance  
+.0015-.0000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TiN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-----------|
| PLCJ-80-4      | 2-1/2          | 2*             | 4              | 7-5/8       | 6     | CC       | REG         | 34529     | \$268.22    | \$354.60  |
| PLCJ-80X-4     | 2-1/2          | 2-1/2*         | 4              | 8           | 6     | CC       | REG         | 34547     | \$257.76    | \$369.83  |
| PLCJ-80XY-4    | 2-1/2          | 2-1/2*         | 4              | 8           | 4     | CC       | REG         | 34055     | \$292.66    | \$404.73  |
| PLCJ-80Y-4     | 2-1/2          | 2*             | 4              | 7-5/8       | 4     | CC       | REG         | 34036     | \$292.66    | \$379.04  |
| PLCJ-80-6      | 2-1/2          | 2*             | 6              | 9-5/8       | 6     | CC       | REG         | 34535     | \$320.38    | \$448.78  |
| PLCJ-80XY-6    | 2-1/2          | 2-1/2*         | 6              | 10          | 4     | CC       | REG         | 34072     | \$349.26    | \$494.01  |
| PLCJ-80XY-8    | 2-1/2          | 2-1/2*         | 8              | 12          | 4     | CC       | LONG        | 34081     | \$391.09    | \$568.53  |
| PLCJ-80Y-8     | 2-1/2          | 2*             | 8              | 11-5/8      | 4     | CC       | LONG        | 34054     | \$391.09    | \$554.51  |
| PLCJ-80X-8     | 2-1/2          | 2-1/2*         | 8              | 12          | 6     | CC       | X-LONG      | 34559     | \$361.03    | \$538.46  |
| PLCJ-80X-10    | 2-1/2          | 2-1/2*         | 10             | 14          | 6     | CC       | X-LONG      | 34565     | \$393.19    | \$591.62  |
| PLCJ-80X-12    | 2-1/2          | 2-1/2*         | 12             | 16          | 6     | CC       | X-LONG      | 34571     | \$441.41    | \$686.54  |
| PLCJ-96B-4     | 3              | 2-1/2*         | 4              | 7-5/8       | 6     | CC       | REG         | 34577     | \$359.98    | \$446.36  |
| PLCJ-96B-6     | 3              | 2-1/2*         | 6              | 9-5/8       | 6     | CC       | REG         | 34583     | \$438.54    | \$566.94  |

\* HEAVY DUTY SURE-LOCK SHANK

## 4 & 6 FLUTE BALL END M-7 HSS

O.D  
Tolerance  
+.0015-.0000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TiN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-----------|
| RK-8           | 1/4            | 3/8            | 5/8            | 2-1/2       | 4     | BAL      | REG         | 37002     | \$22.06     | \$25.21   |
| RK-8B          | 1/4            | 3/8            | 1-1/4          | 3-1/16      | 4     | BAL      | LONG        | 37005     | \$25.19     | \$28.34   |
| RK-10          | 5/16           | 3/8            | 3/4            | 2-1/2       | 4     | BAL      | REG         | 37011     | \$22.06     | \$25.21   |
| RK-12          | 3/8            | 3/8            | 3/4            | 2-1/2       | 4     | BAL      | REG         | 37017     | \$24.68     | \$27.84   |
| RK-12B         | 3/8            | 3/8            | 1-1/2          | 3-1/4       | 4     | BAL      | MED         | 37020     | \$28.57     | \$31.72   |
| RK-12D         | 3/8            | 3/8            | 2-1/2          | 4-1/4       | 4     | BAL      | LONG        | 37026     | \$31.32     | \$35.58   |
| RK-16          | 1/2            | 1/2            | 1              | 3           | 4     | BAL      | X-LONG      | 37029     | \$25.93     | \$29.77   |
| RK-16A         | 1/2            | 1/2            | 1-1/2          | 3-1/2       | 4     | BAL      | MED         | 37032     | \$38.97     | \$42.80   |
| RK-16B         | 1/2            | 1/2            | 2              | 4           | 4     | BAL      | LONG        | 37035     | \$33.83     | \$39.55   |
| RK-16D         | 1/2            | 1/2            | 3              | 5           | 4     | BAL      | X-LONG      | 37041     | \$44.61     | \$51.56   |
| RK-16E         | 1/2            | 1/2            | 1-1/4          | 3-1/4       | 4     | BAL      | MED         | 37042     | \$28.57     | \$32.40   |
| RK-20          | 5/8            | 5/8            | 1-1/4          | 3-3/8       | 4     | BAL      | REG         | 37044     | \$41.21     | \$46.90   |
| RK-24          | 3/4            | 3/4            | 1-1/2          | 3-3/4       | 4     | BAL      | REG         | 37056     | \$49.24     | \$55.98   |

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## 4 & 6 FLUTE BALL END M-7 HSS

O.D.  
Tolerance  
+.0015-.0000



| CATALOG NUMBER          | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIN PRICE |
|-------------------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-----------|
| RK-24B                  | 3/4            | 3/4            | 3              | 5-1/4       | 4     | BAL      | REG         | 37062     | \$59.89     | \$69.40   |
| RK-24C                  | 3/4            | 1              | 3-3/4          | 6           | 4     | BAL      | REG         | 37065     | \$70.29     | \$81.90   |
| RK-24D                  | 3/4            | 3/4            | 4-1/2          | 6-3/4       | 4     | BAL      | REG         | 37068     | \$74.68     | \$86.28   |
| RK-28                   | 7/8            | 7/8            | 1-7/8          | 4-1/8       | 4     | BAL      | REG         | 37070     | \$56.13     | \$67.71   |
| RK-32                   | 1              | 1              | 2              | 4-1/2       | 4     | BAL      | REG         | 37071     | \$84.57     | \$96.45   |
| RK-32A                  | 1              | 1              | 3              | 5-1/2       | 4     | BAL      | REG         | 37074     | \$90.08     | \$103.07  |
| RK-32B                  | 1              | 1              | 4              | 6-1/2       | 4     | BAL      | REG         | 37077     | \$96.72     | \$111.49  |
| RK-32D                  | 1              | 1              | 6              | 8-1/2       | 4     | BAL      | REG         | 37080     | \$119.40    | \$136.37  |
| RK-40                   | 1-1/4          | 1-1/4          | 2              | 4-1/2       | 4     | BAL      | REG         | 37083     | \$99.73     | \$114.93  |
| RK-40A                  | 1-1/4          | 1-1/4          | 3              | 5-1/2       | 4     | BAL      | REG         | 37086     | \$113.39    | \$130.17  |
| RK-40B                  | 1-1/4          | 1-1/4          | 4              | 6-1/2       | 6     | BAL      | REG         | 37089     | \$126.92    | \$146.40  |
| RK-40C                  | 1-1/4          | 1-1/4          | 6              | 8-1/2       | 6     | BAL      | REG         | 37092     | \$165.51    | \$190.00  |
| RK-48                   | 1-1/2          | 1-1/4          | 2              | 4-1/2       | 6     | BAL      | REG         | 37094     | \$141.96    | \$160.16  |
| RK-48A                  | 1-1/2          | 1-1/4          | 4              | 6-1/2       | 6     | BAL      | REG         | 37096     | \$152.67    | \$175.33  |
| RK-48B                  | 1-1/2          | 1-1/4          | 6              | 8-1/2       | 6     | BAL      | REG         | 37098     | \$183.91    | \$211.80  |
| PLD-64-4                | 2              | 2*             | 4              | 7-3/4       | 6     | BAL      | REG         | 35005     | \$222.35    | \$262.03  |
| PLD-64-5                | 2              | 2*             | 5              | 8-3/4       | 6     | BAL      | REG         | 35007     | \$267.70    | \$314.39  |
| PLD-64-6                | 2              | 2*             | 6              | 9-3/4       | 6     | BAL      | REG         | 35010     | \$273.98    | \$327.67  |
| PLD-64-8                | 2              | 2*             | 8              | 11-3/4      | 6     | BAL      | LONG        | 35015     | \$322.34    | \$397.05  |
| PLD-80-4                | 2-1/2          | 2*             | 4              | 7-5/8       | 6     | BAL      | REG         | 35020     | \$268.22    | \$354.60  |
| PLD-80-5                | 2-1/2          | 2*             | 5              | 8-5/8       | 6     | BAL      | REG         | 35022     | \$320.38    | \$432.44  |
| PLD-80-6                | 2-1/2          | 2*             | 6              | 9-5/8       | 6     | BAL      | REG         | 35025     | \$320.38    | \$448.78  |
| <b>EXTRA LONG REACH</b> |                |                |                |             |       |          |             |           |             |           |
| RKXL-16                 | 1/2            | 1/2            | 1-1/4          | 6           | 4     | BAL      | XL-REACH    | 37225     | \$48.73     | \$57.05   |
| RKXL-24                 | 3/4            | 3/4            | 2              | 8-1/4       | 4     | BAL      | XL-REACH    | 37239     | \$85.95     | \$101.05  |
| RKXL-32                 | 1              | 1              | 2-1/2          | 10-1/4      | 4     | BAL      | XL-REACH    | 37261     | \$140.95    | \$163.32  |

\* HEAVY DUTY SURE-LOCK SHANK

## 4 & 6 FLUTE BALL END M-42 COBALT

O.D.  
Tolerance  
+.0015-.0000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-----------|
| RK-4M          | 1/8            | 3/8            | 3/8            | 2-5/16      | 4     | BAL      | REG         | 37508     | \$22.33     | \$27.85   |
| RK-6M          | 3/16           | 3/8            | 1/2            | 2-3/8       | 4     | BAL      | REG         | 37516     | \$22.33     | \$27.85   |
| RK-8M          | 1/4            | 3/8            | 5/8            | 2-7/16      | 4     | BAL      | REG         | 37524     | \$22.33     | \$27.85   |
| RK-12M         | 3/8            | 3/8            | 3/4            | 2-1/2       | 4     | BAL      | REG         | 37540     | \$25.23     | \$30.75   |
| RK-14M         | 7/16           | 3/8            | 1              | 2-11/16     | 4     | BAL      | REG         | 37548     | \$33.07     | \$39.26   |
| RK-16M         | 1/2            | 1/2            | 1-1/4          | 3-1/4       | 4     | BAL      | REG         | 37556     | \$29.88     | \$36.59   |
| RK-20M         | 5/8            | 5/8            | 1-5/8          | 3-3/4       | 4     | BAL      | REG         | 37564     | \$43.72     | \$53.66   |
| RK-24M         | 3/4            | 3/4            | 1-5/8          | 3-7/8       | 4     | BAL      | REG         | 37572     | \$52.22     | \$67.05   |
| RK-24M6        | 3/4            | 3/4            | 1-5/8          | 3-7/8       | 6     | BAL      | REG         | 37575     | \$52.22     | \$67.05   |
| RK-32M         | 1              | 1              | 2              | 4-1/2       | 4     | BAL      | REG         | 37580     | \$85.33     | \$106.09  |
| RK-32M6        | 1              | 1              | 2              | 4-1/2       | 6     | BAL      | REG         | 37582     | \$85.33     | \$106.09  |
| RK-40M         | 1-1/4          | 1-1/4          | 2              | 4-1/2       | 6     | BAL      | REG         | 37588     | \$104.86    | \$131.49  |
| RK-48M         | 1-1/2          | 1-1/4          | 2              | 4-1/2       | 6     | BAL      | REG         | 37596     | \$142.48    | \$174.34  |

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## 4 FLUTE DOUBLE END BALL M-7 HSS

O.D  
Tolerance  
+.0000-.0015



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-----------|
| RKK-4          | 1/8            | 3/8            | 3/8            | 3-1/16      | 4     | BAL      | REG         | 37103     | \$35.58     | \$38.74   |
| RKK-5          | 5/32           | 3/8            | 7/16           | 3-1/8       | 4     | BAL      | REG         | 37106     | \$35.58     | \$38.74   |
| RKK-6          | 3/16           | 3/8            | 1/2            | 3-1/4       | 4     | BAL      | REG         | 37109     | \$35.58     | \$38.74   |
| RKK-8          | 1/4            | 3/8            | 5/8            | 3-3/8       | 4     | BAL      | REG         | 37115     | \$35.58     | \$38.74   |
| RKK-10         | 5/16           | 3/8            | 3/4            | 3-1/2       | 4     | BAL      | REG         | 37121     | \$35.58     | \$38.74   |
| RKK-12 *       | 3/8            | 3/8            | 3/4            | 3-1/2       | 4     | BAL      | REG         | 37127     | \$35.58     | \$38.74   |
| RKK-16 *       | 1/2            | 1/2            | 1              | 4-1/8       | 4     | BAL      | REG         | 37130     | \$46.60     | \$52.34   |
| RKK-24 *       | 3/4            | 3/4            | 1-5/8          | 5-5/8       | 4     | BAL      | REG         | 37136     | \$88.95     | \$98.48   |
| RKK-28 *       | 7/8            | 7/8            | 1-7/8          | 6-1/8       | 4     | BAL      | REG         | 37139     | \$112.13    | \$125.89  |

\* When cutting diameter and shank diameter are the same the tolerance is +.0000-.0025

## 4 OR MORE FLUTE STANDARD NON "CENTER CUTTING" M-7 HSS

O.D  
Tolerance  
+.0015-.0000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-----------|
| SF-4           | 1/8            | 3/8            | 3/8            | 2-5/16      | 4     | NCC      | REG         | 41003     | \$9.40      | \$12.55   |
| SF-7           | 7/32           | 3/8            | 5/8            | 2-1/2       | 4     | NCC      | REG         | 41006     | \$9.53      | \$12.68   |
| SF-8           | 1/4            | 3/8            | 5/8            | 2-1/2       | 4     | NCC      | REG         | 41007     | \$9.40      | \$12.55   |
| SF-9           | 9/32           | 3/8            | 5/8            | 2-1/2       | 4     | NCC      | REG         | 41008     | \$9.53      | \$12.68   |
| SF-10          | 5/16           | 3/8            | 3/4            | 2-1/2       | 4     | NCC      | REG         | 41009     | \$9.40      | \$12.55   |
| SF-12          | 3/8            | 3/8            | 3/4            | 2-1/2       | 4     | NCC      | REG         | 41011     | \$9.40      | \$12.55   |
| SF-13          | 13/32          | 3/8            | 1              | 2-11/16     | 4     | NCC      | REG         | 41012     | \$13.40     | \$16.94   |
| SF-14          | 7/16           | 3/8            | 1              | 2-11/16     | 4     | NCC      | REG         | 41013     | \$12.78     | \$16.31   |
| SF-16          | 1/2            | 1/2            | 1-1/4          | 3-1/4       | 4     | NCC      | REG         | 41015     | \$12.78     | \$16.62   |
| SF-16X         | 1/2            | 3/8            | 1              | 2-11/16     | 4     | NCC      | REG         | 41017     | \$12.78     | \$16.31   |
| SF-17          | 17/32          | 1/2            | 1-3/8          | 3-3/8       | 4     | NCC      | REG         | 41018     | \$16.54     | \$22.21   |
| SF-18          | 9/16           | 1/2            | 1-3/8          | 3-3/8       | 4     | NCC      | REG         | 41019     | \$16.29     | \$21.96   |
| SF-19          | 19/32          | 1/2            | 1-3/8          | 3-3/8       | 4     | NCC      | REG         | 41020     | \$19.80     | \$25.47   |
| SF-20          | 5/8            | 5/8            | 1-5/8          | 3-3/4       | 4     | NCC      | REG         | 41021     | \$19.55     | \$25.22   |
| SF-20X         | 5/8            | 1/2            | 1-3/8          | 3-3/8       | 4     | NCC      | REG         | 41023     | \$17.92     | \$23.59   |
| SF-21          | 21/32          | 5/8            | 1-5/8          | 3-3/4       | 4     | NCC      | REG         | 41024     | \$22.42     | \$29.17   |
| SF-22          | 11/16          | 5/8            | 1-5/8          | 3-3/4       | 4     | NCC      | REG         | 41025     | \$20.92     | \$27.66   |
| SF-22X         | 11/16          | 1/2            | 1-5/8          | 3-5/8       | 4     | NCC      | REG         | 41027     | \$19.80     | \$26.54   |
| SF-24          | 3/4            | 5/8            | 1-5/8          | 3-3/4       | 4     | NCC      | REG         | 41029     | \$21.43     | \$28.17   |
| SF-24X         | 3/4            | 1/2            | 1-5/8          | 3-5/8       | 4     | NCC      | REG         | 41031     | \$21.43     | \$28.17   |
| SF-24Y         | 3/4            | 3/4            | 1-5/8          | 3-7/8       | 4     | NCC      | REG         | 41033     | \$22.30     | \$30.78   |
| SF-25          | 25/32          | 3/4            | 1-7/8          | 4-1/8       | 4     | NCC      | REG         | 41034     | \$29.82     | \$41.40   |
| SF-26          | 13/16          | 5/8            | 1-7/8          | 4           | 6     | NCC      | REG         | 41035     | \$27.43     | \$39.03   |
| SF-26A         | 13/16          | 3/4            | 1-7/8          | 4-1/8       | 4     | NCC      | REG         | 41036     | \$27.81     | \$39.41   |
| SF-28          | 7/8            | 7/8            | 1-7/8          | 4-1/8       | 4     | NCC      | REG         | 41039     | \$27.94     | \$39.52   |
| SF-28X         | 7/8            | 5/8            | 1-7/8          | 4           | 6     | NCC      | REG         | 41041     | \$28.32     | \$39.90   |
| SF-28Y         | 7/8            | 1/2            | 1-5/8          | 3-5/8       | 6     | NCC      | REG         | 41043     | \$29.44     | \$39.29   |
| SF-28Z         | 7/8            | 3/4            | 1-7/8          | 4-1/8       | 4     | NCC      | REG         | 41045     | \$29.31     | \$40.91   |

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## 4 OR MORE FLUTE STANDARD NON C/C M-7 HSS

O.D.  
Tolerance  
+.0000-.0015



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-----------|
| SF-32          | 1              | 7/8            | 1-7/8          | 4-1/8       | 4     | NCC      | REG         | 41053     | \$31.82     | \$43.70   |
| SF-32A         | 1              | 1/2            | 1-3/4          | 3-3/4       | 6     | NCC      | REG         | 41055     | \$32.70     | \$44.15   |
| SF-32X         | 1              | 5/8            | 1-7/8          | 4           | 6     | NCC      | REG         | 41057     | \$32.33     | \$44.21   |
| SF-32Y         | 1              | 1              | 2              | 4-1/2       | 4     | NCC      | REG         | 41059     | \$33.70     | \$45.58   |
| SF-32Z         | 1              | 3/4            | 1-7/8          | 4-1/8       | 4     | NCC      | REG         | 41061     | \$31.82     | \$43.70   |
| SF-34          | 1-1/16         | 1              | 2              | 4-1/2       | 6     | NCC      | REG         | 41062     | \$53.50     | \$68.71   |
| SF-34Z         | 1-1/16         | 3/4            | 2              | 4-1/4       | 6     | NCC      | REG         | 41163     | \$54.75     | \$69.96   |
| SF-36          | 1-1/8          | 1              | 2              | 4-1/2       | 6     | NCC      | REG         | 41063     | \$45.86     | \$61.06   |
| SF-36Y         | 1-1/8          | 3/4            | 1-3/4          | 4           | 6     | NCC      | REG         | 41067     | \$49.49     | \$64.70   |
| SF-38Z         | 1-3/16         | 3/4            | 2              | 4-1/4       | 6     | NCC      | REG         | 41169     | \$59.51     | \$74.72   |
| SF-40          | 1-1/4          | 1              | 2              | 4-1/2       | 6     | NCC      | REG         | 41069     | \$49.87     | \$65.08   |
| SF-40A         | 1-1/4          | 3/4            | 1-3/4          | 4           | 6     | NCC      | REG         | 41071     | \$54.00     | \$69.20   |
| SF-40Z         | 1-1/4          | 1-1/4          | 2              | 4-1/2       | 4     | NCC      | REG         | 41077     | \$58.89     | \$74.10   |
| SF-44          | 1-3/8          | 1              | 2              | 4-1/2       | 6     | NCC      | REG         | 41079     | \$59.34     | \$77.55   |
| SF-44Z         | 1-3/8          | 3/4            | 2              | 4-1/4       | 6     | NCC      | REG         | 41080     | \$67.97     | \$86.18   |
| SF-46          | 1-7/16         | 1              | 2              | 4-1/2       | 6     | NCC      | REG         | 41180     | \$74.37     | \$92.58   |
| SF-48          | 1-1/2          | 1              | 2              | 4-1/2       | 6     | NCC      | REG         | 41081     | \$66.92     | \$85.14   |
| SF-48X         | 1-1/2          | 1-1/4          | 2              | 4-1/2       | 6     | NCC      | REG         | 41083     | \$66.92     | \$85.14   |
| SF-48Z         | 1-1/2          | 3/4            | 1-1/2          | 3-3/4       | 6     | NCC      | REG         | 41086     | \$73.06     | \$89.66   |
| SF-52          | 1-5/8          | 1-1/4          | 2              | 4-1/2       | 6     | NCC      | REG         | 41087     | \$71.76     | \$94.63   |
| SF-54          | 1-11/16        | 1-1/4          | 2              | 4-1/2       | 6     | NCC      | REG         | 41088     | \$96.07     | \$118.95  |
| SF-56Z         | 1-3/4          | 3/4            | 2              | 4-1/4       | 6     | NCC      | REG         | 41187     | \$80.65     | \$103.52  |
| SF-60          | 1-7/8          | 1-1/4          | 2              | 4-1/2       | 8     | NCC      | REG         | 41091     | \$82.74     | \$110.17  |
| SF-62          | 1-15/16        | 1-1/4          | 2              | 4-1/2       | 6     | NCC      | REG         | 41092     | \$108.36    | \$135.78  |
| SF-64          | 2              | 1-1/4          | 2              | 4-1/2       | 8     | NCC      | REG         | 41093     | \$92.94     | \$120.35  |
| SF-64A         | 2              | 1-1/4          | 2              | 4-1/2       | 4     | NCC      | REG         | 41095     | \$99.08     | \$126.51  |
| SF-64Z         | 2              | 3/4            | 2              | 4-1/4       | 6     | NCC      | REG         | 41096     | \$92.81     | \$120.23  |
| SF-72          | 2-1/4          | 1-1/4          | 2              | 4-1/2       | 6     | NCC      | REG         | 41099     | \$145.88    | \$194.91  |
| SF-80          | 2-1/2          | 1-1/4          | 2              | 4-1/2       | 6     | NCC      | REG         | 41098     | \$197.12    | \$246.15  |
| SFM-32         | 1              | 1              | 3              | 5-1/2       | 4     | NCC      | MED         | 43508     | \$43.72     | \$56.71   |
| SFM-40         | 1-1/4          | 1-1/4          | 3              | 5-1/2       | 4     | NCC      | MED         | 43514     | \$66.15     | \$82.94   |
| SFM-40X        | 1-1/4          | 1-1/4          | 3              | 5-1/2       | 6     | NCC      | MED         | 43520     | \$66.15     | \$82.94   |
| SFM-48         | 1-1/2          | 1-1/4          | 3              | 5-1/2       | 4     | NCC      | MED         | 43526     | \$83.79     | \$103.65  |
| SFM-48X        | 1-1/2          | 1-1/4          | 3              | 5-1/2       | 6     | NCC      | MED         | 43532     | \$83.79     | \$103.65  |
| SFM-64         | 2              | 1-1/4          | 3              | 5-1/2       | 6     | NCC      | MED         | 43544     | \$139.34    | \$169.69  |
| SFM-72         | 2-1/4          | 1-1/4          | 3              | 5-1/2       | 6     | NCC      | MED         | 43550     | \$166.01    | \$221.21  |
| SFM-80         | 2-1/2          | 1-1/4          | 3              | 5-1/2       | 8     | NCC      | MED         | 43556     | \$178.56    | \$233.77  |
| SFL-6          | 3/16           | 3/8            | 1              | 2-7/8       | 4     | NCC      | LONG        | 42504     | \$13.53     | \$16.69   |
| SFL-8          | 1/4            | 3/8            | 1-1/4          | 3-1/8       | 4     | NCC      | LONG        | 42506     | \$12.40     | \$15.57   |
| SFL-10         | 5/16           | 3/8            | 1-3/8          | 3-1/8       | 4     | NCC      | LONG        | 42509     | \$12.40     | \$15.57   |
| SFL-12         | 3/8            | 3/8            | 1-1/2          | 3-1/4       | 4     | NCC      | LONG        | 42512     | \$12.15     | \$15.31   |
| SFL-14         | 7/16           | 1/2            | 1-3/8          | 3-3/4       | 4     | NCC      | LONG        | 42515     | \$17.16     | \$21.00   |
| SFL-16         | 1/2            | 1/2            | 2              | 4           | 4     | NCC      | LONG        | 42518     | \$16.67     | \$22.39   |
| SFL-18         | 9/16           | 1/2            | 2              | 4           | 4     | NCC      | LONG        | 42520     | \$23.56     | \$30.72   |
| SFL-20         | 5/8            | 5/8            | 2-1/2          | 4-5/8       | 4     | NCC      | LONG        | 42521     | \$23.56     | \$30.72   |
| SFL-24         | 3/4            | 3/4            | 3              | 5-1/4       | 4     | NCC      | LONG        | 42527     | \$28.69     | \$38.21   |
| SFL-26         | 13/16          | 3/4            | 3              | 5-1/4       | 4     | NCC      | LONG        | 42531     | \$35.96     | \$48.25   |
| SFL-28         | 7/8            | 7/8            | 3-1/2          | 5-3/4       | 4     | NCC      | LONG        | 42533     | \$35.96     | \$48.25   |
| SFL-32         | 1              | 1              | 4              | 6-1/2       | 4     | NCC      | LONG        | 42536     | \$48.73     | \$63.51   |
| SFL-36         | 1-1/8          | 1              | 4              | 6-1/2       | 6     | NCC      | LONG        | 42539     | \$64.39     | \$83.88   |

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## 4 OR MORE FLUTE STANDARD NON C/C M-7 HSS

O.D.  
Tolerance  
+.0000-.0015



| CATALOG NUMBER          | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TiN PRICE |
|-------------------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-----------|
| SFL-40                  | 1-1/4          | 1              | 4              | 6-1/2       | 6     | NCC      | LONG        | 42542     | \$76.05     | \$95.54   |
| SFL-40X                 | 1-1/4          | 1-1/4          | 4              | 6-1/2       | 6     | NCC      | LONG        | 42545     | \$76.05     | \$95.54   |
| SFL-40Y                 | 1-1/4          | 1-1/4          | 4              | 6-1/2       | 4     | NCC      | LONG        | 42548     | \$79.43     | \$98.92   |
| SFL-44                  | 1-3/8          | 1              | 4              | 6-1/2       | 6     | NCC      | LONG        | 42551     | \$87.18     | \$109.84  |
| SFL-48                  | 1-1/2          | 1-1/4          | 4              | 6-1/2       | 6     | NCC      | LONG        | 42554     | \$94.77     | \$117.42  |
| SFL-64                  | 2              | 1-1/4          | 4              | 6-1/2       | 8     | NCC      | LONG        | 42566     | \$151.11    | \$184.97  |
| SFL-64B                 | 2              | 1-1/4          | 4              | 6-1/2       | 6     | NCC      | LONG        | 42572     | \$158.30    | \$192.16  |
| SFX-8                   | 1/4            | 3/8            | 1-3/4          | 3-1/2       | 4     | NCC      | X-LONG      | 44007     | \$14.79     | \$17.94   |
| SFX-12                  | 3/8            | 3/8            | 2-1/2          | 4-1/4       | 4     | NCC      | X-LONG      | 44017     | \$15.79     | \$20.05   |
| SFX-16                  | 1/2            | 1/2            | 3              | 5           | 4     | NCC      | X-LONG      | 44022     | \$20.29     | \$27.26   |
| SFX-20                  | 5/8            | 5/8            | 4              | 6-1/8       | 4     | NCC      | X-LONG      | 44027     | \$29.44     | \$38.84   |
| SFX-20X                 | 5/8            | 1/2            | 4              | 6           | 4     | NCC      | X-LONG      | 44031     | \$29.44     | \$38.84   |
| SFX-24                  | 3/4            | 3/4            | 4              | 6-1/4       | 4     | NCC      | X-LONG      | 44037     | \$34.45     | \$46.07   |
| SFX-28                  | 7/8            | 7/8            | 5              | 7-1/4       | 4     | NCC      | X-LONG      | 44047     | \$45.60     | \$60.37   |
| SFX-32                  | 1              | 1              | 6              | 8-1/2       | 4     | NCC      | X-LONG      | 44052     | \$60.14     | \$77.11   |
| SFX-40                  | 1-1/4          | 1-1/4          | 6              | 8-1/2       | 6     | NCC      | X-LONG      | 44057     | \$90.34     | \$114.83  |
| SFX-40X                 | 1-1/4          | 1-1/4          | 6              | 8-1/2       | 4     | NCC      | X-LONG      | 44062     | \$90.34     | \$114.83  |
| SFX-48                  | 1-1/2          | 1-1/4          | 8              | 10-1/2      | 6     | NCC      | X-LONG      | 44067     | \$149.53    | \$181.06  |
| SFX-48X                 | 1-1/2          | 1-1/4          | 6              | 8-1/2       | 4     | NCC      | X-LONG      | 44072     | \$142.61    | \$170.51  |
| SFX-48Y                 | 1-1/2          | 1-1/4          | 6              | 8-1/2       | 6     | NCC      | X-LONG      | 44077     | \$142.61    | \$170.51  |
| <b>EXTRA LONG REACH</b> |                |                |                |             |       |          |             |           |             |           |
| SFXL-24                 | 3/4            | 3/4            | 2              | 8-1/4       | 4     | NCC      | XL-REACH    | 44736     | \$57.01     | \$72.10   |
| SFXL-32                 | 1              | 1              | 2-1/2          | 10-1/4      | 4     | NCC      | XL-REACH    | 44758     | \$93.47     | \$115.84  |
| SFXL-40                 | 1-1/4          | 1-1/4          | 3-1/2          | 12-1/2      | 6     | NCC      | XL-REACH    | 44776     | \$164.00    | \$195.32  |
| SFXL-64                 | 2              | 2*             | 4              | 15-1/4      | 6     | NCC      | XL-REACH    | 44781     | \$325.61    | \$465.68  |
| SFXL-80                 | 2-1/2          | 2-1/2*         | 4              | 15-3/4      | 6     | NCC      | XL-REACH    | 44792     | \$462.46    | \$684.24  |

\* Heavy Duty Sure-Lock Shank

## 4 OR MORE FLUTE STANDARD NON C/C M-42 COBALT

O.D.  
Tolerance  
+.0015-.0000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TiN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-----------|
| SF-4M          | 1/8            | 3/8            | 3/8            | 2-5/16      | 4     | NCC      | REG         | 42004     | \$9.66      | \$15.19   |
| SF-6M          | 3/16           | 3/8            | 1/2            | 2-3/8       | 4     | NCC      | REG         | 42006     | \$9.66      | \$15.19   |
| SF-8M          | 1/4            | 3/8            | 5/8            | 2-1/2       | 4     | NCC      | REG         | 42008     | \$9.66      | \$15.19   |
| SF-10M         | 5/16           | 3/8            | 3/4            | 2-1/2       | 4     | NCC      | REG         | 42010     | \$9.66      | \$15.19   |
| SF-12M         | 3/8            | 3/8            | 3/4            | 2-1/2       | 4     | NCC      | REG         | 42012     | \$9.66      | \$15.19   |
| SF-16M         | 1/2            | 1/2            | 1-1/4          | 3-1/4       | 4     | NCC      | REG         | 42016     | \$13.82     | \$20.53   |
| SF-20M         | 5/8            | 5/8            | 1-5/8          | 3-3/4       | 4     | NCC      | REG         | 42022     | \$20.73     | \$30.67   |
| SF-24YM        | 3/4            | 3/4            | 1-5/8          | 3-7/8       | 4     | NCC      | REG         | 42034     | \$24.05     | \$38.89   |
| SF-32YM        | 1              | 1              | 2              | 4-1/2       | 4     | NCC      | REG         | 42060     | \$34.11     | \$54.89   |
| SF-32YM6       | 1              | 1              | 2              | 4-1/2       | 6     | NCC      | REG         | 42062     | \$34.11     | \$54.89   |
| SF-32ZM        | 1              | 3/4            | 1-7/8          | 4-1/8       | 4     | NCC      | REG         | 42063     | \$32.18     | \$52.96   |
| SF-40YM        | 1-1/4          | 1-1/4          | 2              | 4-1/2       | 6     | NCC      | REG         | 42076     | \$65.14     | \$91.76   |
| SF-40ZM        | 1-1/4          | 1-1/4          | 2              | 4-1/2       | 4     | NCC      | REG         | 42078     | \$65.14     | \$91.76   |
| SF-48XM        | 1-1/2          | 1-1/4          | 2              | 4-1/2       | 6     | NCC      | REG         | 42084     | \$75.33     | \$107.20  |
| SF-48YM        | 1-1/2          | 1-1/4          | 2              | 4-1/2       | 4     | NCC      | REG         | 42086     | \$75.33     | \$107.20  |
| SF-64BM        | 2              | 1-1/4          | 2              | 4-1/2       | 6     | NCC      | REG         | 42096     | \$88.33     | \$136.34  |

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## 4 OR MORE FLUTE STANDARD NON C/C M-42 COBALT

O.D.  
Tolerance  
+.0015-.0000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TiAlN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-------------|
| SFL-8M         | 1/4            | 3/8            | 1-1/4          | 3-1/8       | 4     | NCC      | LONG        | 43009     | \$13.53     | \$19.05     |
| SFL-12M        | 3/8            | 3/8            | 1-1/2          | 3-1/4       | 4     | NCC      | LONG        | 43013     | \$13.53     | \$19.05     |
| SFL-16M        | 1/2            | 1/2            | 2              | 4           | 4     | NCC      | LONG        | 43017     | \$18.76     | \$28.77     |
| SFL-20M        | 5/8            | 5/8            | 2-1/2          | 4-5/8       | 4     | NCC      | LONG        | 43023     | \$26.10     | \$38.63     |
| SFL-24M        | 3/4            | 3/4            | 3              | 5-1/4       | 4     | NCC      | LONG        | 43035     | \$29.58     | \$46.23     |
| SFL-32M        | 1              | 1              | 4              | 6-1/2       | 4     | NCC      | LONG        | 43059     | \$52.09     | \$77.94     |
| SFL-32M6       | 1              | 1              | 4              | 6-1/2       | 6     | NCC      | LONG        | 43061     | \$52.09     | \$77.94     |
| SFL-40XM       | 1-1/4          | 1-1/4          | 4              | 6-1/2       | 6     | NCC      | LONG        | 43075     | \$76.64     | \$110.73    |
| SFL-40YM       | 1-1/4          | 1-1/4          | 4              | 6-1/2       | 4     | NCC      | LONG        | 43077     | \$76.64     | \$110.73    |
| SFL-48M        | 1-1/2          | 1-1/4          | 4              | 6-1/2       | 6     | NCC      | LONG        | 43083     | \$91.05     | \$130.70    |
| SFL-48YM       | 1-1/2          | 1-1/4          | 4              | 6-1/2       | 4     | NCC      | LONG        | 43085     | \$91.05     | \$130.70    |
| SFL-64BM       | 2              | 1-1/4          | 4              | 6-1/2       | 6     | NCC      | LONG        | 43095     | \$128.47    | \$187.73    |
| SFX-8M         | 1/4            | 3/8            | 1-3/4          | 3-1/2       | 4     | NCC      | X-LONG      | 44510     | \$16.43     | \$21.95     |
| SFX-12M        | 3/8            | 3/8            | 2-1/2          | 4-1/4       | 4     | NCC      | X-LONG      | 44514     | \$18.08     | \$25.53     |
| SFX-16M        | 1/2            | 1/2            | 3              | 5           | 4     | NCC      | X-LONG      | 44518     | \$21.30     | \$33.46     |
| SFX-20M        | 5/8            | 5/8            | 4              | 6-1/8       | 4     | NCC      | X-LONG      | 44524     | \$32.66     | \$49.11     |
| SFX-24M        | 3/4            | 3/4            | 4              | 6-1/4       | 4     | NCC      | X-LONG      | 44536     | \$38.46     | \$58.79     |
| SFX-32M        | 1              | 1              | 6              | 8-1/2       | 4     | NCC      | X-LONG      | 44558     | \$69.19     | \$98.92     |
| SFX-32M6       | 1              | 1              | 6              | 8-1/2       | 6     | NCC      | X-LONG      | 44560     | \$69.19     | \$98.92     |
| SFX-40M        | 1-1/4          | 1-1/4          | 6              | 8-1/2       | 6     | NCC      | X-LONG      | 44576     | \$100.92    | \$143.80    |
| SFX-48XM       | 1-1/2          | 1-1/4          | 6              | 8-1/2       | 4     | NCC      | X-LONG      | 44589     | \$158.50    | \$207.30    |
| SFX-48YM       | 1-1/2          | 1-1/4          | 6              | 8-1/2       | 6     | NCC      | X-LONG      | 44591     | \$158.50    | \$207.30    |

## "RIGHT HAND CUT - LEFT HAND SPIRAL" 4 & 6 FLUTE LEFT HAND M-7 HSS

O.D.  
Tolerance  
+.0015-.0000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TiN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-----------|
| SSL-8          | 1/4            | 3/8            | 5/8            | 2-1/2       | 4     | NCC      | REG         | 52508     | \$18.79     | \$21.95   |
| SSL-10         | 5/16           | 3/8            | 3/4            | 2-1/2       | 4     | NCC      | REG         | 52510     | \$18.79     | \$21.95   |
| SSL-14         | 7/16           | 3/8            | 1              | 2-3/4       | 4     | NCC      | REG         | 52514     | \$23.43     | \$26.96   |
| SSL-24         | 3/4            | 3/4            | 1-3/4          | 4           | 4     | NCC      | REG         | 52524     | \$38.46     | \$46.95   |
| SSL-28         | 7/8            | 7/8            | 1-7/8          | 4-1/8       | 4     | NCC      | REG         | 52528     | \$52.24     | \$63.84   |
| SSL-32         | 1              | 1              | 2              | 4-1/2       | 4     | NCC      | REG         | 52532     | \$59.76     | \$71.64   |
| SSL-36         | 1-1/8          | 1              | 2              | 4-1/2       | 6     | NCC      | REG         | 52536     | \$81.31     | \$96.52   |
| SL-8           | 1/4            | 3/8            | 1-1/4          | 3-1/8       | 4     | NCC      | LONG        | 48012     | \$29.94     | \$33.11   |
| SL-12          | 3/8            | 3/8            | 1-1/2          | 3-1/4       | 4     | NCC      | LONG        | 48022     | \$21.68     | \$24.83   |
| SL-14          | 7/16           | 1/2            | 1-3/4          | 3-3/4       | 4     | NCC      | LONG        | 48027     | \$29.06     | \$32.91   |
| SL-16          | 1/2            | 1/2            | 2              | 4           | 4     | NCC      | LONG        | 48032     | \$32.08     | \$37.80   |
| SL-36          | 1-1/8          | 1              | 4              | 6-1/2       | 6     | NCC      | LONG        | 48057     | \$110.88    | \$130.36  |

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## 4,6 & 8 FLUTE BRIDGEPORT NON C/C M-7 HSS

O.D  
Tolerance  
+.0015-.0000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-----------|
| STF-32B        | 1              | 3/4            | 3/4            | 3           | 4     | NCC      | STUB        | 53026     | \$38.21     | \$49.67   |
| STF-36B        | 1-1/8          | 3/4            | 3/4            | 3           | 6     | NCC      | STUB        | 53041     | \$55.00     | \$72.29   |
| STF-40         | 1-1/4          | 1/2            | 3/4            | 2-3/4       | 6     | NCC      | STUB        | 53046     | \$62.77     | \$76.43   |
| STF-40B        | 1-1/4          | 3/4            | 3/4            | 3           | 6     | NCC      | STUB        | 53056     | \$59.51     | \$73.16   |
| STF-44B        | 1-3/8          | 3/4            | 3/4            | 3           | 6     | NCC      | STUB        | 53066     | \$62.74     | \$79.33   |
| STF-48B        | 1-1/2          | 3/4            | 3/4            | 3           | 6     | NCC      | STUB        | 53076     | \$69.14     | \$85.74   |
| STF-56         | 1-3/4          | 3/4            | 3/4            | 3           | 6     | NCC      | STUB        | 53081     | \$84.45     | \$106.16  |
| STF-64         | 2              | 3/4            | 3/4            | 3           | 8     | NCC      | STUB        | 53086     | \$101.04    | \$125.56  |

## T-SLOT CUTTERS M-7 HSS & M-42 COBALT

O.D  
Tolerance  
+.005-.005

FINISHING HSS

TRUNCATED COBALT



RHC



RBC-RHS

| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-----------|
| TSS-1          | 9/16           | 1/2            | 15/64          | 2-19/32     | 8     | NCC      | 1/4         | 56505     | \$50.12     | \$54.90   |
| TSS-4          | 31/32          | 3/4            | 25/64          | 3-7/16      | 8     | NCC      | 1/2         | 56529     | \$86.94     | \$98.40   |
| TSS-5          | 1-1/4          | 1              | 31/64          | 3-15/16     | 8     | NCC      | 5/8         | 56537     | \$122.40    | \$137.62  |
| TSS-6          | 1-15/32        | 1              | 5/8            | 4-7/16      | 10    | NCC      | 3/4         | 56545     | \$138.82    | \$156.27  |
| TSS-7          | 1-27/32        | 1-1/4          | 53/64          | 4-13/16     | 10    | NCC      | 1           | 56553     | \$219.63    | \$248.72  |
| TSS-8          | 2-7/32         | 1-1/4          | 1-3/32         | 5-3/8       | 12    | NCC      | 1-1/4       | 56561     | \$291.67    | \$344.59  |
| TSS-9          | 2-21/32        | 1-1/4          | 1-11/32        | 5-29/32     | 12    | NCC      | 1-1/2       | 56569     | \$364.59    | \$554.79  |
| TST-4M         | 31/32          | 3/4            | 25/64          | 3-7/16      | 5     | NCC      | 1/2         | 56830     | \$127.36    | \$147.39  |
| TST-5M         | 1-1/4          | 1              | 31/64          | 3-15/16     | 6     | NCC      | 5/8         | 56838     | \$160.69    | \$187.31  |
| TST-7M         | 1-27/32        | 1-1/4          | 53/64          | 4-13/16     | 6     | NCC      | 1           | 56854     | \$275.76    | \$326.66  |
| TST-8M         | 2-7/32         | 1-1/4          | 1-3/32         | 5-3/8       | 8     | NCC      | 1-1/4       | 56862     | \$361.46    | \$454.09  |
| TST-9M         | 2-21/32        | 1-1/4          | 1-11/32        | 5-29/32     | 10    | NCC      | 1-1/2       | 56870     | \$534.48    | \$867.33  |

GREEN SHADED AREA REPRESENTS TIALN

## 4 FLUTE DOUBLE END MINATURE PM-30 COBALT

O.D  
Tolerance  
+.001-.000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-----------|
| XBS-2          | 1/16           | 3/16           | 3/32           | 2           | 4     | NCC      | STUB        | 58008     | \$9.89      | \$11.86   |
| XBS-2A         | 5/64           | 3/16           | 5/32           | 2           | 4     | NCC      | STUB        | 58014     | \$9.89      | \$11.86   |
| XBS-3          | 3/32           | 3/16           | 5/32           | 2           | 4     | NCC      | STUB        | 58020     | \$9.89      | \$11.86   |
| XBS-3A         | 7/64           | 3/16           | 3/16           | 2           | 4     | NCC      | STUB        | 58026     | \$9.89      | \$11.86   |

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## 4 FLUTE DOUBLE END MINIATURE PM-30 COBALT

STUB & REG  
Tolerance  
-.001+.000  
LONG  
Tolerance  
+.001-.000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TiN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-----------|
| XBS-4          | 1/8            | 3/16           | 3/16           | 2           | 4     | NCC      | STUB        | 58032     | \$9.89      | \$11.86   |
| XBS-4A         | 9/64           | 3/16           | 7/32           | 2           | 4     | NCC      | STUB        | 58038     | \$9.89      | \$11.86   |
| XBS-5          | 5/32           | 3/16           | 1/4            | 2           | 4     | NCC      | STUB        | 58044     | \$9.89      | \$11.86   |
| XBS-5A         | 11/64          | 3/16           | 9/32           | 2           | 4     | NCC      | STUB        | 58050     | \$9.89      | \$11.86   |
| XBS-6          | 3/16           | 3/16           | 9/32           | 2           | 4     | NCC      | STUB        | 58056     | \$9.89      | \$11.86   |
| DBS-2          | 1/16           | 3/16           | 7/32           | 2-1/4       | 4     | NCC      | REG         | 16505     | \$11.03     | \$12.98   |
| DBS-2A         | 5/64           | 3/16           | 1/4            | 2-1/4       | 4     | NCC      | REG         | 16510     | \$11.03     | \$12.98   |
| DBS-3          | 3/32           | 3/16           | 5/16           | 2-1/4       | 4     | NCC      | REG         | 16515     | \$11.03     | \$12.98   |
| DBS-3A         | 7/64           | 3/16           | 11/32          | 2-1/4       | 4     | NCC      | REG         | 16520     | \$11.03     | \$12.98   |
| DBS-4          | 1/8            | 3/16           | 3/8            | 2-1/4       | 4     | NCC      | REG         | 16525     | \$11.03     | \$12.98   |
| DBS-5          | 5/32           | 3/16           | 7/16           | 2-1/4       | 4     | NCC      | REG         | 16535     | \$11.03     | \$12.98   |
| DBS-6          | 3/16           | 3/16           | 1/2            | 2-1/4       | 4     | NCC      | REG         | 16545     | \$11.03     | \$12.98   |
| DBX-2          | 1/16           | 3/16           | 7/32           | 2-1/2       | 4     | NCC      | LONG        | 17001     | \$13.78     | \$15.73   |
| DBX-3          | 3/32           | 3/16           | 1/2            | 2-5/8       | 4     | NCC      | LONG        | 17006     | \$13.78     | \$15.73   |
| DBX-4          | 1/8            | 3/16           | 3/4            | 3-1/8       | 4     | NCC      | LONG        | 17011     | \$13.78     | \$15.73   |

\* When cutting diameter and shank diameter are the same the tolerance is +.0000-.0025

## 2 FLUTE DOUBLE END MINIATURE PM-30 COBALT

STUB & REG  
Tolerance  
-.001+.000  
LONG  
Tolerance  
+.001-.000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TiN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-----------|
| XCS-2          | 1/16           | 3/16           | 3/32           | 2           | 2     | CC       | STUB        | 59021     | \$9.89      | \$11.86   |
| XCS-3          | 3/32           | 3/16           | 5/32           | 2           | 2     | CC       | STUB        | 59033     | \$9.89      | \$11.86   |
| XCS-4          | 1/8            | 3/16           | 3/16           | 2           | 2     | CC       | STUB        | 59045     | \$9.89      | \$11.86   |
| XCS-5          | 5/32           | 3/16           | 1/4            | 2           | 2     | CC       | STUB        | 59057     | \$9.89      | \$11.86   |
| XCS-6          | 3/16           | 3/16           | 9/32           | 2           | 2     | CC       | STUB        | 59069     | \$9.89      | \$11.86   |
| DCS-1          | 1/32           | 3/16           | 3/32           | 2-1/4       | 2     | CC       | REG         | 18505     | \$12.53     | \$14.48   |
| DCS-2          | 1/16           | 3/16           | 7/32           | 2-1/4       | 2     | CC       | REG         | 18515     | \$11.03     | \$12.98   |
| DCS-3          | 3/32           | 3/16           | 5/16           | 2-1/4       | 2     | CC       | REG         | 18525     | \$11.03     | \$12.98   |
| DCS-4          | 1/8            | 3/16           | 3/8            | 2-1/4       | 2     | CC       | REG         | 18535     | \$11.03     | \$12.98   |
| DCS-5          | 5/32           | 3/16           | 7/16           | 2-1/4       | 2     | CC       | REG         | 18545     | \$11.03     | \$12.98   |
| DCS-6          | 3/16           | 3/16           | 1/2            | 2-1/4       | 2     | CC       | REG         | 18555     | \$11.03     | \$12.98   |
| DCX-2          | 1/16           | 3/16           | 7/32           | 2-1/2       | 2     | CC       | LONG        | 19006     | \$13.78     | \$15.73   |
| DCX-3          | 3/32           | 3/16           | 9/32           | 2-5/8       | 2     | CC       | LONG        | 19011     | \$13.78     | \$15.73   |
| DCX-4          | 1/8            | 3/16           | 3/4            | 3-1/8       | 2     | CC       | LONG        | 19016     | \$13.78     | \$15.73   |
| DCX-6          | 3/16           | 3/16           | 1              | 3-3/8       | 2     | CC       | LONG        | 19026     | \$13.78     | \$15.73   |

\* When cutting diameter and shank diameter are the same the tolerance is +.0000-.0025

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## 2 FLUTE DOUBLE END BALL MINIATURE PM-30 COBALT

STUB & REG  
Tolerance  
-.001+ .000  
LONG  
Tolerance  
+.001-.000



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-----------|
| FER-1          | 1/32           | 3/16           | 3/64           | 2           | 2     | BAL      | STUB        | 21505     | \$18.30     | \$20.25   |
| FER-1A         | 3/64           | 3/16           | 1/16           | 2           | 2     | BAL      | STUB        | 21510     | \$18.30     | \$20.25   |
| FER-2          | 1/16           | 3/16           | 3/32           | 2           | 2     | BAL      | STUB        | 21515     | \$18.30     | \$20.25   |
| FER-3          | 3/32           | 3/16           | 5/32           | 2           | 2     | BAL      | STUB        | 21525     | \$17.29     | \$19.24   |
| FER-4          | 1/8            | 3/16           | 3/16           | 2           | 2     | BAL      | STUB        | 21535     | \$17.29     | \$19.24   |
| FER-5          | 5/32           | 3/16           | 1/4            | 2           | 2     | BAL      | STUB        | 21545     | \$17.29     | \$19.24   |
| FRR-1          | 1/32           | 3/16           | 3/32           | 2-1/4       | 2     | BAL      | REG         | 23007     | \$18.30     | \$20.25   |
| FRR-1A         | 3/64           | 3/16           | 5/32           | 2-1/4       | 2     | BAL      | REG         | 23012     | \$18.30     | \$20.25   |
| FRR-2          | 1/16           | 3/16           | 7/32           | 2-1/4       | 2     | BAL      | REG         | 23017     | \$17.29     | \$19.24   |
| FRR-3          | 3/32           | 3/16           | 5/16           | 2-1/4       | 2     | BAL      | REG         | 23027     | \$17.29     | \$19.24   |
| FRR-4          | 1/8            | 3/16           | 3/8            | 2-1/4       | 2     | BAL      | REG         | 23037     | \$17.29     | \$19.24   |
| FXR-2          | 1/16           | 3/16           | 7/32           | 2-1/2       | 2     | BAL      | LONG        | 24565     | \$22.55     | \$24.50   |
| FXR-6          | 3/16           | 3/16           | 1              | 3-3/8       | 2     | BAL      | LONG        | 24585     | \$22.55     | \$24.50   |

\* When cutting diameter and shank diameter are the same the tolerance is +.0000-.0025

## CORNER ROUNDERS "FRACTIONAL RADIUS" M-7 HSS & M-42 COBALT

O.D  
Tolerance  
+.001-.001



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FLT # | END TYPE | LENGTH TYPE | BRITE EDP | BRITE PRICE | TIN PRICE |
|----------------|----------------|----------------|----------------|-------------|-------|----------|-------------|-----------|-------------|-----------|
| SRC-1          | 7/16           | 3/8            | 5/16           | 2-1/2       | 4     | NCC      | 1/32        | 50002     | \$27.43     | \$30.97   |
| SRC-2          | 7/16           | 3/8            | 1/4            | 2-1/2       | 4     | NCC      | 1/16        | 50006     | \$27.81     | \$31.35   |
| SRC-3          | 1/2            | 3/8            | 1/4            | 2-1/2       | 4     | NCC      | 3/32        | 50010     | \$29.57     | \$33.11   |
| SRC-4          | 5/8            | 1/2            | 5/16           | 3           | 4     | NCC      | 1/8         | 50014     | \$36.33     | \$42.01   |
| SRC-5          | 3/4            | 1/2            | 5/16           | 3           | 4     | NCC      | 5/32        | 50018     | \$39.84     | \$46.58   |
| SRC-6          | 7/8            | 3/4            | 3/8            | 3-1/8       | 4     | NCC      | 3/16        | 50022     | \$45.10     | \$54.95   |
| SRC-6A         | 7/8            | 1/2            | 3/8            | 2-15/16     | 4     | NCC      | 3/16        | 50026     | \$45.10     | \$54.95   |
| SRC-8          | 1              | 3/4            | 3/8            | 3-1/4       | 4     | NCC      | 1/4         | 50030     | \$50.25     | \$61.69   |
| SRC-8A         | 1              | 1/2            | 3/8            | 3           | 4     | NCC      | 1/4         | 50034     | \$50.25     | \$61.69   |
| SRC-10         | 1-1/8          | 7/8            | 3/8            | 3-1/2       | 4     | NCC      | 5/16        | 50038     | \$61.52     | \$75.17   |
| SRC-10A        | 1-1/8          | 1/2            | 3/8            | 3-1/4       | 4     | NCC      | 5/16        | 50042     | \$61.52     | \$75.17   |
| SRC-12         | 1-1/4          | 7/8            | 3/8            | 3-3/4       | 4     | NCC      | 3/8         | 50046     | \$70.03     | \$83.69   |
| SRC-12A        | 1-1/4          | 1/2            | 3/8            | 3-1/2       | 4     | NCC      | 3/8         | 50050     | \$70.03     | \$83.69   |
| SRC-14A        | 1-3/8          | 3/4            | 3/8            | 3-3/4       | 4     | NCC      | 7/16        | 50058     | \$77.30     | \$93.20   |
| SRC-16         | 1-1/2          | 1              | 3/8            | 4-1/8       | 4     | NCC      | 1/2         | 50062     | \$82.06     | \$99.52   |
| SRC-16A        | 1-1/2          | 3/4            | 3/8            | 3-7/8       | 4     | NCC      | 1/2         | 50066     | \$82.06     | \$99.52   |
| SRC-20         | 1-15/16        | 1              | 9/16           | 4-1/4       | 4     | NCC      | 5/8         | 50070     | \$100.10    | \$126.39  |
| SRC-20A        | 1-15/16        | 3/4            | 9/16           | 4           | 4     | NCC      | 5/8         | 50074     | \$100.10    | \$126.39  |
| SRC-24         | 2-1/4          | 1              | 5/8            | 4-5/16      | 4     | NCC      | 3/4         | 50078     | \$112.63    | \$159.62  |
| SRC-24A        | 2-1/4          | 3/4            | 5/8            | 4-1/8       | 4     | NCC      | 3/4         | 50082     | \$112.63    | \$159.62  |
| SRC-32         | 3              | 1              | 7/8            | 4-3/4       | 4     | NCC      | 1           | 50086     | \$134.68    | \$181.68  |
| SRC-32A        | 3              | 3/4            | 7/8            | 4-1/2       | 4     | NCC      | 1           | 50090     | \$134.68    | \$181.68  |
| SRC-2M         | 7/16           | 3/8            | 1/4            | 2-1/2       | 4     | NCC      | 1/16        | 50107     | \$29.44     | \$35.64   |
| SRC-3M         | 1/2            | 3/8            | 1/4            | 2-1/2       | 4     | NCC      | 3/32        | 50111     | \$31.57     | \$37.76   |
| SRC-4M         | 5/8            | 1/2            | 5/16           | 3           | 4     | NCC      | 1/8         | 50115     | \$38.59     | \$48.52   |
| SRC-8M         | 1              | 3/4            | 3/8            | 3-1/4       | 4     | NCC      | 1/4         | 50131     | \$55.00     | \$75.03   |
| SRC-10M        | 1-1/8          | 7/8            | 3/8            | 3-1/2       | 4     | NCC      | 5/16        | 50139     | \$69.04     | \$92.94   |
| SRC-12M        | 1-1/4          | 7/8            | 3/8            | 3-3/4       | 4     | NCC      | 3/8         | 50147     | \$78.43     | \$102.33  |
| SRC-16M        | 1-1/2          | 1              | 3/8            | 4-1/8       | 4     | NCC      | 1/2         | 50163     | \$93.59     | \$124.13  |

GREEN SHADED AREA REPRESENTS TIALN



## TAPERED END MILL M-7 HSS



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FL # | END TYPE | DEG/ SIDE | BRITE EDP | BRITE PRICE | TIN PRICE |
|----------------|----------------|----------------|----------------|-------------|------|----------|-----------|-----------|-------------|-----------|
| T1/2-A-2       | 3/32           | 3/8            | 1/2            | 2-1/2       | 3    | CC       | 1/2       | 80202     | \$17.31     | \$20.08   |
| T1/2-A-3       | 3/32           | 3/8            | 3/4            | 2-1/2       | 3    | CC       | 1/2       | 80204     | \$18.63     | \$21.41   |
| T1/2-A-5       | 3/32           | 3/8            | 1-1/4          | 3-1/8       | 3    | CC       | 1/2       | 80206     | \$21.06     | \$23.84   |
| T1/2-B-1       | 1/8            | 3/8            | 1/4            | 2-1/2       | 3    | CC       | 1/2       | 80208     | \$16.20     | \$18.98   |
| T1/2-B-2       | 1/8            | 3/8            | 1/2            | 2-1/2       | 3    | CC       | 1/2       | 80210     | \$17.64     | \$20.42   |
| T1/2-B-3       | 1/8            | 3/8            | 3/4            | 2-1/2       | 3    | CC       | 1/2       | 80212     | \$18.63     | \$21.41   |
| T1/2-B-4       | 1/8            | 3/8            | 1              | 2-7/8       | 3    | CC       | 1/2       | 80214     | \$20.73     | \$23.50   |
| T1/2-B-5       | 1/8            | 3/8            | 1-1/4          | 3-1/8       | 3    | CC       | 1/2       | 80216     | \$22.16     | \$24.94   |
| T1/2-B-6       | 1/8            | 3/8            | 1-1/2          | 3-1/4       | 3    | CC       | 1/2       | 80218     | \$24.25     | \$27.03   |
| T1/2-C-3       | 3/16           | 3/8            | 3/4            | 2-1/2       | 3    | CC       | 1/2       | 80220     | \$18.63     | \$21.41   |
| T1/2-C-5       | 3/16           | 3/8            | 1-1/4          | 3-1/8       | 3    | CC       | 1/2       | 80222     | \$22.82     | \$25.59   |
| T1/2-C-7       | 3/16           | 3/8            | 1-3/4          | 3-7/8       | 3    | CC       | 1/2       | 80224     | \$28.55     | \$32.30   |
| T1/2-D-3       | 1/4            | 3/8            | 3/4            | 2-1/2       | 3    | CC       | 1/2       | 80226     | \$18.96     | \$21.74   |
| T1/2-D-5       | 1/4            | 3/8            | 1-1/4          | 3-1/8       | 3    | CC       | 1/2       | 80228     | \$23.92     | \$26.70   |
| T1/2-D-9       | 1/4            | 1/2            | 2-1/4          | 4-1/4       | 3    | CC       | 1/2       | 80230     | \$30.98     | \$36.02   |
| T1/2-D-13      | 1/4            | 1/2            | 3-1/4          | 5-1/2       | 3    | CC       | 1/2       | 80232     | \$41.23     | \$47.35   |
| T1/2-F-5       | 3/8            | 1/2            | 1-1/4          | 3-1/8       | 3    | CC       | 1/2       | 80234     | \$27.56     | \$30.93   |
| T1/2-F-9       | 3/8            | 1/2            | 2-1/4          | 4-1/4       | 3    | CC       | 1/2       | 80236     | \$34.29     | \$39.32   |
| T1/2-F-13      | 3/8            | 1/2            | 3-1/4          | 5-1/2       | 3    | CC       | 1/2       | 80238     | \$45.86     | \$59.07   |
| T1/2-H-5       | 1/2            | 1/2            | 1-1/4          | 3-1/8       | 3    | CC       | 1/2       | 80240     | \$33.51     | \$41.92   |
| T1/2-H-9       | 1/2            | 1/2            | 2-1/4          | 4-1/4       | 3    | CC       | 1/2       | 80242     | \$40.35     | \$51.58   |
| T1/2-H-13      | 1/2            | 1/2            | 3-1/4          | 5-1/2       | 3    | CC       | 1/2       | 80244     | \$47.95     | \$61.45   |
| T1/2-I-9       | 5/8            | 5/8            | 2-1/4          | 4-1/2       | 3    | CC       | 1/2       | 80246     | \$55.34     | \$70.07   |
| T1/2-I-13      | 5/8            | 5/8            | 3-1/4          | 5-1/2       | 3    | CC       | 1/2       | 80248     | \$60.30     | \$76.85   |
| T1/2-I-17      | 5/8            | 5/8            | 4-1/4          | 6-1/2       | 3    | CC       | 1/2       | 80250     | \$68.13     | \$86.83   |
| T1/2-J-9       | 3/4            | 3/4            | 2-1/4          | 4-1/2       | 3    | CC       | 1/2       | 80252     | \$58.09     | \$74.51   |
| T1/2-J-13      | 3/4            | 3/4            | 3-1/4          | 5-3/4       | 3    | CC       | 1/2       | 80254     | \$68.79     | \$87.70   |
| T1/2-J-17      | 3/4            | 3/4            | 4-1/4          | 7-3/4       | 3    | CC       | 1/2       | 80256     | \$81.80     | \$106.40  |
| T1/2-J-21      | 3/4            | 3/4            | 5-1/4          | 7-3/4       | 3    | CC       | 1/2       | 80258     | \$126.34    | \$157.01  |
| T1-A-2         | 3/32           | 3/8            | 1/2            | 2-1/2       | 3    | CC       | 1         | 80403     | \$17.64     | \$20.42   |
| T1-A-3         | 3/32           | 3/8            | 3/4            | 2-1/2       | 3    | CC       | 1         | 80405     | \$18.96     | \$21.74   |
| T1-A-5         | 3/32           | 3/8            | 1-1/4          | 3-1/8       | 3    | CC       | 1         | 80407     | \$21.36     | \$24.17   |
| T1-B-1         | 1/8            | 3/8            | 1/4            | 2-1/2       | 3    | CC       | 1         | 80409     | \$16.97     | \$19.76   |
| T1-B-2         | 1/8            | 3/8            | 1/2            | 2-1/2       | 3    | CC       | 1         | 80411     | \$17.75     | \$20.53   |
| T1-B-3         | 1/8            | 3/8            | 3/4            | 2-1/2       | 3    | CC       | 1         | 80413     | \$18.96     | \$21.74   |
| T1-B-4         | 1/8            | 3/8            | 1              | 2-7/8       | 3    | CC       | 1         | 80415     | \$21.06     | \$23.84   |
| T1-B-5         | 1/8            | 3/8            | 1-1/4          | 3-1/8       | 3    | CC       | 1         | 80417     | \$22.27     | \$25.04   |
| T1-B-6         | 1/8            | 3/8            | 1-1/2          | 3-1/4       | 3    | CC       | 1         | 80419     | \$24.59     | \$27.36   |
| T1-B-8         | 1/8            | 3/8            | 2              | 3-7/8       | 3    | CC       | 1         | 80421     | \$30.75     | \$34.51   |
| T1-C-3         | 3/16           | 3/8            | 3/4            | 2-1/2       | 3    | CC       | 1         | 80423     | \$19.07     | \$21.85   |
| T1-C-5         | 3/16           | 3/8            | 1-1/4          | 3-1/8       | 3    | CC       | 1         | 80425     | \$23.04     | \$28.82   |
| T1-C-8         | 3/16           | 3/8            | 2              | 3-7/8       | 3    | CC       | 1         | 80427     | \$32.30     | \$36.05   |
| T1-D-3         | 1/4            | 3/8            | 3/4            | 2-1/2       | 3    | CC       | 1         | 80429     | \$19.41     | \$22.18   |
| T1-D-5         | 1/4            | 3/8            | 1-1/4          | 3-1/8       | 3    | CC       | 1         | 80431     | \$24.03     | \$26.71   |
| T1-D-9         | 1/4            | 3/8            | 2-1/4          | 4-1/4       | 3    | CC       | 1         | 80433     | \$33.19     | \$36.93   |
| T1-D-13        | 1/4            | 1/2            | 3-1/4          | 5-1/2       | 3    | CC       | 1         | 80435     | \$44.98     | \$51.10   |
| T1-F-5         | 3/8            | 1/2            | 1-1/4          | 3-1/8       | 3    | CC       | 1         | 80437     | \$29.10     | \$32.48   |
| T1-F-9         | 3/8            | 1/2            | 2-1/4          | 4-1/4       | 3    | CC       | 1         | 80439     | \$36.93     | \$41.96   |
| T1-F-13        | 3/8            | 1/2            | 3-1/4          | 5-1/2       | 3    | CC       | 1         | 80441     | \$48.29     | \$54.40   |
| T1-H-5         | 1/2            | 1/2            | 1-1/4          | 3-1/8       | 3    | CC       | 1         | 80443     | \$34.06     | \$37.44   |
| T1-H-9         | 1/2            | 1/2            | 2-1/4          | 4-1/4       | 3    | CC       | 1         | 80445     | \$41.89     | \$46.92   |
| T1-H-13        | 1/2            | 1/2            | 3-1/4          | 5-1/2       | 3    | CC       | 1         | 80447     | \$51.93     | \$58.04   |
| T1-I-9         | 5/8            | 5/8            | 2-1/4          | 4-1/2       | 3    | CC       | 1         | 80449     | \$57.21     | \$63.52   |
| T1-I-13        | 5/8            | 5/8            | 3-1/4          | 5-1/2       | 3    | CC       | 1         | 80451     | \$62.29     | \$69.61   |
| T1-I-17        | 5/8            | 5/8            | 4-1/4          | 6-1/2       | 3    | CC       | 1         | 80453     | \$70.99     | \$79.26   |
| T1-J-9         | 3/4            | 3/4            | 2-1/4          | 4-3/4       | 3    | CC       | 1         | 80455     | \$62.50     | \$69.97   |
| T1-J-13        | 3/4            | 3/4            | 3-1/4          | 5-3/4       | 3    | CC       | 1         | 80457     | \$74.30     | \$82.68   |
| T1-J-17        | 3/4            | 3/4            | 4-1/4          | 6-3/4       | 3    | CC       | 1         | 80459     | \$90.28     | \$100.51  |
| T1-J-21        | 3/4            | 3/4            | 5-1/4          | 7-3/4       | 3    | CC       | 1         | 80461     | \$131.07    | \$142.90  |



## TAPERED END MILL M-7 HSS



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FL # | END TYPE | DEG/ SIDE | BRITE EDP | BRITE PRICE | TIN PRICE |
|----------------|----------------|----------------|----------------|-------------|------|----------|-----------|-----------|-------------|-----------|
| T12-A-2        | 3/32           | 3/8            | 1/2            | 2-1/2       | 3    | CC       | 1-1/2     | 80602     | \$24.21     | \$28.00   |
| T12-A-3        | 3/32           | 3/8            | 3/4            | 2-7/8       | 3    | CC       | 1-1/2     | 80604     | \$26.01     | \$29.80   |
| T12-A-4        | 3/32           | 3/8            | 1              | 2-7/8       | 3    | CC       | 1-1/2     | 80606     | \$28.72     | \$32.51   |
| T12-A-5        | 3/32           | 3/8            | 1-1/4          | 3-1/8       | 3    | CC       | 1-1/2     | 80608     | \$29.62     | \$33.40   |
| T12-A-6        | 3/32           | 3/8            | 1-1/2          | 3-1/4       | 3    | CC       | 1-1/2     | 80610     | \$31.42     | \$35.22   |
| T12-AX-4       | 7/64           | 3/8            | 1              | 2-7/8       | 3    | CC       | 1-1/2     | 80612     | \$29.02     | \$32.81   |
| T12-AX-6       | 7/64           | 3/8            | 1-1/2          | 3-1/4       | 3    | CC       | 1-1/2     | 80614     | \$31.87     | \$35.66   |
| T12-AX-8       | 7/64           | 3/8            | 2              | 3-7/8       | 3    | CC       | 1-1/2     | 80616     | \$36.68     | \$41.80   |
| T12-B-2        | 1/8            | 3/8            | 1/2            | 2-1/2       | 3    | CC       | 1-1/2     | 80618     | \$24.35     | \$28.14   |
| T12-B-3        | 1/8            | 3/8            | 3/4            | 2-1/2       | 3    | CC       | 1-1/2     | 80620     | \$26.01     | \$29.80   |
| T12-B-4        | 1/8            | 3/8            | 1              | 2-7/8       | 3    | CC       | 1-1/2     | 80622     | \$29.16     | \$32.96   |
| T12-B-5        | 1/8            | 3/8            | 1-1/4          | 3-1/8       | 3    | CC       | 1-1/2     | 80624     | \$31.12     | \$34.91   |
| T12-B-6        | 1/8            | 3/8            | 1-1/2          | 3-1/4       | 3    | CC       | 1-1/2     | 80626     | \$33.67     | \$37.47   |
| T12-B-8        | 1/8            | 3/8            | 2              | 3-7/8       | 3    | CC       | 1-1/2     | 80628     | \$43.00     | \$48.11   |
| T12-BX-4       | 5/32           | 3/8            | 1              | 2-7/8       | 3    | CC       | 1-1/2     | 80630     | \$29.32     | \$33.10   |
| T12-BX-5       | 5/32           | 3/8            | 1-1/4          | 3-1/4       | 3    | CC       | 1-1/2     | 80632     | \$31.57     | \$35.36   |
| T12-BX-6       | 5/32           | 3/8            | 1-1/2          | 3-1/4       | 3    | CC       | 1-1/2     | 80634     | \$33.67     | \$37.47   |
| T12-C-3        | 3/16           | 3/8            | 3/4            | 2-1/2       | 3    | CC       | 1-1/2     | 80636     | \$26.15     | \$29.96   |
| T12-C-5        | 3/16           | 3/8            | 1-1/4          | 3-1/8       | 3    | CC       | 1-1/2     | 80638     | \$31.57     | \$35.36   |
| T12-C-9        | 3/16           | 3/8            | 2-1/4          | 4           | 3    | CC       | 1-1/2     | 80640     | \$45.56     | \$50.66   |
| T12-D-3        | 1/4            | 3/8            | 3/4            | 2-1/2       | 3    | CC       | 1-1/2     | 80642     | \$26.61     | \$30.40   |
| T12-D-5        | 1/4            | 3/8            | 1-1/4          | 3-1/8       | 3    | CC       | 1-1/2     | 80644     | \$33.08     | \$36.86   |
| T12-D-9        | 1/4            | 1/2            | 2-1/4          | 4-1/4       | 3    | CC       | 1-1/2     | 80646     | \$44.05     | \$50.92   |
| T12-D-13       | 1/4            | 1/2            | 3-1/4          | 5-1/2       | 3    | CC       | 1-1/2     | 80648     | \$64.35     | \$72.69   |
| T12-F-5        | 3/8            | 1/2            | 1-1/4          | 3-1/8       | 3    | CC       | 1-1/2     | 80650     | \$40.30     | \$44.89   |
| T12-F-9        | 3/8            | 1/2            | 2-1/4          | 4-1/4       | 3    | CC       | 1-1/2     | 80652     | \$52.62     | \$59.49   |
| T12-F-13       | 3/8            | 5/8            | 3-1/4          | 5-1/2       | 3    | CC       | 1-1/2     | 80654     | \$67.06     | \$77.03   |
| T12-H-5        | 1/2            | 1/2            | 1-1/4          | 3-1/8       | 3    | CC       | 1-1/2     | 80656     | \$46.61     | \$51.20   |
| T12-H-9        | 1/2            | 1/2            | 2-1/4          | 4-1/4       | 3    | CC       | 1-1/2     | 80658     | \$58.93     | \$65.81   |
| T12-H-13       | 1/2            | 5/8            | 3-1/4          | 5-1/2       | 3    | CC       | 1-1/2     | 80660     | \$76.83     | \$86.80   |
| T12-I-9        | 5/8            | 3/4            | 2-1/4          | 4-1/2       | 3    | CC       | 1-1/2     | 80662     | \$84.95     | \$95.13   |
| T12-I-13       | 5/8            | 3/4            | 3-1/4          | 5-1/2       | 3    | CC       | 1-1/2     | 80664     | \$91.41     | \$102.83  |
| T12-I-17       | 5/8            | 3/4            | 4-1/4          | 6-1/2       | 3    | CC       | 1-1/2     | 80666     | \$103.89    | \$117.82  |
| T12-J-9        | 3/4            | 3/4            | 2-1/4          | 4-3/4       | 3    | CC       | 1-1/2     | 80668     | \$94.42     | \$104.59  |
| T12-J-21       | 3/4            | 1              | 5-1/4          | 7-3/4       | 3    | CC       | 1-1/2     | 80670     | \$193.95    | \$212.74  |
| T2-AA-2        | 1/16           | 3/8            | 1/2            | 2-5/8       | 3    | CC       | 2         | 80803     | \$28.72     | \$32.51   |
| T2-AA-4        | 1/16           | 3/8            | 1              | 2-7/8       | 3    | CC       | 2         | 80805     | \$30.23     | \$34.01   |
| T2-A-2         | 3/32           | 3/8            | 1/2            | 2-1/2       | 3    | CC       | 2         | 80807     | \$24.35     | \$28.14   |
| T2-A-3         | 3/32           | 3/8            | 3/4            | 2-1/2       | 3    | CC       | 2         | 80809     | \$26.15     | \$29.96   |
| T2-A-5         | 3/32           | 3/8            | 1-1/4          | 3-1/4       | 3    | CC       | 2         | 80811     | \$29.91     | \$33.71   |
| T2-B-2         | 1/8            | 3/8            | 1/2            | 2-1/2       | 3    | CC       | 2         | 80813     | \$24.81     | \$28.59   |
| T2-B-3         | 1/8            | 3/8            | 3/4            | 2-1/2       | 3    | CC       | 2         | 80815     | \$26.47     | \$30.25   |
| T2-B-4         | 1/8            | 3/8            | 1              | 2-7/8       | 3    | CC       | 2         | 80817     | \$29.62     | \$33.40   |
| T2-B-5         | 1/8            | 3/8            | 1-1/4          | 3-1/8       | 3    | CC       | 2         | 80819     | \$30.37     | \$34.15   |
| T2-B-6         | 1/8            | 3/8            | 1-1/2          | 3-1/4       | 3    | CC       | 2         | 80821     | \$33.98     | \$37.77   |
| T2-B-8         | 1/8            | 3/8            | 2              | 3-7/8       | 3    | CC       | 2         | 80823     | \$45.56     | \$50.66   |
| T2-C-3         | 3/16           | 3/8            | 3/4            | 2-1/2       | 3    | CC       | 2         | 80825     | \$26.61     | \$30.40   |
| T2-C-5         | 3/16           | 3/8            | 1-1/4          | 3-1/8       | 3    | CC       | 2         | 80827     | \$32.03     | \$35.81   |
| T2-C-8         | 3/16           | 3/8            | 2              | 3-7/8       | 3    | CC       | 2         | 80829     | \$46.45     | \$51.57   |
| T2-D-3         | 1/4            | 3/8            | 3/4            | 2-1/2       | 3    | CC       | 2         | 80831     | \$26.61     | \$30.40   |
| T2-D-5         | 1/4            | 3/8            | 1-1/4          | 3-1/8       | 3    | CC       | 2         | 80833     | \$33.53     | \$37.32   |
| T2-D-9         | 1/4            | 1/2            | 2-1/4          | 4-1/4       | 3    | CC       | 2         | 80835     | \$47.20     | \$54.08   |
| T2-D-13        | 1/4            | 1/2            | 3-1/4          | 5-1/2       | 3    | CC       | 2         | 80837     | \$70.21     | \$78.56   |
| T2-F-5         | 3/8            | 1/2            | 1-1/4          | 3-1/8       | 3    | CC       | 2         | 80839     | \$43.76     | \$48.35   |
| T2-F-9         | 3/8            | 1/2            | 2-1/4          | 4-1/4       | 3    | CC       | 2         | 80841     | \$54.88     | \$61.74   |
| T2-F-13        | 3/8            | 5/8            | 3-1/4          | 5-1/2       | 3    | CC       | 2         | 80843     | \$73.22     | \$83.20   |
| T2-H-5         | 1/2            | 1/2            | 1-1/4          | 3-1/8       | 3    | CC       | 2         | 80845     | \$47.06     | \$51.66   |
| T2-H-9         | 1/2            | 1/2            | 2-1/4          | 4-1/4       | 3    | CC       | 2         | 80847     | \$59.54     | \$66.41   |
| T2-H-13        | 1/2            | 5/8            | 3-1/4          | 5-1/2       | 3    | CC       | 2         | 80849     | \$87.50     | \$97.48   |
| T2-I-9         | 5/8            | 3/4            | 2-1/4          | 4-1/2       | 3    | CC       | 2         | 80851     | \$89.16     | \$99.33   |
| T2-I-13        | 5/8            | 3/4            | 3-1/4          | 5-1/2       | 3    | CC       | 2         | 80853     | \$94.42     | \$105.84  |
| T2-I-17        | 5/8            | 3/4            | 4-1/4          | 6-1/2       | 3    | CC       | 2         | 80855     | \$106.90    | \$120.83  |
| T2-J-9         | 3/4            | 3/4            | 2-1/4          | 4-1/2       | 3    | CC       | 2         | 80857     | \$104.79    | \$114.97  |
| T2-J-13        | 3/4            | 1              | 3-1/4          | 5-3/4       | 3    | CC       | 2         | 80859     | \$120.43    | \$136.01  |
| T2-J-21        | 3/4            | 1              | 5-1/4          | 7-3/4       | 3    | CC       | 2         | 80861     | \$205.82    | \$224.61  |



## TAPERED END MILL M-7 HSS



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FL # | END TYPE | DEG/ SIDE | BRITE EDP | BRITE PRICE | TIN PRICE |
|----------------|----------------|----------------|----------------|-------------|------|----------|-----------|-----------|-------------|-----------|
| T3-AA-2        | 1/16           | 3/8            | 1/2            | 2-5/8       | 3    | CC       | 3         | 81002     | \$28.27     | \$32.05   |
| T3-AA-3        | 1/16           | 3/8            | 3/4            | 2-7/8       | 3    | CC       | 3         | 81003     | \$28.86     | \$35.67   |
| T3-AA-4        | 1/16           | 3/8            | 1              | 2-7/8       | 3    | CC       | 3         | 81004     | \$30.66     | \$34.47   |
| T3-XA-6        | .070           | 3/8            | 1-1/2          | 3-1/4       | 3    | CC       | 3         | 81006     | \$33.53     | \$37.32   |
| T3-A-3         | 3/32           | 3/8            | 3/4            | 2-7/8       | 3    | CC       | 3         | 81008     | \$26.47     | \$30.25   |
| T3-A-4         | 3/32           | 3/8            | 1              | 2-7/8       | 3    | CC       | 3         | 81009     | \$29.02     | \$32.81   |
| T3-A-5         | 3/32           | 3/8            | 1-1/4          | 3-1/8       | 3    | CC       | 3         | 81010     | \$30.07     | \$33.86   |
| T3-A-6         | 3/32           | 3/8            | 1-1/2          | 3-1/4       | 3    | CC       | 3         | 81011     | \$31.57     | \$35.36   |
| T3-A-8         | 3/32           | 3/8            | 2              | 3-5/8       | 3    | CC       | 3         | 81012     | \$36.38     | \$40.17   |
| T3-A-10        | 3/32           | 3/8            | 2-1/2          | 4-1/2       | 3    | CC       | 3         | 81013     | \$44.20     | \$49.32   |
| T3-AX-4        | 7/64           | 3/8            | 1              | 2-7/8       | 3    | CC       | 3         | 81015     | \$28.86     | \$32.65   |
| T3-AX-6        | 7/64           | 3/8            | 1-1/2          | 3-1/4       | 3    | CC       | 3         | 81016     | \$32.17     | \$35.97   |
| T3-AX-8        | 7/64           | 3/8            | 2              | 3-5/8       | 3    | CC       | 3         | 81017     | \$36.54     | \$40.32   |
| T3-B-3         | 1/8            | 3/8            | 3/4            | 2-1/2       | 3    | CC       | 3         | 81019     | \$26.61     | \$30.40   |
| T3-B-4         | 1/8            | 3/8            | 1              | 2-7/8       | 3    | CC       | 3         | 81020     | \$29.77     | \$33.56   |
| T3-B-5         | 1/8            | 3/8            | 1-1/4          | 3-1/8       | 3    | CC       | 3         | 81021     | \$31.73     | \$35.52   |
| T3-B-6         | 1/8            | 3/8            | 1-1/2          | 3-1/4       | 3    | CC       | 3         | 81022     | \$36.68     | \$40.48   |
| T3-B-8         | 1/8            | 3/8            | 2              | 3-5/8       | 3    | CC       | 3         | 81023     | \$47.06     | \$50.85   |
| T3-B-10        | 1/8            | 3/8            | 2-1/2          | 4-1/2       | 3    | CC       | 3         | 81024     | \$53.83     | \$58.93   |
| T3-B-12        | 1/8            | 3/8            | 3              | 5           | 3    | CC       | 3         | 81025     | \$61.19     | \$69.54   |
| T3-B4-X        | 1/8            | 3/8            | 1-1/8          | 2-3/4       | 3    | CC       | 3         | 81027     | \$30.07     | \$33.86   |
| T3-BX-4        | 5/32           | 3/8            | 1              | 2-7/8       | 3    | CC       | 3         | 81029     | \$30.07     | \$33.86   |
| T3-BX-5        | 5/32           | 3/8            | 1-1/4          | 3-1/8       | 3    | CC       | 3         | 81030     | \$31.42     | \$35.22   |
| T3-BX-6        | 5/32           | 3/8            | 1-1/2          | 3-1/4       | 3    | CC       | 3         | 81031     | \$32.62     | \$36.41   |
| T3-BX-8        | 5/32           | 3/8            | 2              | 3-5/8       | 3    | CC       | 3         | 81032     | \$47.51     | \$51.30   |
| T3-C-3         | 3/16           | 3/8            | 3/4            | 2-1/2       | 3    | CC       | 3         | 81033     | \$27.36     | \$31.15   |
| T3-C-5         | 3/16           | 3/8            | 1-1/4          | 3-1/8       | 3    | CC       | 3         | 81035     | \$33.08     | \$36.86   |
| T3-C-6         | 3/16           | 3/8            | 1-1/2          | 3-1/8       | 3    | CC       | 3         | 81036     | \$37.88     | \$41.67   |
| T3-C-8         | 3/16           | 1/2            | 2              | 4-1/8       | 3    | CC       | 3         | 81037     | \$47.81     | \$54.68   |
| T3-C-10        | 3/16           | 1/2            | 2-1/2          | 4-1/2       | 3    | CC       | 3         | 81038     | \$58.18     | \$65.06   |
| T3-C-12        | 3/16           | 1/2            | 3              | 5           | 3    | CC       | 3         | 81039     | \$67.36     | \$75.70   |
| T3-C-13        | 3/16           | 5/8            | 3-1/4          | 5-1/2       | 3    | CC       | 3         | 81040     | \$76.68     | \$86.66   |
| T3-C-16        | 3/16           | 5/8            | 4              | 6-1/2       | 3    | CC       | 3         | 81042     | \$92.92     | \$104.19  |
| T3-C-20        | 3/16           | 3/4            | 5              | 7-1/4       | 3    | CC       | 3         | 81044     | \$147.64    | \$163.76  |
| T3-D-3         | 1/4            | 3/8            | 3/4            | 2-1/2       | 3    | CC       | 3         | 81046     | \$28.27     | \$32.05   |
| T3-D-4         | 1/4            | 3/8            | 1              | 2-3/4       | 3    | CC       | 3         | 81048     | \$30.82     | \$34.61   |
| T3-D-5         | 1/4            | 3/8            | 1-1/4          | 3-1/8       | 3    | CC       | 3         | 81050     | \$33.53     | \$37.32   |
| T3-D-9         | 1/4            | 1/2            | 2-1/4          | 4-1/4       | 3    | CC       | 3         | 81052     | \$53.07     | \$59.94   |
| T3-D-13        | 1/4            | 5/8            | 3-1/4          | 5-1/2       | 3    | CC       | 3         | 81054     | \$88.86     | \$98.83   |
| T3-D-16        | 1/4            | 5/8            | 4              | 6-1/2       | 3    | CC       | 3         | 81056     | \$96.06     | \$107.34  |
| T3-D-20        | 1/4            | 3/4            | 5              | 7-3/8       | 3    | CC       | 3         | 81058     | \$160.12    | \$176.23  |
| T3-F-5         | 3/8            | 1/2            | 1-1/4          | 3-1/8       | 3    | CC       | 3         | 81060     | \$45.40     | \$50.01   |
| T3-F-9         | 3/8            | 5/8            | 2-1/4          | 4-1/4       | 3    | CC       | 3         | 81062     | \$57.13     | \$65.73   |
| T3-F-13        | 3/8            | 3/4            | 3-1/4          | 5-1/2       | 3    | CC       | 3         | 81064     | \$103.89    | \$115.31  |
| T3-F-16        | 3/8            | 3/4            | 4              | 6-1/2       | 3    | CC       | 3         | 81066     | \$124.03    | \$137.98  |
| T3-F-20        | 3/8            | 3/4            | 5              | 7-1/2       | 3    | CC       | 3         | 81068     | \$172.90    | \$189.01  |
| T3-H-5         | 1/2            | 1/2            | 1-1/4          | 3-1/8       | 3    | CC       | 3         | 81070     | \$48.71     | \$53.32   |
| T3-H-9         | 1/2            | 5/8            | 2-1/4          | 4-1/4       | 3    | CC       | 3         | 81072     | \$70.82     | \$79.41   |
| T3-H-9S        | 1/2            | 1/2            | 2-1/4          | 4-1/8       | 3    | CC       | 3         | 81074     | \$70.82     | \$77.68   |
| T3-H-13        | 1/2            | 3/4            | 3-1/4          | 5-1/2       | 3    | CC       | 3         | 81076     | \$115.92    | \$127.34  |
| T3-H-16        | 1/2            | 3/4            | 4              | 6-1/2       | 3    | CC       | 3         | 81078     | \$148.84    | \$162.78  |
| T3-H-20        | 1/2            | 1              | 5              | 7-1/2       | 3    | CC       | 3         | 81080     | \$204.31    | \$223.11  |
| T3-I-9         | 5/8            | 3/4            | 2-1/4          | 4-1/2       | 3    | CC       | 3         | 81082     | \$102.53    | \$112.72  |
| T3-I-13        | 5/8            | 3/4            | 3-1/4          | 5-1/2       | 3    | CC       | 3         | 81084     | \$146.43    | \$157.86  |
| T3-I-16        | 5/8            | 1              | 4              | 6-1/2       | 3    | CC       | 3         | 81086     | \$174.10    | \$191.83  |
| T3-I-20        | 5/8            | 1              | 5              | 7-1/2       | 3    | CC       | 3         | 81088     | \$221.31    | \$240.10  |
| T3-J-9         | 3/4            | 1              | 2-1/4          | 4-3/4       | 3    | CC       | 3         | 81090     | \$119.98    | \$134.23  |
| T3-J-13        | 3/4            | 1              | 3-1/4          | 5-3/4       | 3    | CC       | 3         | 81092     | \$188.23    | \$203.80  |
| T3-J-16        | 3/4            | 1              | 4              | 6-1/2       | 3    | CC       | 3         | 81094     | \$221.76    | \$239.49  |
| T3-J-20        | 3/4            | 1              | 5              | 7-1/2       | 3    | CC       | 3         | 81096     | \$260.85    | \$279.64  |
| T4-A-4         | 3/32           | 3/8            | 1              | 2-7/8       | 3    | CC       | 4         | 81202     | \$32.62     | \$36.41   |
| T4-B-3         | 1/8            | 3/8            | 3/4            | 2-1/2       | 3    | CC       | 4         | 81204     | \$27.22     | \$31.01   |
| T4-B-4         | 1/8            | 3/8            | 1              | 2-7/8       | 3    | CC       | 4         | 81206     | \$30.37     | \$34.18   |
| T4-B-6         | 1/8            | 3/8            | 1-1/2          | 3-1/4       | 3    | CC       | 4         | 81208     | \$37.13     | \$40.92   |
| T4-B-8         | 1/8            | 1/2            | 2              | 3-7/8       | 3    | CC       | 4         | 81210     | \$51.42     | \$58.29   |



## TAPERED END MILL M-7 HSS



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FL # | END TYPE | DEG/ SIDE | BRITE EDP | BRITE PRICE | TiN PRICE |
|----------------|----------------|----------------|----------------|-------------|------|----------|-----------|-----------|-------------|-----------|
| T4-B-10        | 1/8            | 1/2            | 2-1/2          | 4-1/2       | 3    | CC       | 4         | 81212     | \$59.23     | \$66.11   |
| T4-C-3         | 3/16           | 3/8            | 3/4            | 2-1/2       | 3    | CC       | 4         | 81214     | \$27.81     | \$31.60   |
| T4-C-5         | 3/16           | 3/8            | 1-1/4          | 3-1/8       | 3    | CC       | 4         | 81216     | \$39.84     | \$43.63   |
| T4-C-10        | 3/16           | 1/2            | 2-1/2          | 4-1/2       | 3    | CC       | 4         | 81218     | \$77.13     | \$83.99   |
| T4-C-13        | 3/16           | 5/8            | 3-1/4          | 5-1/2       | 3    | CC       | 4         | 81220     | \$107.20    | \$117.18  |
| T4-C-16        | 3/16           | 3/4            | 4              | 6-1/2       | 3    | CC       | 4         | 81222     | \$142.23    | \$156.16  |
| T4-D-3         | 1/4            | 3/8            | 3/4            | 2-1/2       | 3    | CC       | 4         | 81224     | \$30.23     | \$34.01   |
| T4-D-5         | 1/4            | 1/2            | 1-1/4          | 3-1/8       | 3    | CC       | 4         | 81226     | \$40.59     | \$45.19   |
| T4-D-9         | 1/4            | 5/8            | 2-1/4          | 4-1/2       | 3    | CC       | 4         | 81228     | \$64.49     | \$73.10   |
| T4-D-13        | 1/4            | 3/4            | 3-1/4          | 5-1/2       | 3    | CC       | 4         | 81230     | \$106.15    | \$117.57  |
| T4-D-16        | 1/4            | 3/4            | 4              | 6-1/2       | 3    | CC       | 4         | 81232     | \$148.84    | \$162.78  |
| T4-F-5         | 3/8            | 1/2            | 1-1/4          | 3-1/8       | 3    | CC       | 4         | 81234     | \$53.83     | \$58.42   |
| T4-F-9         | 3/8            | 5/8            | 2-1/4          | 4-1/4       | 3    | CC       | 4         | 81236     | \$76.08     | \$84.68   |
| T4-F-13        | 3/8            | 3/4            | 3-1/4          | 5-1/2       | 3    | CC       | 4         | 81238     | \$125.38    | \$136.81  |
| T4-F-16        | 3/8            | 3/4            | 4              | 6-1/2       | 3    | CC       | 4         | 81240     | \$187.63    | \$201.56  |
| T4-H-5         | 1/2            | 1/2            | 1-1/4          | 3-1/8       | 3    | CC       | 4         | 81242     | \$62.69     | \$67.30   |
| T4-H-9         | 1/2            | 3/4            | 2-1/4          | 4-1/2       | 3    | CC       | 4         | 81244     | \$105.99    | \$116.18  |
| T4-H-13        | 1/2            | 3/4            | 3-1/4          | 5-1/2       | 3    | CC       | 4         | 81246     | \$159.07    | \$170.49  |
| T4-H-16        | 1/2            | 1              | 4              | 6-1/2       | 3    | CC       | 4         | 81248     | \$226.72    | \$244.45  |
| T5-AA-2        | 1/16           | 3/8            | 1/2            | 2-5/8       | 3    | CC       | 5         | 81403     | \$28.72     | \$32.51   |
| T5-AA-3        | 1/16           | 3/8            | 3/4            | 2-7/8       | 3    | CC       | 5         | 81405     | \$30.07     | \$33.86   |
| T5-AA-4        | 1/16           | 3/8            | 1              | 3-1/4       | 3    | CC       | 5         | 81407     | \$31.42     | \$35.22   |
| T5-AA-6        | 1/16           | 3/8            | 1-1/2          | 3-1/4       | 3    | CC       | 5         | 81409     | \$35.93     | \$39.73   |
| T5-XA-6        | .070           | 3/8            | 1-1/2          | 3-1/4       | 3    | CC       | 5         | 81411     | \$36.08     | \$39.87   |
| T5-A-2         | .070           | 3/8            | 1/2            | 2-5/8       | 3    | CC       | 5         | 81413     | \$28.72     | \$32.51   |
| T5-A-3         | 3/32           | 3/8            | 3/4            | 2-1/2       | 3    | CC       | 5         | 81415     | \$29.02     | \$32.81   |
| T5-A-4         | 3/32           | 3/8            | 1              | 2-7/8       | 3    | CC       | 5         | 81417     | \$29.62     | \$33.40   |
| T5-A-5         | 3/32           | 3/8            | 1-1/4          | 3-1/8       | 3    | CC       | 5         | 81419     | \$31.12     | \$34.91   |
| T5-A-6         | 3/32           | 3/8            | 1-1/2          | 3-1/4       | 3    | CC       | 5         | 81421     | \$32.03     | \$35.81   |
| T5-A-7         | 3/32           | 1/2            | 1-3/4          | 3-7/8       | 3    | CC       | 5         | 81423     | \$33.67     | \$40.55   |
| T5-A-8         | 3/32           | 1/2            | 2              | 3-7/8       | 3    | CC       | 5         | 81425     | \$37.29     | \$44.15   |
| T5-A-10        | 3/32           | 1/2            | 2-1/2          | 4-1/2       | 3    | CC       | 5         | 81427     | \$48.41     | \$55.29   |
| T5-AX-4        | 7/64           | 3/8            | 1              | 2-7/8       | 3    | CC       | 5         | 81429     | \$29.77     | \$33.56   |
| T5-AX-6        | 7/64           | 3/8            | 1-1/2          | 3-1/4       | 3    | CC       | 5         | 81431     | \$32.62     | \$36.41   |
| T5-AX-8        | 7/64           | 1/2            | 2              | 3-7/8       | 3    | CC       | 5         | 81433     | \$37.29     | \$44.15   |
| T5-B-3         | 1/8            | 3/8            | 3/4            | 2-1/2       | 3    | CC       | 5         | 81435     | \$26.91     | \$30.71   |
| T5-B-4         | 1/8            | 3/8            | 1              | 2-7/8       | 3    | CC       | 5         | 81437     | \$29.91     | \$33.71   |
| T5-B-4X        | 1/8            | 3/8            | 1-1/8          | 3           | 3    | CC       | 5         | 81439     | \$30.82     | \$34.61   |
| T5-B-5         | 1/8            | 3/8            | 1-1/4          | 3-1/8       | 3    | CC       | 5         | 81441     | \$32.17     | \$35.97   |
| T5-B-6         | 1/8            | 3/8            | 1-1/2          | 3-1/4       | 3    | CC       | 5         | 81443     | \$36.99     | \$40.78   |
| T5-B-8         | 1/8            | 1/2            | 2              | 3-7/8       | 3    | CC       | 5         | 81445     | \$48.71     | \$55.59   |
| T5-B-8S        | 1/8            | 3/4            | 2              | 3-7/8       | 3    | CC       | 5         | 81447     | \$50.37     | \$60.55   |
| T5-B-10        | 1/8            | 1/2            | 2-1/2          | 4-1/2       | 3    | CC       | 5         | 81449     | \$58.04     | \$64.90   |
| T5-B-12        | 1/8            | 3/4            | 3              | 5-1/2       | 3    | CC       | 5         | 81451     | \$78.78     | \$90.21   |
| T5-B-12S       | 1/8            | 1/2            | 3              | 5-1/2       | 3    | CC       | 5         | 81453     | \$89.30     | \$97.65   |
| T5-BX-4        | 5/32           | 3/8            | 1              | 2-7/8       | 3    | CC       | 5         | 81455     | \$30.52     | \$34.31   |
| T5-BX-6        | 5/32           | 1/2            | 1-1/2          | 3-3/4       | 3    | CC       | 5         | 81457     | \$32.92     | \$37.53   |
| T5-BX-8        | 5/32           | 1/2            | 2              | 3-7/8       | 3    | CC       | 5         | 81459     | \$47.95     | \$54.83   |
| T5-C-3         | 3/16           | 3/8            | 3/4            | 2-1/2       | 3    | CC       | 5         | 81461     | \$27.52     | \$31.30   |
| T5-C-5         | 3/16           | 1/2            | 1-1/4          | 3-1/8       | 3    | CC       | 5         | 81463     | \$34.74     | \$39.33   |
| T5-C-6         | 3/16           | 1/2            | 1-1/2          | 3-1/8       | 3    | CC       | 5         | 81465     | \$39.69     | \$44.30   |
| T5-C-8         | 3/16           | 1/2            | 2              | 4-1/8       | 3    | CC       | 5         | 81467     | \$53.22     | \$60.10   |
| T5-C-10        | 3/16           | 1/2            | 2-1/2          | 4-1/2       | 3    | CC       | 5         | 81469     | \$75.77     | \$82.65   |
| T5-C-12S       | 3/16           | 1/2            | 3              | 5           | 3    | CC       | 5         | 81471     | \$91.55     | \$99.91   |
| T5-C-12        | 3/16           | 3/4            | 3              | 5-1/2       | 3    | CC       | 5         | 81473     | \$87.65     | \$99.07   |
| T5-C-13        | 3/16           | 3/4            | 3-1/4          | 5-1/2       | 3    | CC       | 5         | 81475     | \$102.53    | \$113.96  |
| T5-C-16        | 3/16           | 3/4            | 4              | 6-1/2       | 3    | CC       | 5         | 81477     | \$128.39    | \$142.33  |
| T5-C-20        | 3/16           | 1              | 5              | 7-1/2       | 3    | CC       | 5         | 81479     | \$179.36    | \$198.16  |
| T5-D-3         | 1/4            | 3/8            | 3/4            | 2-1/2       | 3    | CC       | 5         | 81481     | \$29.32     | \$33.10   |
| T5-D-4         | 1/4            | 1/2            | 1              | 2-7/8       | 3    | CC       | 5         | 81483     | \$32.03     | \$36.62   |
| T5-D-5         | 1/4            | 1/2            | 1-1/4          | 3-1/8       | 3    | CC       | 5         | 81485     | \$36.08     | \$40.68   |
| T5-D-9         | 1/4            | 5/8            | 2-1/4          | 4-1/4       | 3    | CC       | 5         | 81487     | \$59.98     | \$68.59   |
| T5-D-13        | 1/4            | 3/4            | 3-1/4          | 5-1/2       | 3    | CC       | 5         | 81489     | \$103.58    | \$115.01  |
| T5-D-16        | 1/4            | 3/4            | 4              | 6-1/2       | 3    | CC       | 5         | 81491     | \$143.42    | \$157.37  |
| T5-F-5         | 3/8            | 1/2            | 1-1/4          | 3-1/8       | 3    | CC       | 5         | 81493     | \$48.56     | \$53.16   |



## TAPERED END MILL M-7 HSS



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FL # | END TYPE | DEG/ SIDE | BRITE EDP | BRITE PRICE | TIN PRICE |
|----------------|----------------|----------------|----------------|-------------|------|----------|-----------|-----------|-------------|-----------|
| T5-F-9         | 3/8            | 3/4            | 2-1/4          | 4-1/4       | 3    | CC       | 5         | 81495     | \$73.97     | \$84.15   |
| T5-F-13        | 3/8            | 3/4            | 3-1/4          | 5-1/2       | 3    | CC       | 5         | 81497     | \$115.47    | \$126.89  |
| T5-F-16        | 3/8            | 1              | 4              | 6-1/2       | 3    | CC       | 5         | 81499     | \$183.42    | \$201.15  |
| T5-F-20        | 3/8            | 1-1/4          | 5              | 7-1/2       | 3    | CC       | 5         | 81501     | \$233.79    | \$260.38  |
| T5-H-5         | 1/2            | 1/2            | 1-1/4          | 3-1/8       | 3    | CC       | 5         | 81503     | \$58.48     | \$63.09   |
| T5-H-9         | 1/2            | 3/4            | 2-1/4          | 4-1/4       | 3    | CC       | 5         | 81505     | \$98.93     | \$109.10  |
| T5-H-13        | 1/2            | 1              | 3-1/4          | 5-3/4       | 3    | CC       | 5         | 81507     | \$148.54    | \$164.12  |
| T5-H-16        | 1/2            | 1              | 4              | 6-1/2       | 3    | CC       | 5         | 81509     | \$199.51    | \$217.23  |
| T5-H-20        | 1/2            | 1-1/4          | 5              | 7-1/2       | 3    | CC       | 5         | 81511     | \$256.79    | \$283.39  |
| T5-I-9         | 5/8            | 3/4            | 2-1/4          | 4-1/2       | 3    | CC       | 5         | 81513     | \$133.81    | \$143.99  |
| T5-I-20        | 5/8            | 1-1/4          | 5              | 7-1/2       | 4    | CC       | 5         | 81515     | \$294.83    | \$321.43  |
| T5-J-9         | 3/4            | 3/4            | 2-1/4          | 4-1/2       | 3    | CC       | 5         | 81517     | \$133.81    | \$143.99  |
| T5-J-16        | 3/4            | 1-1/4          | 4              | 6-1/2       | 4    | CC       | 5         | 81519     | \$313.17    | \$336.55  |
| T5-J-20        | 3/4            | 1-1/4          | 5              | 7-1/2       | 4    | CC       | 5         | 81521     | \$348.65    | \$375.25  |
| T7-AA-4        | 1/16           | 3/8            | 1              | 2-7/8       | 3    | CC       | 7         | 81602     | \$32.92     | \$36.72   |
| T7-AA-6        | 1/16           | 1/2            | 1-1/2          | 3-1/4       | 3    | CC       | 7         | 81604     | \$41.34     | \$45.94   |
| T7-XA-4        | .070           | 3/8            | 1              | 2-3/4       | 3    | CC       | 7         | 81606     | \$32.92     | \$36.72   |
| T7-A-4         | 3/32           | 3/8            | 1              | 2-7/8       | 3    | CC       | 7         | 81608     | \$30.52     | \$34.31   |
| T7-A-5         | 3/32           | 1/2            | 1-1/4          | 3-1/8       | 3    | CC       | 7         | 81610     | \$32.03     | \$36.62   |
| T7-A-6         | 3/32           | 1/2            | 1-1/2          | 3-1/4       | 3    | CC       | 7         | 81612     | \$33.98     | \$38.58   |
| T7-B-3         | 1/8            | 3/8            | 3/4            | 2-1/2       | 3    | CC       | 7         | 81614     | \$27.81     | \$31.60   |
| T7-B-4         | 1/8            | 3/8            | 1              | 2-7/8       | 3    | CC       | 7         | 81616     | \$30.66     | \$34.47   |
| T7-B-6         | 1/8            | 1/2            | 1-1/2          | 3-1/4       | 3    | CC       | 7         | 81618     | \$37.59     | \$42.18   |
| T7-B-8         | 1/8            | 5/8            | 2              | 4-1/8       | 3    | CC       | 7         | 81620     | \$55.78     | \$64.38   |
| T7-B-12        | 1/8            | 3/4            | 3              | 5-1/4       | 3    | CC       | 7         | 81622     | \$95.31     | \$106.75  |
| T7-C-5         | 3/16           | 1/2            | 1-1/4          | 3-1/8       | 3    | CC       | 7         | 81624     | \$42.10     | \$46.69   |
| T7-C-12        | 3/16           | 3/4            | 3              | 5-1/4       | 3    | CC       | 7         | 81626     | \$117.72    | \$129.14  |
| T7-D-3         | 1/4            | 1/2            | 3/4            | 2-1/2       | 3    | CC       | 7         | 81628     | \$37.29     | \$41.53   |
| T7-D-5         | 1/4            | 1/2            | 1-1/4          | 3-1/8       | 3    | CC       | 7         | 81630     | \$43.15     | \$47.76   |
| T7-D-9         | 1/4            | 3/4            | 2-1/4          | 4-1/2       | 3    | CC       | 7         | 81632     | \$82.85     | \$93.02   |
| T7-D-13        | 1/4            | 1              | 3-1/4          | 5-3/4       | 3    | CC       | 7         | 81634     | \$131.40    | \$146.98  |
| T7-D-16        | 1/4            | 1              | 4              | 6-1/2       | 3    | CC       | 7         | 81636     | \$174.85    | \$192.58  |
| T7-E-13        | 5/16           | 1              | 3-1/4          | 5-3/4       | 3    | CC       | 7         | 81638     | \$152.76    | \$168.33  |
| T7-F-9         | 3/8            | 3/4            | 2-1/4          | 4-1/4       | 3    | CC       | 7         | 81640     | \$106.29    | \$116.48  |
| T7-F-13        | 3/8            | 1              | 3-1/4          | 5-3/4       | 3    | CC       | 7         | 81642     | \$174.70    | \$190.27  |
| T7-F-16        | 3/8            | 1-1/4          | 4              | 6-1/2       | 3    | CC       | 7         | 81644     | \$228.52    | \$251.90  |
| T7-H-5         | 1/2            | 5/8            | 1-1/4          | 3-1/4       | 3    | CC       | 7         | 81646     | \$69.46     | \$76.26   |
| T7-H-9         | 1/2            | 1              | 2-1/4          | 4-3/4       | 3    | CC       | 7         | 81648     | \$126.29    | \$140.54  |
| T7-H-13        | 1/2            | 1-1/4          | 3-1/4          | 5-3/4       | 3    | CC       | 7         | 81650     | \$203.12    | \$223.26  |
| T7-H-16        | 1/2            | 1-1/4          | 4              | 6-1/2       | 3    | CC       | 7         | 81652     | \$250.62    | \$274.01  |
| T7-I-16        | 5/8            | 1-1/4          | 4              | 6-1/2       | 4    | CC       | 7         | 81654     | \$295.27    | \$318.66  |
| T7-I-20        | 5/8            | 1-1/4          | 5              | 7-1/2       | 4    | CC       | 7         | 81656     | \$327.91    | \$354.50  |
| T7-J-13        | 3/4            | 1-1/4          | 3-1/4          | 5-3/4       | 4    | CC       | 7         | 81658     | \$266.41    | \$286.56  |
| T7-J-16        | 3/4            | 1-1/4          | 4              | 6-1/2       | 4    | CC       | 7         | 81660     | \$385.64    | \$409.01  |
| T10-AA-4       | 1/16           | 3/8            | 1              | 2-7/8       | 3    | CC       | 10        | 81803     | \$53.22     | \$57.02   |
| T10-A-2        | 3/32           | 3/8            | 1/2            | 2-1/2       | 3    | CC       | 10        | 81805     | \$29.91     | \$33.71   |
| T10-A-3        | 3/32           | 3/8            | 3/4            | 2-7/8       | 3    | CC       | 10        | 81807     | \$31.27     | \$35.06   |
| T10-A-6        | 3/32           | 1/2            | 1-1/2          | 3-3/8       | 3    | CC       | 10        | 81809     | \$56.08     | \$60.68   |
| T10-B-3        | 1/8            | 3/8            | 3/4            | 2-1/2       | 3    | CC       | 10        | 81811     | \$29.02     | \$32.81   |
| T10-B-5        | 1/8            | 1/2            | 1-1/4          | 3-1/8       | 3    | CC       | 10        | 81813     | \$46.45     | \$51.06   |
| T10-B-6        | 1/8            | 5/8            | 1-1/2          | 3-5/8       | 3    | CC       | 10        | 81815     | \$53.37     | \$60.18   |
| T10-C-5        | 3/16           | 1/2            | 1-1/4          | 3-1/8       | 3    | CC       | 10        | 81817     | \$48.27     | \$52.86   |
| T10-C-9        | 3/16           | 3/4            | 2-1/4          | 4-1/2       | 3    | CC       | 10        | 81819     | \$125.24    | \$135.41  |
| T10-D-3        | 1/4            | 1/2            | 3/4            | 2-1/2       | 3    | CC       | 10        | 81821     | \$37.88     | \$42.13   |
| T10-D-5        | 1/4            | 1/2            | 1-1/4          | 3-1/8       | 3    | CC       | 10        | 81823     | \$54.58     | \$59.17   |
| T10-D-9        | 1/4            | 3/4            | 2-1/4          | 4-1/4       | 3    | CC       | 10        | 81825     | \$118.32    | \$128.50  |
| T10-F-5        | 3/8            | 5/8            | 1-1/4          | 3-1/4       | 3    | CC       | 10        | 81827     | \$67.06     | \$73.87   |
| T10-F-9        | 3/8            | 1              | 2-1/4          | 4-5/8       | 3    | CC       | 10        | 81829     | \$139.23    | \$153.47  |
| T10-F-13       | 3/8            | 1-1/4          | 3-1/4          | 4-3/4       | 4    | CC       | 10        | 81831     | \$252.58    | \$270.83  |
| T10-H-5        | 1/2            | 3/4            | 1-1/4          | 3-3/8       | 3    | CC       | 10        | 81833     | \$79.98     | \$88.07   |
| T10-H-9        | 1/2            | 1              | 2-1/4          | 4-5/8       | 3    | CC       | 10        | 81835     | \$161.03    | \$175.27  |
| T10-H-13       | 1/2            | 1-1/4          | 3-1/4          | 4-3/4       | 4    | CC       | 10        | 81837     | \$273.03    | \$291.27  |
| T10-H-16       | 1/2            | 1-1/4          | 4              | 6-3/8       | 4    | CC       | 10        | 81839     | \$354.81    | \$378.19  |
| T15-AA-3       | 1/16           | 1/2            | 3/4            | 2-3/4       | 3    | CC       | 15        | 82002     | \$47.06     | \$51.30   |
| T15-A-3        | 3/32           | 1/2            | 3/4            | 2-3/4       | 3    | CC       | 15        | 82004     | \$38.18     | \$42.42   |



## TAPERED END MILL M-7 HSS



| CATALOG NUMBER | FLUTE DIAMETER | SHANK DIAMETER | CUTTING LENGTH | TOOL LENGTH | FL # | END TYPE | DEG/ SIDE | BRITE EDP | BRITE PRICE | TIN PRICE |
|----------------|----------------|----------------|----------------|-------------|------|----------|-----------|-----------|-------------|-----------|
| T15-A-4        | 3/32           | 1/2            | 1              | 2-7/8       | 3    | CC       | 15        | 82006     | \$50.96     | \$55.57   |
| T15-A-6        | 3/32           | 1/2            | 1-1/2          | 3-7/16      | 3    | CC       | 15        | 82008     | \$67.66     | \$72.25   |
| T15-B-2        | 1/8            | 3/8            | 1/2            | 2-1/2       | 3    | CC       | 15        | 82010     | \$33.23     | \$37.02   |
| T15-B-3        | 1/8            | 1/2            | 3/4            | 2-1/2       | 3    | CC       | 15        | 82012     | \$39.09     | \$43.33   |
| T15-B-4        | 1/8            | 1/2            | 1              | 3           | 3    | CC       | 15        | 82014     | \$47.95     | \$52.56   |
| T15-B-5        | 1/8            | 1/2            | 1-1/4          | 3-1/8       | 3    | CC       | 15        | 82016     | \$59.23     | \$63.84   |
| T15-C-4        | 3/16           | 1/2            | 1              | 3           | 3    | CC       | 15        | 82018     | \$52.17     | \$56.78   |
| T15-C-5        | 3/16           | 3/4            | 1-1/4          | 3-1/2       | 3    | CC       | 15        | 82020     | \$70.36     | \$78.45   |
| T15-C-5S       | 3/16           | 1/2            | 1-1/4          | 3-1/4       | 3    | CC       | 15        | 82022     | \$70.96     | \$75.57   |
| T15-C-8        | 3/16           | 1              | 2              | 4-1/2       | 3    | CC       | 15        | 82024     | \$167.79    | \$182.03  |
| T15-D-4        | 1/4            | 1/2            | 1              | 3           | 3    | CC       | 15        | 82026     | \$65.10     | \$69.70   |
| T15-D-5        | 1/4            | 3/4            | 1-1/4          | 3-1/2       | 3    | CC       | 15        | 82028     | \$73.37     | \$81.46   |
| T15-D-5S       | 1/4            | 1/2            | 1-1/4          | 3-1/4       | 3    | CC       | 15        | 82030     | \$73.37     | \$77.97   |
| T15-D-6        | 1/4            | 3/4            | 1-1/2          | 3-3/4       | 3    | CC       | 15        | 82032     | \$86.60     | \$94.69   |
| T15-D-9        | 1/4            | 1              | 2-1/4          | 4-3/4       | 4    | CC       | 15        | 82034     | \$182.83    | \$197.07  |
| T15-D-13       | 1/4            | 1-1/4          | 3-1/4          | 5-3/4       | 4    | CC       | 15        | 82036     | \$220.55    | \$240.71  |
| T15-E-4        | 5/16           | 3/4            | 1              | 3-1/4       | 3    | CC       | 15        | 82038     | \$73.83     | \$81.91   |
| T15-E-6        | 5/16           | 3/4            | 1-1/2          | 3-3/4       | 4    | CC       | 15        | 82040     | \$94.87     | \$102.96  |
| T15-F-5        | 3/8            | 3/4            | 1-1/4          | 3-1/2       | 4    | CC       | 15        | 82042     | \$91.71     | \$99.80   |
| T15-F-9        | 3/8            | 1-1/4          | 2-1/4          | 4-3/4       | 4    | CC       | 15        | 82044     | \$205.07    | \$223.32  |
| T15-H-4        | 1/2            | 3/4            | 1              | 3-1/4       | 3    | CC       | 15        | 82046     | \$89.91     | \$97.99   |
| T15-H-5        | 1/2            | 3/4            | 1-1/4          | 3-1/2       | 3    | CC       | 15        | 82048     | \$107.95    | \$116.04  |
| T15-H-7        | 1/2            | 1              | 1-3/4          | 4-1/4       | 4    | CC       | 15        | 82050     | \$191.24    | \$205.49  |
| T15-H-9        | 1/2            | 1-1/4          | 2-1/4          | 4-3/4       | 4    | CC       | 15        | 82052     | \$253.33    | \$271.59  |
| T15-H-13       | 1/2            | 1-1/4          | 3-1/4          | 6           | 4    | CC       | 15        | 82054     | \$365.50    | \$391.55  |
| T20-A-3        | 3/32           | 1/2            | 3/4            | 2-3/4       | 3    | CC       | 20        | 82203     | \$47.36     | \$51.60   |
| T20-B-2        | 1/8            | 3/8            | 1/2            | 2-1/2       | 3    | CC       | 20        | 82205     | \$39.39     | \$43.17   |
| T20-B-4        | 1/8            | 1/2            | 1              | 3           | 3    | CC       | 20        | 82207     | \$83.29     | \$87.90   |
| T20-C-4        | 3/16           | 1/2            | 1              | 3           | 4    | CC       | 20        | 82209     | \$88.86     | \$93.46   |
| T20-C-6        | 3/16           | 3/4            | 1-1/2          | 3-3/4       | 4    | CC       | 20        | 82211     | \$137.27    | \$145.35  |
| T20-D-4        | 1/4            | 1/2            | 1              | 3           | 4    | CC       | 20        | 82213     | \$92.92     | \$97.51   |
| T20-D-6        | 1/4            | 3/4            | 1-1/2          | 3-3/4       | 4    | CC       | 20        | 82215     | \$143.88    | \$151.96  |
| T20-E-4        | 5/16           | 3/4            | 1              | 3-1/4       | 4    | CC       | 20        | 82217     | \$100.28    | \$108.36  |
| T20-E-6        | 5/16           | 3/4            | 1-1/2          | 4-3/4       | 4    | CC       | 20        | 82219     | \$148.84    | \$159.03  |
| T20-F-6        | 3/8            | 3/4            | 1-1/2          | 3-3/4       | 4    | CC       | 20        | 82221     | \$215.45    | \$223.53  |
| T20-F-8        | 3/8            | 1              | 2              | 4-1/2       | 4    | CC       | 20        | 82223     | \$274.68    | \$288.93  |
| T20-H-9        | 1/2            | 1-1/4          | 2-1/4          | 4-3/4       | 4    | CC       | 20        | 82225     | \$329.10    | \$347.35  |
| T25-A-3        | 3/32           | 1/2            | 3/4            | 3           | 4    | CC       | 25        | 82402     | \$56.54     | \$61.13   |
| T25-B-2        | 1/8            | 1/2            | 1/2            | 2-1/2       | 3    | CC       | 25        | 82404     | \$47.66     | \$51.90   |
| T25-B-4        | 1/8            | 1/2            | 1              | 3           | 3    | CC       | 25        | 82406     | \$98.32     | \$102.93  |
| T25-D-4        | 1/4            | 5/8            | 1              | 3-1/4       | 4    | CC       | 25        | 82408     | \$122.23    | \$129.04  |
| T25-D-6        | 1/4            | 3/4            | 1-1/2          | 3-3/4       | 4    | CC       | 25        | 82410     | \$201.16    | \$209.25  |
| T25-E-3        | 5/16           | 5/8            | 3/4            | 3           | 4    | CC       | 25        | 82412     | \$122.23    | \$129.04  |
| T25-E-4        | 5/16           | 3/4            | 1              | 3-1/4       | 4    | CC       | 25        | 82414     | \$127.04    | \$135.13  |
| T25-E-6        | 5/16           | 1              | 1-1/2          | 4           | 4    | CC       | 25        | 82416     | \$202.81    | \$217.06  |
| T25-F-3        | 3/8            | 5/8            | 3/4            | 3           | 4    | CC       | 25        | 82418     | \$135.31    | \$142.12  |
| T25-F-4        | 3/8            | 3/4            | 1              | 3-1/4       | 4    | CC       | 25        | 82420     | \$143.13    | \$151.21  |
| T25-F-6        | 3/8            | 1              | 1-1/2          | 4           | 4    | CC       | 25        | 82422     | \$256.49    | \$270.74  |
| T25-H-5        | 1/2            | 1              | 1-1/4          | 3-3/4       | 3    | CC       | 25        | 82424     | \$254.99    | \$268.72  |
| T30-A-3        | 3/32           | 1/2            | 3/4            | 2-3/4       | 3    | CC       | 30        | 82603     | \$60.59     | \$64.83   |
| T30-B-2        | 1/8            | 1/2            | 1/2            | 2-1/2       | 3    | CC       | 30        | 82605     | \$56.98     | \$61.22   |
| T30-B-4        | 1/8            | 1/2            | 1              | 3           | 4    | CC       | 30        | 82607     | \$146.13    | \$150.74  |
| T30-D-4        | 1/4            | 3/4            | 1              | 3-1/4       | 4    | CC       | 30        | 82609     | \$151.55    | \$159.64  |
| T30-D-6        | 1/4            | 1              | 1-1/2          | 4           | 4    | CC       | 30        | 82611     | \$258.14    | \$272.39  |
| T30-F-5        | 3/8            | 1              | 1-1/4          | 3-3/4       | 4    | CC       | 30        | 82613     | \$260.40    | \$274.14  |
| T30-F-6        | 3/8            | 1              | 1-1/2          | 4           | 4    | CC       | 30        | 82615     | \$284.75    | \$299.00  |
| T30-H-5        | 1/2            | 1              | 1-1/4          | 3-3/4       | 4    | CC       | 30        | 82617     | \$281.90    | \$295.64  |
| T30-H-6        | 1/2            | 1              | 1-1/2          | 4           | 4    | CC       | 30        | 82619     | \$303.70    | \$317.95  |
| T45-B-1X       | 1/8            | 1/2            | 5/16           | 2-1/2       | 4    | CC       | 45        | 82802     | \$74.58     | \$78.82   |
| T45-B-3        | 1/8            | 5/8            | 3/4            | 3           | 4    | CC       | 45        | 82804     | \$172.90    | \$179.71  |
| T45-B-4        | 1/8            | 1              | 1              | 3-3/4       | 4    | CC       | 45        | 82806     | \$240.71    | \$254.44  |