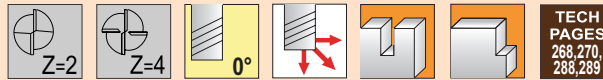


TOLERANCES

| | |
|-------------|----------------------------------|
| d_1 | +0.000" - .002" (+.000 - .050mm) |
| d_2 | h6 |
| ball radius | +0.000" - .001" (+.000 - .025mm) |

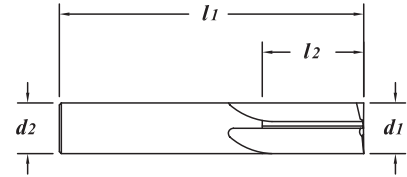


Series 222M, 234M, 334MA

END MILLS

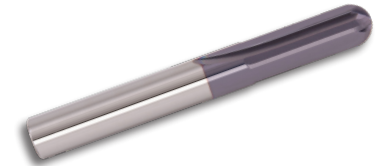
Standard Length - Straight Flute - Square End

Solid submicron grain carbide end mill - center cutting
 For cutting high Rc materials
 Helps to hold perpendicularity



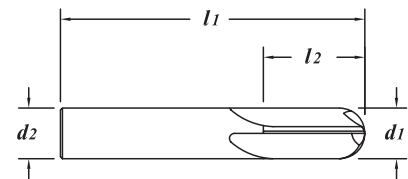
| (222M) 2 Flute EDP# | (234M) 4 Flute EDP# | d_1 † | | d_2 Shank Diameter | l_1 Overall Length | l_2 Flute Length | 1-11 | 12-24 | 25-49 | 50-100 | |
|---------------------------|---------------------------|---------|----------|----------------------------|----------------------------|--------------------------|--------|--------|--------|--------|--------|
| | | Decimal | Diameter | | | | | | | | Metric |
| 81070 | 82070 | .1250 | 1/8" | 3.175 | 1/8" | 1-1/2" | 1/2" | 9.68 | 9.26 | 8.84 | 8.42 |
| 81110 | 82110 | .1875 | 3/16" | 4.763 | 3/16" | 2" | 5/8" | 13.58 | 12.99 | 12.40 | 11.81 |
| 81150 | 82150 | .2500 | 1/4" | 6.350 | 1/4" | 2-1/2" | 3/4" | 16.38 | 15.66 | 14.95 | 14.24 |
| 81190 | 82190 | .3125 | 5/16" | 7.938 | 5/16" | 2-1/2" | 7/8" | 22.95 | 21.96 | 20.96 | 19.96 |
| 81230 | 82230 | .3750 | 3/8" | 9.525 | 3/8" | 2-1/2" | 7/8" | 28.60 | 27.36 | 26.11 | 24.87 |
| 81270 | 82270 | .4375 | 7/16" | 11.113 | 7/16" | 2-3/4" | 1" | 34.90 | 33.39 | 31.87 | 30.35 |
| 81310 | 82310 | .5000 | 1/2" | 12.700 | 1/2" | 3" | 1" | 45.77 | 43.78 | 41.79 | 39.80 |
| 81330 | 82330 | .6250 | 5/8" | 15.875 | 5/8" | 3-1/2" | 1-1/4" | 88.34 | 84.50 | 80.66 | 76.82 |
| 81350 | 82350 | .7500 | 3/4" | 19.050 | 3/4" | 4" | 1-1/2" | 129.51 | 123.88 | 118.25 | 112.62 |
| 81370 | 82370 | 1.000 | 1" | 25.400 | 1" | 4" | 1-1/2" | 213.10 | 203.83 | 194.57 | 185.30 |

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Standard Length - Straight Flute - Ball End

TiAlN Coating
 Solid submicron grain carbide end mill - center cutting
 For cutting high Rc materials
 Helps to hold perpendicularity



| (334MA) 4 Flute EDP# | d_1 † | | d_2 Shank Diameter | l_1 Overall Length | l_2 Flute Length | 1-11 | 12-24 | 25-49 | 50-100 | |
|----------------------------|---------|----------|----------------------------|----------------------------|--------------------------|------|-------|-------|--------|--------|
| | Decimal | Diameter | | | | | | | | Metric |
| 84077 | .1250 | 1/8" | 3.175 | 1/8" | 1-1/2" | 1/2" | 14.32 | 13.70 | 13.07 | 12.45 |
| 84115 | .1875 | 3/16" | 4.763 | 3/16" | 2" | 5/8" | 18.29 | 17.49 | 16.70 | 15.90 |
| 84157 | .2500 | 1/4" | 6.350 | 1/4" | 2-1/2" | 3/4" | 24.22 | 23.17 | 22.11 | 21.06 |
| 84237 | .3750 | 3/8" | 9.525 | 3/8" | 2-1/2" | 7/8" | 38.47 | 36.80 | 35.12 | 33.45 |

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MATERIAL HARDNESS (Rc)

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