



Speeds and Feeds

Product: Non-Ferrous Square V-Helix End Mills, 5x LOC

Series: 9230xx, 9231xx
 9230xx-C8, 9231xx-C8
 9230xx-C4, 9231xx-C4

| Cutter Series | MATERIAL | SFM | Chip Load (IPT) By Cutter Diameter | | | | | | | | | | | | Depth of Cut | | |
|--|---|--------|------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------------|----------|---------------|
| | | | 0.015 | 0.031 | 0.047 | 0.062 | 0.078 | 0.093 | 0.125 | 0.187 | 0.250 | 0.312 | 0.375 | 0.500 | Radial | Axial | |
| Uncoated | ALUMINUM ALLOYS | | | | | | | | | | | | | | | | |
| | Casting (2xx, 5xx, 7xx, 8xx) | 750 | Slotting | .00014 | .00029 | .00043 | .00057 | .00072 | .00086 | .00116 | .00173 | .00231 | .00303 | .00364 | .00485 | 1x Dia | .35x Dia |
| | Wrought (1xxx, 2xxx, 3xxx, 5xxx, 6xxx, 7xxx, 8xxx) | 1000 | Roughing | .00016 | .00033 | .00051 | .00067 | .00084 | .00100 | .00135 | .00202 | .00270 | .00353 | .00424 | .00566 | .35x Dia | .5x - 1x Dia |
| | MAGNESIUM ALLOYS | 1500 | Finishing | .00017 | .00036 | .00054 | .00072 | .00090 | .00107 | .00144 | .00216 | .00289 | .00378 | .00455 | .00606 | .1x Dia | .5x - 1x Dia |
| | ZINC ALLOYS | 800 | Max | .00018 | .00038 | .00058 | .00076 | .00096 | .00115 | .00154 | .00230 | .00308 | .00404 | .00485 | .00647 | - | - |
| | COPPER ALLOYS | | | | | | | | | | | | | | | | |
| | High Coppers - 90%+ (C1xxxx) | 225 | Slotting | .00011 | .00023 | .00035 | .00046 | .00058 | .00069 | .00092 | .00138 | .00185 | .00242 | .00291 | .00388 | 1x Dia | .35x Dia |
| | Brass (Copper Zinc alloys, C2xxxx, C3xxxx, C4xxxx, C66400-C69800) | 500 | Roughing | .00013 | .00027 | .00041 | .00053 | .00067 | .00080 | .00108 | .00161 | .00216 | .00283 | .00340 | .00453 | .35x Dia | .5x - 1x Dia |
| | Phosphor Bronzes (Copper Tin alloys, C5xxxx) | 225 | | .00014 | .00029 | .00043 | .00057 | .00072 | .00086 | .00116 | .00173 | .00231 | .00303 | .00364 | .00485 | .1x Dia | .5x - 1x Dia |
| | Aluminum Bronzes (Copper Aluminum alloys, C60600-C64200) | 500 | Max | .00015 | .00031 | .00046 | .00061 | .00077 | .00092 | .00123 | .00184 | .00246 | .00323 | .00388 | .00517 | - | - |
| Silicon Bronzes (Copper Silicon alloys, C64700-C66100) | 500 | .00018 | | .00037 | .00056 | .00074 | .00094 | .00112 | .00150 | .00225 | .00300 | .00394 | .00473 | .00631 | 1x Dia | .35x Dia | |
| Copper Nickels, Nickel Silvers (Copper Nickel alloys, C7xxxx) | 225 | Max | .00015 | .00031 | .00046 | .00061 | .00077 | .00092 | .00123 | .00184 | .00246 | .00323 | .00388 | .00517 | - | - | |
| Cast Copper Alloys (C83300-C86200, C86400-C87900, C92200-C95800, C97300-C97800, C99400-C99700) | 550 | | .00018 | .00037 | .00056 | .00074 | .00094 | .00112 | .00150 | .00225 | .00300 | .00394 | .00473 | .00631 | 1x Dia | .35x Dia | |
| TiB2 | ALUMINUM ALLOYS | | | | | | | | | | | | | | | | |
| | Casting (2xx, 5xx, 7xx, 8xx) | 1000 | Slotting | .00018 | .00037 | .00056 | .00074 | .00094 | .00112 | .00150 | .00225 | .00300 | .00394 | .00473 | .00631 | 1x Dia | .35x Dia |
| | Wrought (1xxx, 2xxx, 3xxx, 5xxx, 6xxx, 7xxx, 8xxx) | 1400 | Roughing | .00021 | .00043 | .00066 | .00087 | .00109 | .00130 | .00175 | .00262 | .00350 | .00459 | .00552 | .00736 | .35x Dia | .5x - 1x Dia |
| | MAGNESIUM ALLOYS | 2000 | Finishing | .00023 | .00047 | .00071 | .00093 | .00117 | .00140 | .00188 | .00281 | .00375 | .00492 | .00591 | .00788 | .1x Dia | .5x - 1x Dia |
| ZINC ALLOYS | 1100 | Max | .00024 | .00050 | .00075 | .00099 | .00125 | .00149 | .00200 | .00299 | .00400 | .00525 | .00631 | .00841 | | | |
| Amorphous Diamond | ALUMINUM (High Silicon) | | | | | | | | | | | | | | | | |
| | Casting - 3%-5% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx) | 2500 | Slotting | .00015 | .00032 | .00048 | .00063 | .00079 | .00095 | .00127 | .00190 | .00254 | .00333 | .00400 | .00534 | 1x Dia | .3x Dia |
| | Casting - 5%-8% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx) | 2000 | Roughing | .00018 | .00037 | .00056 | .00074 | .00092 | .00110 | .00148 | .00222 | .00296 | .00388 | .00467 | .00623 | .3x Dia | .3x - .8x Dia |
| | Casting - 8%-12% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx) | 1500 | | .00019 | .00039 | .00060 | .00079 | .00099 | .00118 | .00159 | .00238 | .00318 | .00416 | .00500 | .00667 | .1x Dia | .5x - 1x Dia |
| | Casting - 12%-16% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx) | 1000 | Max | .00020 | .00042 | .00064 | .00084 | .00106 | .00126 | .00169 | .00253 | .00339 | .00444 | .00534 | .00711 | - | - |
| | Wrought - 5%-8% Si (4xxx) | 2200 | | .00012 | .00025 | .00038 | .00050 | .00063 | .00076 | .00095 | .00127 | .00190 | .00254 | .00333 | .00400 | .00534 | 1x Dia |
| | Wrought - 8%-12% Si (4xxx) | 1700 | Roughing | .00014 | .00029 | .00045 | .00059 | .00074 | .00088 | .00119 | .00177 | .00237 | .00311 | .00374 | .00498 | .3x Dia | .3x - .8x Dia |
| | COPPER ALLOYS | | | | | | | | | | | | | | | | |
| | High Coppers - 90%+ (C1xxxx) | 800 | Finishing | .00015 | .00032 | .00048 | .00063 | .00079 | .00095 | .00127 | .00190 | .00254 | .00333 | .00400 | .00534 | .1x Dia | .5x - 1x Dia |
| | Brass (Copper Zinc alloys, C2xxxx, C3xxxx, C4xxxx, C66400-C69800) | 1500 | | .00016 | .00034 | .00051 | .00067 | .00085 | .00101 | .00136 | .00203 | .00271 | .00355 | .00427 | .00569 | - | - |
| | Phosphor Bronzes (Copper Tin alloys, C5xxxx) | 800 | Max | .00016 | .00034 | .00051 | .00067 | .00085 | .00101 | .00136 | .00203 | .00271 | .00355 | .00427 | .00569 | - | - |
| | Aluminum Bronzes (Copper Aluminum alloys, C60600-C64200) | 1000 | | .00016 | .00034 | .00051 | .00067 | .00085 | .00101 | .00136 | .00203 | .00271 | .00355 | .00427 | .00569 | - | - |
| Silicon Bronzes (Copper Silicon alloys, C64700-C66100) | 1000 | Max | .00016 | .00034 | .00051 | .00067 | .00085 | .00101 | .00136 | .00203 | .00271 | .00355 | .00427 | .00569 | - | - | |
| Copper Nickels, Nickel Silvers (Copper Nickel alloys, C7xxxx) | 800 | | .00016 | .00034 | .00051 | .00067 | .00085 | .00101 | .00136 | .00203 | .00271 | .00355 | .00427 | .00569 | - | - | |
| Cast Copper Alloys (C80100-C82800, C86300, C90200-C91700, C96200-C96600, C99300) | 150 | Max | .00016 | .00034 | .00051 | .00067 | .00085 | .00101 | .00136 | .00203 | .00271 | .00355 | .00427 | .00569 | - | - | |
| Cast Copper Alloys (C83300-C86200, C86400-C87900, C92200-C95800, C97300-C97800, C99400-C99700) | 750 | | .00016 | .00034 | .00051 | .00067 | .00085 | .00101 | .00136 | .00203 | .00271 | .00355 | .00427 | .00569 | - | - | |

Please note:

All posted speed and feed parameters are suggested starting values that may be increased given optimal setup conditions. If less than minimum Axial or Radial DOC values are used, increased feed rates are possible. If greater than maximum Axial or Radial DOC values are used, decreased feed rates may be needed.

If you require additional information, Harvey Tool has a team of technical experts available to assist you through even the most challenging applications. Please contact us at 800-645-5609 or tech@harveytool.com.

WARNING: Cutting tools may shatter under improper use. Government regulations require use of safety glasses and other appropriate safety equipment in the vicinity of use.