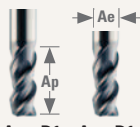










| Hardness BRINELL | Series 33 Metric |  | | Vc (m/min) | Diameter (mm) | | | | | | | | |
|---------------------|---|---|---------|---------------|---------------|---------------|---------|---------|---------|---------|---------|---------|---------|
| | | Ap x D1 | Ae x D1 | | 3 | 6 | 8 | 10 | 12 | 16 | 20 | | |
| | | | | | | | | | | | | | |
| < 300 | NICKEL, COBALT AND IRON BASED SUPERALLOYS Inconel 601, 617, 625, Incoly 800, Monel 400 |  | 1.5 | 0.5 | 24 | RPM | 2520 | 1260 | 945 | 756 | 630 | 473 | 378 |
| | | | | | (19-29) | Fz | 0.00610 | 0.02000 | 0.02720 | 0.03400 | 0.04090 | 0.04780 | 0.05310 |
| | | | | | | Feed (mm/min) | 46 | 76 | 77 | 77 | 77 | 68 | 60 |
| | |  | 1 | 1 | 19 | RPM | 2036 | 1018 | 763 | 611 | 509 | 382 | 305 |
| | | | | | (15-23) | Fz | 0.00610 | 0.02000 | 0.02720 | 0.03400 | 0.04090 | 0.04780 | 0.05310 |
| | | | | | | Feed (mm/min) | 37 | 61 | 62 | 62 | 62 | 55 | 49 |
| > 300 | NICKEL, COBALT AND IRON BASED SUPERALLOYS (DIFFICULT) Inconel 718, 750X, Incoly 925, Waspaloy, Hastelloy, Rene |  | 1.5 | 0.5 | 19 | RPM | 2003 | 1002 | 751 | 601 | 501 | 376 | 301 |
| | | | | | (15-23) | Fz | 0.00430 | 0.01120 | 0.01900 | 0.02390 | 0.02840 | 0.03330 | 0.03710 |
| | | | | | | Feed (mm/min) | 26 | 34 | 43 | 43 | 43 | 38 | 33 |
| | |  | 1 | 1 | 15 | RPM | 1583 | 792 | 594 | 475 | 396 | 297 | 238 |
| | | | | | (12-18) | Fz | 0.00430 | 0.01120 | 0.01900 | 0.02390 | 0.02840 | 0.03330 | 0.03710 |
| | | | | | | Feed (mm/min) | 20 | 27 | 34 | 34 | 34 | 30 | 26 |
| < 350 | TITANIUM BASE ALLOY Pure Titanium, Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si |  | 1.5 | 0.5 | 66 | RPM | 6947 | 3474 | 2605 | 2084 | 1737 | 1303 | 1042 |
| | | | | | (52-79) | Fz | 0.00710 | 0.01880 | 0.03200 | 0.04010 | 0.04800 | 0.05610 | 0.06250 |
| | | | | | | Feed (mm/min) | 148 | 196 | 250 | 251 | 250 | 219 | 195 |
| | |  | 1 | 1 | 52 | RPM | 5493 | 2747 | 2060 | 1648 | 1373 | 1030 | 824 |
| | | | | | (41-62) | Fz | 0.00900 | 0.01800 | 0.02500 | 0.03100 | 0.03800 | 0.04500 | 0.05400 |
| | | | | | | Feed (mm/min) | 148 | 148 | 155 | 153 | 157 | 139 | 133 |
| < 450 | TITANIUM BASE ALLOY (DIFFICULT) Ti10Al2Fe3Al, Ti5Al5V5Mo3Cr, Ti7Al4Mo, Ti3Al8V6Cr4Zr4Mo, Ti6Al6V6Sn, Ti15V3 Cr3Sn3Al |  | 1.5 | 0.5 | 24 | RPM | 2585 | 1293 | 969 | 776 | 646 | 485 | 388 |
| | | | | | (20-29) | Fz | 0.00710 | 0.01880 | 0.03200 | 0.04010 | 0.04800 | 0.05610 | 0.06250 |
| | | | | | | Feed (mm/min) | 55 | 73 | 93 | 93 | 93 | 82 | 73 |
| | |  | 1 | 1 | 18 | RPM | 1939 | 969 | 727 | 582 | 485 | 364 | 291 |
| | | | | | (15-22) | Fz | 0.00710 | 0.01880 | 0.03200 | 0.04010 | 0.04800 | 0.05610 | 0.06250 |
| | | | | | | Feed (mm/min) | 41 | 55 | 70 | 70 | 70 | 61 | 55 |

* Maximum recommended depth shown

* For High Speed Machining with a Radial Width of Cut 5%-7% of D1 please refer for the SGS Website Calculators and Tool Wizard to compensate for chip thinning in the Feed Rate parameters

* Finish cuts typically require reduced Feed; also the Radial Width of Cut recommended is not more than 2% x D1

* Reduce Speed & Feed for material harder than listed

* Above recommendations are based on ideal conditions; For smaller taper machining centers or less rigid conditions please adjust parameters accordingly on diameters greater than 1/2"