

RECOMMENDED CUTTING CONDITIONS

| Workpiece Material | Structural Steel Aluminium Alloys | | Carbon Steel, Alloy Steel Cast Iron | | Alloy Tool Steel (Low-hardness Materials) Ferritic Stainless Steel Martensitic Stainless Steel | | Alloy Tool Steel (—40HRC) Precipitation-Hardening Stainless Steel | |
|--------------------|--------------------------------------|--------------------|--|--------------------|--|--------------------|---|--------------------|
| | Revolution (min ⁻¹) | Feed rate (mm/rev) | Revolution (min ⁻¹) | Feed rate (mm/rev) | Revolution (min ⁻¹) | Feed rate (mm/rev) | Revolution (min ⁻¹) | Feed rate (mm/rev) |
| 2.0 | 5600 | 0.07 | 4800 | 0.07 | 3200 | 0.07 | 2800 | 0.04 |
| 3.0 | 3700 | 0.10 | 3200 | 0.10 | 2100 | 0.10 | 1900 | 0.05 |
| 4.0 | 2800 | 0.12 | 2400 | 0.12 | 1600 | 0.12 | 1400 | 0.06 |
| 5.0 | 2200 | 0.14 | 1900 | 0.14 | 1300 | 0.14 | 1150 | 0.07 |
| 6.0 | 1850 | 0.15 | 1600 | 0.15 | 1050 | 0.15 | 950 | 0.08 |
| 8.0 | 1400 | 0.20 | 1200 | 0.20 | 800 | 0.20 | 720 | 0.10 |
| 10.0 | 1100 | 0.23 | 960 | 0.23 | 640 | 0.21 | 570 | 0.11 |
| 12.0 | 950 | 0.26 | 800 | 0.26 | 530 | 0.24 | 470 | 0.12 |
| 14.0 | 800 | 0.27 | 680 | 0.27 | 450 | 0.25 | 410 | 0.13 |
| 16.0 | 700 | 0.28 | 500 | 0.28 | 360 | 0.26 | 300 | 0.14 |
| 18.0 | 620 | 0.29 | 450 | 0.29 | 320 | 0.27 | 260 | 0.15 |
| 20.0 | 560 | 0.30 | 400 | 0.30 | 290 | 0.27 | 240 | 0.15 |
| 22.0 | 510 | 0.32 | 360 | 0.32 | 260 | 0.29 | 220 | 0.16 |
| 24.0 | 460 | 0.33 | 330 | 0.33 | 240 | 0.30 | 200 | 0.16 |
| 26.0 | 430 | 0.35 | 310 | 0.35 | 220 | 0.31 | 180 | 0.17 |
| 28.0 | 400 | 0.36 | 290 | 0.36 | 210 | 0.33 | 170 | 0.18 |
| 30.0 | 370 | 0.37 | 270 | 0.37 | 190 | 0.34 | 160 | 0.18 |
| 32.0 | 350 | 0.38 | 250 | 0.38 | 180 | 0.35 | 150 | 0.19 |

Note 1) The cutting conditions table above assumes that the hole depth is DC×3 and there is no preprepared hole. If the depth of the hole is DC×1 or less, it is possible to increase the rotation speed by around 1.2 times.

Note 2) Machining without a pilot hole is recommended. If there is a pilot hole, the chips will not split properly. If chip breakage is required, use step machining.

Note 3) For counter boring of a sloped face, a carbide end mill is recommended.

Note 4) When machining austenitic stainless steel (JIS SUS304, SUS316), set the revolution at 40%-70% and the feed rate 40%-60%.

Note 5) Please use a collet type drill chuck or a milling chuck.

Note 6) Please reduce the revolution and feed rate depending on the drilling situation when the installation of workpiece or machine lacks rigidity.

Note 7) Use sufficient cutting fluid.

Note 8) The above-mentioned cutting conditions are standard when using water-insoluble cutting fluid.

Please reduce the revolution when using water-insoluble cutting fluid.