## RECOMMENDED TAPPING SPEEDS

### RECOMMENDED TAPPING SPEED AND CUTTING FLUIDS

This chart shows the recommended tapping speeds and cutting fluids. Tap material, type of tap chamfer length, dimension of drill hole, work materials and cutting fluids are important factors for determining suitable tapping speed.
Lubrication, cooling, capability and adhesion Resistance are the three important factors effecting cutting fluid.

| WORK MATERIALS | | TAPPING SPEED (m/min) | | | | | | CUTTING FLUIDS |
|---|---|---|---|---|---|---|---|---|
| | | SPIRAL FLUTED TAP | GUN POINTED TAP | STRAIGHT FLUTED TAP | FLUTELESS TAP | SOLID CARBIDE TAP | PIPE TAP | |
| LOW CARBON STEELS | ≦C0.2% | 8 ~ 13 | 15 ~ 25 | 8 ~ 13 | 8 ~ 13 | — | 3 ~ 6 | Sulfochlorinated Oil (Active Type) Tapping Paste EP Additive Non-Water-Soluble Cutting Fluid (Emulsion Type) |
| MEDIUM CARBON STEELS | C0.25~0.40% | 7 ~ 12 | 10 ~ 15 | 7 ~ 12 | 7 ~ 10 | — | 3 ~ 6 | |
| HIGH CARBON STEELS | ≧C0.45% | 6 ~ 9 | 8 ~ 13 | 6 ~ 9 | 5 ~ 8 | — | 2 ~ 5 | |
| ALLOY STEELS | SCM | 7 ~ 12 | 10 ~ 15 | 7 ~ 12 | 5 ~ 8 | — | 2 ~ 5 | |
| HARDENED STEELS | HRc 25~40 | 3 ~ 5 (4 ~ 8) | 4 ~ 6 (6 ~ 10) | 3 ~ 5 (4 ~ 8) | — | — | 2 ~ 5 | |
| STAINLESS STEELS | SUS | 5 ~ 8 | 8 ~ 13 | 4 ~ 7 | 5 ~ 10 | — | 5 ~ 10 | |
| TOOL STEELS | SKD | 6 ~ 9 | 7 ~ 10 | 6 ~ 9 | — | — | 2 ~ 5 | |
| CAST STEELS | SC | 6 ~ 11 | 10 ~ 15 | 6 ~ 11 | — | — | 2 ~ 5 | |
| CAST IRON | FC | — | — | 10 ~ 15 | — | 10 ~ 20 | 2 ~ 5 | Water-Soluble Cutting Fluid (Emulsion Type) Non-Water-Soluble Cutting Fluid |
| HIGH TENSION CAST IRON | FCD | 7 ~ 12 | 10 ~ 20 | 7 ~ 12 | — | 10 ~ 20 | 4 ~ 8 | |
| COPPER | Cu | 6 ~ 11 | 7 ~ 12 | 6 ~ 9 | 7 ~ 12 | 10 ~ 20 | 2 ~ 5 | Non-Water-Soluble Cutting Fluid (Inactive Type) Water-Soluble Cutting Fluid (Emulsion Type) |
| BRASS BRASS CASTING | Bs, BsC | 10 ~ 20 | 15 ~ 25 | 10 ~ 15 | 7 ~ 12 | 15 ~ 25 | 5 ~ 10 | |
| BRONZE BORNZE CASTING | PB, PBC | 6 ~ 11 | 10 ~ 20 | 6 ~ 11 | 7 ~ 12 | 10 ~ 20 | 6 ~ 11 | |
| ALUMINUM ROLLED STEELS | AL | 10 ~ 20 | 15 ~ 25 | 10 ~ 20 | 10 ~ 20 | — | 5 ~ 10 | |
| ALUMINUM ALLOY CASTING | AC, ADC | 10 ~ 15 | 15 ~ 20 | 10 ~ 15 | 10 ~ 15 | 10 ~ 20 | 10 ~ 15 | |
| MAGNESIUM ALLOY CASTING | MC | 7 ~ 12 | 10 ~ 15 | 7 ~ 12 | — | 10 ~ 20 | 10 ~ 15 | |
| ZINC ALLOY CASTING | ZDC | 7 ~ 12 | 10 ~ 15 | 7 ~ 12 | 7 ~ 12 | 10 ~ 20 | 10 ~ 15 | |
| THERMOSETTING PLASTIC | BAKELITE PHENOL, EPOXY | — | — | 10 ~ 20 | — | 15 ~ 25 | 5 ~ 10 | Water-Soluble Cutting Fluid Mist Lubrication Air Cooling, Dry |
| THERMOPLASTIC | VINYL CHLORIDE NYLON | 10 ~ 15 | 10 ~ 20 | 10 ~ 20 | — | 10 ~ 20 | 5 ~ 10 | |

1. These are general recommendations which depending upon conditions, may be altered.
2. To select the best taps, please see Tap Recommended Table.
3. ( )=recommendation for HSS-PM taps.