

## STANDARD CUTTING CONDITIONS

### Conversion table for feed per tooth

ISO	Workpiece materials	Cutting speed Vc (m/min)	Feed: fz(mm/t)			
			AS: Straight flute (for blind holes)		BL: Left hand flute (for through holes)	
			ø11.5 - ø16	ø16 - ø32	ø11.5 - ø16	ø16 - ø32
<b>P</b>	Low carbon steel (C<0.3) SS400, SM490, S25C, E275A, etc.	80 - 200	0.05 - 0.18	0.05 - 0.20	0.05 - 0.2	0.05 - 0.27
	Carbon steel (C>0.3) S45C, S55C, C45, C55, etc.	80 - 150	0.05 - 0.15	0.05 - 0.18	0.05 - 0.18	0.05 - 0.25
	Low alloy steel (C<0.3) SCM415, etc.	80 - 200	0.05 - 0.18	0.05 - 0.20	0.05 - 0.2	0.05 - 0.27
	Alloy steel (C>0.3) SCM440, SCr420, 42CrMo4, 20Cr4 etc.	50 - 150	0.03 - 0.10	0.05 - 0.13	0.05 - 0.13	0.05 - 0.17
<b>M</b>	Stainless steel (Austenitic) SUS304, SUS316, X5CrNi18-9, X5CrNiMo17-12-3, etc.	20 - 40	0.03 - 0.10	0.03 - 0.13	0.05 - 0.13	0.05 - 0.17
	Stainless steel (Martensitic and ferritic) SUS430, SUS416, X6Cr17, etc.	20 - 40	0.03 - 0.10	0.03 - 0.13	0.05 - 0.13	0.05 - 0.17
	Stainless steel (Precipitation hardening) SUS630, X5CrNiCuNb16-4 etc.	20 - 40	0.03 - 0.10	0.03 - 0.13	0.05 - 0.13	0.05 - 0.17
<b>K</b>	Gray cast iron FC250, GG25, 250 etc.	100 - 250	0.05 - 0.18	0.05 - 0.20	0.05 - 0.2	0.05 - 0.27
	Ductile cast iron FCD700, etc.	80 - 200	0.05 - 0.15	0.05 - 0.18	0.05 - 0.18	0.05 - 0.25
<b>N</b>	Aluminum alloy	100 - 300	0.05 - 0.18	0.05 - 0.20	0.05 - 0.2	0.05 - 0.27
<b>S</b>	High temp. alloy Inconel718 etc.	15 - 50	0.03 - 0.06	0.03 - 0.08	0.05 - 0.1	0.05 - 0.13
	Titanium alloy Ti-6Al-4V etc.	30 - 60	0.03 - 0.10	0.03 - 0.13	0.05 - 0.13	0.05 - 0.17
<b>H</b>	Hardened steel Over 40HRC etc.	50 - 100	0.03-0.08	0.03 - 0.1	0.05-0.12	0.05 - 0.15

## Conversion table for feed per revolution

ISO	Workpiece materials	Cutting speed Vc (m/min)	Feed: f (mm/rev)					
			AS: Straight flute (for blind holes)			BL: Left hand flute (for through holes)		
			Ø11.5 - Ø16 6 flutes	Ø16.001 - Ø20 6 flutes	Ø20.001 - Ø32 8 flutes	Ø11.5 - Ø16 6 flutes	Ø16.001 - Ø20 6 flutes	Ø20.001 - Ø32 8 flutes
<b>P</b>	Low carbon steel (C<0.3) SS400, SM490, S25C, E275A, etc.	80 - 200	0.3 - 1.08	0.3 - 1.2	0.4 - 1.6	0.3 - 1.2	0.3 - 1.62	0.4 - 2.16
	Carbon steel (C>0.3) S45C, S55C, C45, C55, etc.	80 - 150	0.3 - 0.9	0.3 - 1.08	0.4 - 1.44	0.3 - 1.08	0.3 - 1.5	0.4 - 2
	Low alloy steel (C<0.3) SCM415, etc.	80 - 200	0.3 - 1.08	0.3 - 1.2	0.4 - 1.6	0.3 - 1.2	0.3 - 1.2	0.4 - 2.16
	Alloy steel (C>0.3) SCM440, SGr420, 42CrMo4, 20Cr4 etc.	50 - 150	0.18 - 0.6	0.3 - 0.78	0.4 - 1.04	0.3 - 0.78	0.3 - 1.02	0.4 - 1.36
<b>M</b>	Stainless steel (Austenitic) SUS304, SUS316, X5CrNi18-9, X5CrNiMo17-12-3, etc.	20 - 40	0.18 - 0.6	0.18 - 0.78	0.24 - 1.04	0.3 - 0.78	0.3 - 1.02	0.4 - 1.36
	Stainless steel (Martensitic and ferritic) SUS430, SUS416, X6Cr17, etc.	20 - 40	0.18 - 0.6	0.18 - 0.78	0.24 - 1.04	0.3 - 0.78	0.3 - 1.02	0.4 - 1.36
	Stainless steel (Precipitation hardening) SUS630, X5CrNiCuNb16-4 etc.	20 - 40	0.18 - 0.6	0.18 - 0.78	0.24 - 1.04	0.3 - 0.78	0.3 - 1.02	0.4 - 1.36
<b>K</b>	Gray cast iron FC250, GG25, 250 etc.	100 - 250	0.3 - 1.08	0.3 - 1.2	0.4 - 1.6	0.3 - 1.2	0.3 - 1.62	0.4 - 2.16
	Ductile cast iron FCD700, etc.	80 - 200	0.3 - 0.9	0.3 - 1.08	0.4 - 1.44	0.3 - 1.8	0.3 - 1.62	0.4 - 2
<b>N</b>	Aluminum alloy	100 - 300	0.3 - 1.08	0.3 - 1.2	0.4 - 1.6	0.3 - 1.2	0.3 - 1.62	0.4 - 2.16
<b>S</b>	High temp. alloy Inconel718 etc.	15 - 50	0.18 - 0.36	0.18 - 0.48	0.24 - 0.64	0.3 - 0.6	0.3 - 0.78	0.4 - 1.04
	Titanium alloy Ti-6Al-4V etc.	30 - 60	0.18 - 0.6	0.18 - 0.78	0.24 - 1.04	0.3 - 0.78	0.3 - 1.02	0.4 - 1.36
<b>H</b>	Hardened steel Over 40HRC etc.	50 - 100	0.18 - 0.48	0.18 - 0.6	0.24 - 0.8	0.3 - 0.72	0.3 - 0.9	0.4 - 1.2