

Standard cutting conditions

Work materials	Examples (JIS)	Hardness	Cutting speed: V_c (m/min)			Feed: f (mm/rev)		
			$\phi 3 \sim \phi 6$	$\phi 6 \sim \phi 10$	$\phi 10 \sim \phi 20$	$\phi 3 \sim \phi 6$	$\phi 6 \sim \phi 10$	$\phi 10 \sim \phi 20$
Mild steels · Low carbon steels	SS400	< 180HB	70 - 120 - 140	80 - 130 - 160	90 - 160 - 190	0.15 - 0.20 - 0.25	0.20 - 0.30 - 0.35	0.25 - 0.30 - 0.40
Carbon steels · Alloy steels	S45C	180 ~ 300HB	50 - 100 - 130	70 - 120 - 160	80 - 140 - 170	0.15 - 0.20 - 0.25	0.20 - 0.30 - 0.35	0.25 - 0.30 - 0.40
High alloy steels etc.	SCM440	250 ~ 350HB	40 - 80 - 100	60 - 90 - 140	60 - 100 - 160	0.10 - 0.15 - 0.20	0.15 - 0.25 - 0.30	0.15 - 0.25 - 0.30
Stainless steels	SUS304	< 200HB	30 - 60 - 70	50 - 80 - 100	50 - 90 - 120	0.10 - 0.15 - 0.20	0.10 - 0.20 - 0.25	0.15 - 0.25 - 0.35
Grey cast irons	FC300	< 200HB	80 - 110 - 140	100 - 140 - 160	100 - 160 - 180	0.15 - 0.25 - 0.35	0.20 - 0.35 - 0.40	0.25 - 0.40 - 0.50
Ductile cast irons	FCD700	< 300HB	70 - 100 - 140	80 - 120 - 150	80 - 140 - 170	0.15 - 0.25 - 0.35	0.20 - 0.30 - 0.40	0.25 - 0.35 - 0.45
Aluminium alloys	ADC12		80 - 130 - 160	100 - 160 - 180	100 - 170 - 190	0.15 - 0.25 - 0.35	0.20 - 0.30 - 0.45	0.25 - 0.40 - 0.60
Titanium alloys	TI-6Al-4V		25 - 40 - 60	30 - 60 - 80	30 - 60 - 80	0.10 - 0.15 - 0.20	0.10 - 0.20 - 0.25	0.15 - 0.25 - 0.35
Heat-resistant alloys	Inconel	250HB <	10 - 20 - 30	10 - 30 - 40	10 - 30 - 40	0.02 - 0.04 - 0.10	0.05 - 0.10 - 0.15	0.10 - 0.15 - 0.25
Hard materials	SKD11	< 40HRC	20 - 30 - 50	30 - 40 - 60	30 - 40 - 60	0.08 - 0.09 - 0.10	0.10 - 0.12 - 0.15	0.12 - 0.14 - 0.20

Note: • The cutting parameters shown mm the table are merely a starting guideline for general machining.

- Values will vary depending on the power or rigidity of the machine to be used. For the smaller side of drill diameters, select lower feeds.

• Chip packing mm the oil holes may cause drill breakage. A filter preventing the circulation of chips should be used on coolant supply.

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