

RECOMMENDED CUTTING CONDITIONS

Dry cutting

	Work Material	Hardness	Breaker	Grade	Cutting Speed (m/min)	Feed per Tooth (mm/tooth)	Axial depth of cut ap (mm)
P	Mild Steel	≤180HB	MP	VP15TF	250 (200–300)	0.3 (0.2–0.4)	5
	Carbon Steel, Alloy Steel	180–280HB	MP	VP15TF	220 (170–250)	0.3 (0.2–0.4)	5
		280–350HB	MP	VP15TF	140 (100–180)	0.3 (0.2–0.4)	5
M	Austenitic Stainless Steel	≤200HB	MM	MP7030	200 (150–250)	0.2 (0.1–0.3)	5
		>200HB	MM	MP7030	150 (100–200)	0.2 (0.1–0.3)	5
	Duplex Steel	≤280HB	MM	MP7030	140 (100–180)	0.15 (0.05–0.25)	5
	Ferritic, Martensitic Stainless Steel	≤200HB	MM	MP7030	200 (150–250)	0.2 (0.1–0.3)	5
		>200HB	MM	MP7030	150 (100–200)	0.2 (0.1–0.3)	5
	PH Stainless Steel	<450HB	MM	MP7030	130 (100–160)	0.15 (0.05–0.25)	5
K	Cast Iron	Tensile Strength ≤350MPa	MK,HK	MC5020	220 (150–300)	0.3 (0.2–0.4)	5
			MP	VP15TF	180 (130–230)	0.3 (0.2–0.4)	5
	Ductile Cast Iron	Tensile Strength ≤450MPa	MK,HK	MC5020	200 (150–250)	0.2 (0.1–0.3)	5
			MP	VP15TF	170 (120–220)	0.2 (0.1–0.3)	5
		Tensile Strength ≤800MPa	MK,HK	MC5020	170 (150–200)	0.2 (0.1–0.3)	5
MP	VP15TF		150 (125–175)	0.2 (0.1–0.3)	5		
H	Hardened Steel	40–55HRC	MP	VP15TF	80 (60–100)	0.15 (0.1–0.2)	3

(Note 1) Recommend wet cutting for good surface finishing of stainless steel. (Tool life is short compared to wet cutting.)

(Note 2) With low workpiece clamping rigidity or long overhang of the tool, adjust cutting speed and feed to 70 or 80% of the recommended conditions above.

Wet cutting

	Work Material	Hardness	Insert	Grade	Cutting Speed (m/min)	Feed per Tooth (mm/tooth)	Axial depth of cut ap (mm)
M	Austenitic Stainless Steel	≤200HB	MM	MP7030	125 (100–150)	0.15 (0.1–0.2)	5
		>200HB	MM	MP7030	100 (75–125)	0.15 (0.1–0.2)	5
	Duplex Steel	≤280HB	MM	MP7030	80 (60–100)	0.10 (0.05–0.15)	5
	Ferritic, Martensitic Stainless Steel	≤200HB	MM	MP7030	125 (100–150)	0.15 (0.1–0.2)	5
		>200HB	MM	MP7030	100 (75–125)	0.15 (0.1–0.2)	5
	PH Stainless Steel	<450HB	MM	MP7030	70 (50–90)	0.1 (0.05–0.15)	5
S	Titanium Alloy	—	MM	MP7030	40 (20–50)	0.15 (0.1–0.2)	3
	Heat Resistant Alloy	—	MM	MP7030	40 (20–50)	0.15 (0.1–0.2)	3

(Note 1) With low workpiece clamping rigidity or long overhang of the tool, adjust cutting speed and feed to 70 or 80% of the recommended conditions above.

Cutting Condition with Wiper insert

	Work Material	Hardness	Main Insert	Grade	Wiper Insert	Grade	Cutting Speed (m/min)	Feed per Tooth (mm/tooth)	Axial depth of cut ap (mm)
P	Mild Steel	≤180HB	MP	VP15TF	WP	VP15TF	250 (200–300)	0.3 (0.2–0.4)	0.5
	Carbon Steel, Alloy Steel	180–280HB	MP	VP15TF	WP	VP15TF	220 (170–270)	0.3 (0.2–0.4)	0.5
		280–350HB	MP	VP15TF	WP	VP15TF	140 (100–180)	0.3 (0.2–0.4)	0.5
K	Cast Iron	Tensile Strength ≤350MPa	MK,HK	MC5020	WK	MC5020	320 (250–400)	0.3 (0.2–0.4)	0.5
			MP	VP15TF	WP	VP15TF	220 (150–300)	0.3 (0.2–0.4)	0.5
	Ductile Cast Iron	Tensile Strength ≤450MPa	MK,HK	MC5020	WK	MC5020	250 (200–300)	0.2 (0.1–0.3)	0.5
			MP	VP15TF	WP	VP15TF	200 (150–250)	0.2 (0.1–0.3)	0.5
		Tensile Strength ≤800MPa	MK,HK	MC5020	WK	MC5020	220 (200–250)	0.2 (0.1–0.3)	0.5
MP	VP15TF		WP	VP15TF	170 (150–200)	0.2 (0.1–0.3)	0.5		
S	Heat Resistant Alloy	—	MP	VP15TF	WP	VP15TF	40 (20–50)	0.15 (0.1–0.2)	0.5
H	Hardened Steel	40–55HRC	MP	VP15TF	WP	VP15TF	80 (60–100)	0.15 (0.1–0.2)	0.5

(Note 1) With low workpiece clamping rigidity or long overhang of the tool, adjust cutting speed and feed to 70 or 80% of the recommended conditions above.