

Recommended Cutting Conditions

■ Dry Cutting

(mm)

	Workpiece Material	Properties	Grade	vc (m/min)
P	Mild Steel	Hardness ≤180HB	MV1020	220 (170–270)
			MP6120	150 (100–200)
			MV1030	140 (80–200)
			MP6130	130 (80–180)
	Carbon Steel, Alloy Steel	Hardness 180–280HB	MV1020	200 (150–250)
			MP6120	130 (80–180)
			MV1030	120 (60–180)
			MP6130	110 (60–160)
	Carbon Steel, Alloy Steel	Hardness 280–350HB	MV1020	150 (100–200)
			MP6120	100 (50–150)
			MV1030	90 (30–150)
			MP6130	80 (30–130)
	Alloy Tool Steel	Hardness ≤350HB (annealing)	MP6120	100 (50–150)
			MP6130	80 (30–120)
Pre-hardened Steel	Hardness 35–45HRC	MP6120	100 (70–130)	
		MP6130	80 (50–110)	
K	Gray Cast Iron	Tensile Strength ≤350MPa	MC5020	150 (100–200)
			VP15TF	120 (80–160)
	Ductile Cast Iron	Tensile Strength ≤450MPa	MV1020	200 (150–250)
			MC5020	150 (100–200)
			MV1030	140 (80–200)
			VP15TF	120 (80–160)
	Ductile Cast Iron	Tensile Strength ≤800MPa	MV1020	180 (130–230)
			MC5020	150 (100–200)
			MV1030	140 (80–200)
			VP15TF	120 (80–160)
H	Hardened Steel	Hardness 40–55HRC	VP15TF	70 (50–90)

■ Dry Cutting

(mm)

Workpiece Material	Properties	Grade	ap (mm)	Width of Cut ae						
				≤0.5DC		0.5DC–0.8DC		0.8DC–DC		
				Breaker	fz (mm/t.)	Breaker	fz (mm/t.)	Breaker	fz (mm/t.)	
P	Mild Steel	Hardness ≤180HB	MV1020 MV1030 MP6120 MP6130	≤1.6	R	0.6	R	0.8	M	1.0
	Carbon Steel, Alloy Steel	Hardness 180–280HB	MV1020 MV1030 MP6120 MP6130	≤1.6	R	0.6	R	0.8	M	1.0
	Carbon Steel, Alloy Steel	Hardness 280–350HB	MV1020 MV1030 MP6120 MP6130	≤1.6	R	0.5	R	0.6	R	0.7
	Alloy Tool Steel	Hardness ≤350HB (annealing)	MP6120 MP6130	≤1.6	R	0.5	R	0.6	R	0.7
	Pre-hardened Steel	Hardness 35-45HRC	MP6120 MP6130	≤1.6	R	0.5	R	0.6	R	0.7
K	Gray Cast Iron	Tensile Strength ≤350MPa	MC5020	≤1.6	R	0.6	R	0.8	M	1.0
			VP15TF	≤1.6	M	0.6	M	0.8	M	1.0
	Ductile Cast Iron	Tensile Strength ≤450MPa	MV1020 MV1030 MC5020 VP15TF	≤1.6	R	0.6	R	0.8	M	1.0
	Ductile Cast Iron	Tensile Strength ≤800MPa	MV1020 MV1030 MC5020 VP15TF	≤1.6	R	0.5	R	0.6	R	0.7
H	Hardened Steel	Hardness 40–55HRC	VP15TF	≤1.6	R	0.4	R	0.5	R	0.6