RECOMMENDED CUTTING CONDITIONS

■ CUTTING SPEED

Workpiece Material		Hardness	Insert Grade 1st Recommendation	Insert Grade 2nd Recommendation	Breaker		Cutting Width **ae** (mm) ≤0.15DC	0.15—0.3DC	DC (Slot)
							Cutting Speed **vc** (m/min)		
P	Mild Steel	≤180HB	MP6120	VP15TF	M	H	200(160—250)	160(120—200)	140(120—160)
			MP6130	VP20RT	M	H	170(130—220)	130(90—170)	110(90—130)
	Carbon Steel Alloy Steel	180—350HB	MP6120	VP15TF	M	H	160(120—200)	120(100—140)	100(80—120)
			MP6130	VP20RT	M	H	130(90—170)	90(70—110)	70(50—90)
M	Stainless Steel	≤270HB	MP7130	VP15TF	M	H	160(120—200)	120(100—140)	100(80—120)
K	Gray Cast Iron	≤350MPa	MC5020	VP15TF	H	—	230(180—280)	190(140—240)	190(140—240)
	Ductile Cast Iron	≤800MPa	MC5020	VP15TF	H	—	190(140—220)	170(120—220)	170(120—220)
S	Titanium Alloy	≤350HB	MP9120	VP15TF	H	M	50(40—70)	—	50(40—70)
			MP9130	VP20RT	H	M	40(30—60)	—	40(30—60)
	Heat resistant Alloy	—	MP9120	VP15TF	H	M	40(30—60)	—	40(30—60)
			MP9130	VP20RT	H	M	30(20—40)	—	30(20—40)

■ DEPTH OF CUT AND FEED

Workpiece Material		Characteristics	Depth of Cut **ae** (mm)	Depth of Cut **ap** (mm)	Feed per Tooth **fz** (mm/t) Cutter Diameter **DC** (mm) ø40 Length of cut 56mm ø50 Length of cut 42mm	ø50 Length of cut 56mm ø63 Length of cut 56mm	ø50 Length of cut 84mm
P	Mild Steel	≤180HB	≤0.3DC	≤20	0.25	0.25	0.20
				20—50	0.20	0.20	0.15
				50—80	—	—	0.10
			DC (Slot)	≤20	0.20	0.20	0.15
				20—50	0.15	0.15	—
	Carbon Steel Alloy Steel	180—350HB	≤0.3DC	≤20	0.25	0.25	0.20
				20—50	0.20	0.20	0.15
				50—80	—	—	0.10
			DC (Slot)	≤20	0.15	0.15	0.10
				20—50	0.10	0.10	—
M	Stainless Steel	≤270HB	≤0.3DC	≤20	0.25	0.25	0.20
				20—50	0.20	0.20	0.15
				50—80	—	—	0.10
			DC (Slot)	≤10	0.10	0.10	0.07
K	Gray Cast Iron	Tensile Strength ≤350MPa	≤0.15DC	≤10	0.30	0.30	0.25
				10—50	0.25	0.25	0.20
				50—80	—	—	0.15
			0.15—0.3DC	≤10	0.25	0.25	0.20
				10—50	0.20	0.20	0.15
				50—80	—	—	0.10
			DC (Slot)	≤10	0.25	0.25	0.20
				10—50	0.20	0.20	0.15
	Ductile Cast Iron	Tensile Strength ≤800MPa	≤0.15DC	≤20	0.25	0.25	0.20
				20—50	0.20	0.20	0.15
				50—80	—	—	0.10
			0.15—0.3DC	≤20	0.20	0.20	0.15
				20—50	0.15	0.15	0.10
				50—80	—	—	0.07
			DC (Slot)	≤10	0.15	0.15	0.10
				10—50	0.10	0.10	—
S	Titanium Alloy	≤350HB	≤0.15DC	≤20	0.10	0.10	—
				20—50	0.10	0.10	—
			DC (Slot)	≤50	0.08	0.08	—
	Heat resistant Alloy	—	≤0.15DC	≤10	0.07	0.07	—
			DC (Slot)	≤20	0.05	0.05	—

Note 1) The above cutting conditons are determined based on high rigidity machine and workpiece, where no vibration occurred. Please adjust machining conditions if the vibration is generated.