RECOMMENDED CUTTING CONDITIONS (SHELL TYPE)

■ SHOULDER MILLING

	Workpiece Material	Hardness	Grade Breaker	Cutting Speed **vc** (m/min)	Depth of Cut **ap** (mm)	Cutting Width **ae** (mm)	Feed per Tooth **fz** (mm/t)
P	Mild Steel	≤180HB	**VP15TF JM**	120 (100—140)	—0.5DC	—10	0.15—0.30
				120 (100—140)	0.5DC—	—10	0.15—0.25
	Carbon Steel Alloy Steel	180—350HB	**VP15TF JM**	120 (80—130)	—0.5DC	—10	0.15—0.30
				100 (80—120)	0.5DC—	—10	0.15—0.25
	Alloy Tool Steel	≤300HB	**VP15TF JM**	100 (60—110)	—0.5DC	—10	0.10—0.20
				80 (60—100)	0.5DC—	—10	0.10—0.15
M	Stainless Steel	≤200HB	**VP20RT JM**	140 (100—150)	—0.5DC	—10	0.10—0.25
				120 (100—140)	0.5DC—	—10	0.10—0.20
K	Gray Cast Iron	Tensile Strength ≤350MPa	**VP15TF WH**	120 (80—130)	—0.5DC	—10	0.25—0.40
				100 (80—120)	0.5DC—	—10	0.25—0.40
			VP15TF JM	120 (80—130)	—0.5DC	—10	0.15—0.30
				100 (80—120)	0.5DC—	—10	0.15—0.25
	Ductile Cast Iron	Tensile Strength ≤800MPa	**VP15TF WH**	100 (60—110)	—0.5DC	—10	0.20—0.35
				80 (60—110)	0.5DC—	—10	0.20—0.35
			VP15TF JM	100 (60—120)	—0.5DC	—10	0.15—0.30
				80 (60—120)	0.5DC—	—10	0.15—0.30
S	Ti Alloy	≤350HB	**VP20RT JM**	45 (35—50)	—0.5DC	—10	0.08—0.10
				40 (35—50)	0.5DC—	—10	0.08—0.10

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.

■ SLOT MILLING

	Workpiece Material	Hardness	Grade Breaker	Cutting Speed **vc** (m/min)	Depth of Cut **ap** (mm)	Cutting Width **ae** (mm)	Feed per Tooth **fz** (mm/t)
P	Mild Steel	≤180HB	**VP15TF JM**	120 (100—140)	—10	DC	0.15—0.25
	Carbon Steel Alloy Steel	180—350HB	**VP15TF JM**	100 (80—120)	—0.25DC	DC	0.15—0.25
	Alloy Tool Steel	≤300HB	**VP15TF JM**	80 (60—100)	—10	DC	0.10—0.20
M	Stainless Steel	≤200HB	**VP20RT JM**	100 (80—140)	—10	DC	0.10—0.15
K	Gray Cast Iron	Tensile Strength ≤350MPa	**VP15TF WH**	80 (60—100)	—0.25DC	DC	0.10—0.25
				60 (50—100)	—0.6DC	DC	0.10—0.20
			VP15TF JM	80 (60—100)	—0.25DC	DC	0.10—0.20
				60 (50—100)	—0.6DC	DC	0.10—0.15
	Ductile Cast Iron	Tensile Strength ≤800MPa	**VP15TF WH**	80 (60—100)	—0.25DC	DC	0.10—0.25
				60 (50—100)	—0.5DC	DC	0.10—0.20
			VP15TF JM	80 (60—100)	—0.25DC	DC	0.10—0.20
				60 (50—100)	—0.5DC	DC	0.10—0.15
S	Ti Alloy	≤350HB	**VP20RT JM**	40 (35—50)	—0.25DC	DC	0.06—0.10

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.