

RECOMMENDED CUTTING CONDITIONS (Shank Type)

CUTTING CONDITIONS FOR SHOULDER MILLING (Number of effective flutes is 2.)

Work Material	Hardness	Insert Grade/Breaker	Cutting Speed vc (SFM)	Width of Cut ae (inch)	Depth of Cut ap (inch)	Feed per Tooth fz (IPT)	
P Mild Steel	≤180HB	VP15TF WH	395 (330-460)	<.197	<4D1	.006-.010	
		VP15TF JM	395 (330-460)	<.394	<2D1	.006-.010	
	Carbon Steel Alloy Steel	180-350HB	VP15TF WH	260 (230-395)	<.197	<4D1	.006-.010
			VP15TF JM	260 (230-395)	<.394	<2D1	.006-.010
	Alloy Tool Steel	≤300HB	VP15TF WH	260 (200-330)	<.197	<4D1	.004-.008
			VP15TF JM	260 (200-330)	<.394	<2D1	.004-.008
M Stainless Steel	≤200HB	VP20RT WH	260 (230-395)	<.197	<4D1	.004-.008	
		VP20RT JM	260 (230-395)	<.394	<2D1	.004-.008	
K Cast Iron	Tensile Strength ≤350MPa	VP15TF WH	330 (260-395)	<.197	<4D1	.006-.016	
		VP15TF JM	330 (260-395)	<.197	<4D1	.004-.010	
Ductile Cast Iron	Tensile Strength ≤800MPa	VP15TF WH	260 (200-330)	<.197	<4D1	.006-.014	
		VP15TF JM	260 (200-330)	<.197	<4D1	.004-.008	
S Titanium Alloy	≤350HB	VP20RT WH	130 (115-165)	<.197	<4D1	.003-.005	
		VP20RT JM	130 (115-165)	<.394	<2D1	.003-.005	

(Note 1) The above cutting conditions are determined based on high rigidity machine and workpiece, where no vibration occurred.

Please adjust processing conditions if the vibration is generated.

(Note 2) For tools with a cutting edge length of 7.87" or more, please reduce the cutting speed and table feed by 10-20% and the width of cut by 50%.

(Note 3) If the cutting angle between the tool and workpiece exceeds 90° when machining corners, Reduce the cutting speed and table feed by 10-20% and ae by 50%. Also if possible, set a radius cutting path for corners.

CUTTING CONDITIONS FOR SLOT MILLING

Work Material	Hardness	Insert Grade/Breaker	Cutting Speed vc (SFM)	Width of Cut ae (inch)	Depth of Cut ap (inch)	Feed per Tooth fz (IPT)	
P Mild Steel	≤180HB	VP15TF WH	200 (165-395)	D1	<.394	.004-.010	
		VP15TF JM	200 (165-395)	D1	<.394	.004-.006	
	Carbon Steel Alloy Steel	180-350HB	VP15TF WH	200 (165-330)	D1	<.394	.004-.010
			VP15TF JM	200 (165-330)	D1	<.394	.004-.006
	Alloy Tool Steel	≤300HB	VP15TF WH	165 (130-260)	D1	<.394	.004-.010
			VP15TF JM	165 (130-260)	D1	<.394	.004-.006
M Stainless Steel	≤200HB	VP20RT WH	200 (165-395)	D1	<.394	.004-.010	
		VP20RT JM	200 (165-395)	D1	<.394	.004-.006	
K Cast Iron	Tensile Strength ≤350MPa	VP15TF WH	165 (130-260)	D1	<1.969	.006-.010	
		VP15TF JM	165 (130-260)	D1	<1.575	.004-.008	
Ductile Cast Iron	Tensile Strength ≤800MPa	VP15TF WH	130 (115-260)	D1	<1.575	.006-.010	
		VP15TF JM	130 (115-260)	D1	<1.181	.004-.008	
S Titanium Alloy	≤350HB	VP20RT WH	115 (100-165)	D1	<.394	.003-.005	
		VP20RT JM	115 (100-165)	D1	<.394	.003-.005	

(Note 1) The above cutting conditions are determined based on high rigidity machine and workpiece, where no vibration occurred.

Please adjust processing conditions if the vibration is generated.