

RECOMMENDED CUTTING CONDITIONS (Shell Type)

CUTTING CONDITIONS FOR SHOULDER MILLING (Number of effective flutes is 4.)

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 JM	395 (330-460)	<.394	<0.5D ₁	.006-.012	
			395 (330-460)	<.394	>0.5D ₁	.006-.010	
	Carbon Steel Alloy Steel	180-350HB	VP15TF JM	395 (260-425)	<.394	<0.5D ₁	.006-.012
				330 (260-395)	<.394	>0.5D ₁	.006-.010
	Alloy Tool Steel	≤300HB	VP15TF JM	330 (200-360)	<.394	<0.5D ₁	.004-.010
				260 (200-330)	<.394	>0.5D ₁	.004-.006
M Stainless Steel	≤200HB	VP20RT JM	460 (330-490)	<.394	<0.5D ₁	.004-.010	
			395 (330-460)	<.394	>0.5D ₁	.004-.008	
K Cast Iron	Tensile Strength ≤350MPa	VP15TF WH	395 (260-425)	<.394	<0.5D ₁	.010-.016	
			330 (260-395)	<.394	>0.5D ₁	.010-.016	
		VP15TF JM	395 (260-425)	<.394	<0.5D ₁	.006-.012	
			330 (260-395)	<.394	>0.5D ₁	.006-.010	
Ductile Cast Iron	Tensile Strength ≤800MPa	VP15TF WH	330 (200-360)	<.394	<0.5D ₁	.008-.014	
			260 (200-360)	<.394	>0.5D ₁	.008-.014	
		VP15TF JM	330 (200-395)	<.394	<0.5D ₁	.006-.012	
			260 (200-395)	<.394	>0.5D ₁	.006-.012	
S Titanium Alloy	≤350HB	VP20RT JM	150 (115-165)	<.394	<0.5D ₁	.003-.004	
			150 (115-165)	<.394	>0.5D ₁	.003-.004	

(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.

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 JM	395 (330-460)	D ₁	<0.25D ₁	.006-.010	
	Carbon Steel Alloy Steel	180-350HB	VP15TF JM	330 (260-395)	D ₁	<0.25D ₁	.006-.010
				260 (200-330)	D ₁	<.394	.004-.008
M Stainless Steel	≤200HB	VP20RT JM	330 (260-460)	D ₁	<.394	.004-.006	
K Cast Iron	Tensile Strength ≤350MPa	VP15TF WH	260 (200-330)	D ₁	<0.25D ₁	.004-.010	
			200 (165-330)	D ₁	<0.6D ₁	.004-.008	
		VP15TF JM	260 (200-330)	D ₁	<0.25D ₁	.004-.008	
			200 (165-330)	D ₁	<0.6D ₁	.004-.006	
Ductile Cast Iron	Tensile Strength ≤800MPa	VP15TF WH	260 (200-330)	D ₁	<0.25D ₁	.004-.010	
			200 (165-330)	D ₁	<0.5D ₁	.004-.008	
		VP15TF JM	260 (200-330)	D ₁	<0.25D ₁	.004-.008	
			200 (165-330)	D ₁	<0.5D ₁	.004-.006	
S Titanium Alloy	≤350HB	VP20RT JM	130 (115-165)	D ₁	<0.25D ₁	.002-.004	

(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.