

MV1000 SERIES

RECOMMENDED CUTTING CONDITIONS

AHX440S

DRY CUTTING

Material			Properties	Vc		fz	ap	ae
				MV1020	MV1030			
P	Mild steel	≤180HB	300 (200 – 400)	245 (190 – 300)	0.3 (0.2 – 0.4)	≤3	≤0.8 DC	
	Carbon steel	180–280HB	260 (170 – 350)	210 (150 – 270)	0.3 (0.2 – 0.4)	≤3	≤0.8 DC	
	Alloy steel	280–350HB	180 (100 – 250)	135 (90 – 180)	0.3 (0.2 – 0.4)	≤3	≤0.8 DC	
M	Stainless steel	≤200HB	—	185 (120 – 250)	0.2 (0.1 – 0.3)	≤3	≤0.8 DC	
		>200HB	—	140 (80 – 200)	0.2 (0.1 – 0.3)	≤3	≤0.8 DC	
K	Ductile cast iron	Tensile strength ≤450MPa	240 (130 – 350)	185 (120 – 250)	0.2 (0.1 – 0.3)	≤3	≤0.8 DC	
		Tensile strength ≤800MPa	220 (80 – 350)	150 (100 – 200)	0.2 (0.1 – 0.3)	≤3	≤0.8 DC	


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1. Refer to the above table and set up cutting conditions according to cutting applications.
2. When placing emphasis on surface finish quality, wet cutting is recommended. (tool life is lowered as compared to dry cutting)
3. The recommended depth of cut differs according to insert geometry.
4. When clamp rigidity is low and tool overhang is long, we recommended to reduce the cutting speed and the feed rate by 30 %.
5. Recommended wet cutting for good surface finishing of stainless steel. (Tool life is short compared to wet cutting.)

AHX475S

DRY CUTTING

Material	Properties		Vc		fz	ap	ae
			MV1020	MV1030			
P	Mild steel	≤180HB	R 220 (170 – 270)	140 (80 – 200)	0.6	≤1.6	≤0.5 DC
			R 220 (170 – 270)	140 (80 – 200)	0.8	≤1.6	0.5 DC < ae ≤ 0.8 DC
			M 220 (170 – 270)	140 (80 – 200)	1.0	≤1.6	0.8 DC < ae ≤ DC
	Carbon steel Alloy steel	180–280HB	R 200 (150 – 250)	120 (60 – 180)	0.6	≤1.6	≤0.5 DC
			R 200 (150 – 250)	120 (60 – 180)	0.8	≤1.6	0.5 DC < ae ≤ 0.8 DC
			M 200 (150 – 250)	120 (60 – 180)	1.0	≤1.6	0.8 DC < ae ≤ DC
		280–350HB	R 150 (100 – 200)	90 (30 – 150)	0.5	≤1.6	≤0.5 DC
			R 150 (100 – 200)	90 (30 – 150)	0.6	≤1.6	0.5 DC < ae ≤ 0.8 DC
			R 150 (100 – 200)	90 (30 – 150)	0.7	≤1.6	0.8 DC < ae ≤ DC
K	Ductile cast iron	Tensile strength ≤450MPa	R 200 (150 – 250)	140 (80 – 200)	0.6	≤1.6	≤0.5 DC
			R 200 (150 – 250)	140 (80 – 200)	0.8	≤1.6	0.5 DC < ae ≤ 0.8 DC
			M 200 (150 – 250)	140 (80 – 200)	1.0	≤1.6	0.8 DC < ae ≤ DC
		Tensile strength ≤800MPa	R 180 (130 – 230)	140 (80 – 200)	0.5	≤1.6	≤0.5 DC
			R 180 (130 – 230)	140 (80 – 200)	0.6	≤1.6	0.5 DC < ae ≤ 0.8 DC
			R 180 (130 – 230)	140 (80 – 200)	0.7	≤1.6	0.8 DC < ae ≤ DC

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1. When clamp rigidity is low and tool overhang is long, we recommended to reduce the cutting speed and the feed rate by 30 %.