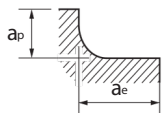


MILLING CONDITIONS

4 flute variable lead ball nose carbide endmill.

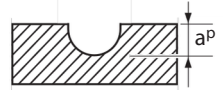
SIDE MILLING

														HYP-VG4-EBM	
Vc	Mild Steels Carbon Steels Cast Iron		400 Stainless Steels Alloy Steels		300 Stainless Steels Hardened Steel		PH Stainless Steels Hardened Steel		Hardened Steel		Titanium Alloys		Nickel Base Alloys		
	< 25 HRC		< 30 HRC		< 35 HRC		< 45 HRC		< 50 HRC		< 35 HRC		< 35 HRC		
	120 ~ 150 m/min		90 ~ 120 m/min		60 ~ 110 m/min		60 ~ 75 m/min		50 ~ 70 m/min		50 ~ 75 m/min		30 ~ 45 m/min		
Ø	Speed (min-1)	Feed (mm/min.)	Speed (min-1)	Feed (mm/min.)	Speed (min-1)	Feed (mm/min.)	Speed (min-1)	Feed (mm/min.)	Speed (min-1)	Feed (mm/min.)	Speed (min-1)	Feed (mm/min.)	Speed (min-1)	Feed (mm/min.)	
3	14,300	1,170	11,100	640	9,000	480	7,200	380	6,400	360	6,600	330	4,000	250	
4	10,700	1,210	8,400	720	6,800	530	5,400	420	4,800	410	4,900	340	3,000	290	
5	8,600	1,180	6,700	780	5,400	520	4,300	420	3,800	420	3,900	350	2,400	290	
6	7,200	1,140	5,600	810	4,500	550	3,600	440	3,200	450	3,300	380	2,000	310	
8	5,400	1,140	4,200	770	3,400	530	2,700	430	2,400	410	2,500	370	1,500	290	
10	4,300		3,300	750	2,700	520	2,200	420	1,900	400	2,000	350	1,200	290	
12	3,600		2,800	730	2,300	510	1,800	400	1,600	400	1,600	350	1,000	280	

Maximum depth of cut		$a_p=1.5D$ $a_e=0.5D$	$a_p=1.25D$ $a_e=0.4D$	$a_p=1.25D$ $a_e=0.2D$	$a_p=1.25D$ $a_e=0.4D$	$a_p=1D$ $a_e=0.2D$
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SLOTING

														HYP-VG4-EBM	
Vc	Mild Steels Carbon Steels Cast Iron		400 Stainless Steels Alloy Steels		300 Stainless Steels Hardened Steel		PH Stainless Steels Hardened Steel		Hardened Steel		Titanium Alloys		Nickel Base Alloys		
	< 25 HRC		< 30 HRC		< 35 HRC		< 45 HRC		< 50 HRC		< 35 HRC		< 35 HRC		
	100 ~ 120 m/min		75 ~ 100 m/min		50 ~ 85 m/min		50 ~ 60 m/min		45 ~ 55 m/min		40 ~ 60 m/min		20 ~ 30 m/min		
Ø	Speed (min-1)	Feed (mm/min.)	Speed (min-1)	Feed (mm/min.)	Speed (min-1)	Feed (mm/min.)	Speed (min-1)	Feed (mm/min.)	Speed (min-1)	Feed (mm/min.)	Speed (min-1)	Feed (mm/min.)	Speed (min-1)	Feed (mm/min.)	
3	11,700	900	9300	540	7200	390	5800	270	5300	300	5300	270	2700	170	
4	8,800	960	7000	600	5400	440	4400	290	4000	340	4000	290	2000	190	
5	7,000	950	5600	640	4300	430	3500	310	3200	370	3200	300	1600	190	
6	5,800	970	4700	680	3600	460	2900	330	2700	380	2700	310	1300	200	
8	4,400	960	3500	640	2700	440	2200	310	2000	340	2000	290	1000	190	
10	3,500	920	2800	620	2100	410	1800	310	1600	340	1600	300	800	190	
12	2,900	920	2300	600	1800	410	1500	300	1300	330	1300	290	700	200	

Maximum depth of cut		$= < D \times 1$	$= < D \times 0.75$	$= < D \times 0.5$	$= < D \times 0.5$	$= < D \times 0.2$
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