

MIRACLE END MILL FOR HIGH HARDNESS STEEL

CARBIDE

VC4MB

Ball nose end mill, Medium cut length, 4 flute

RECOMMENDED CUTTING CONDITIONS

R PRFRAD (mm)	Alloy steel, Tool steel, Pre-hardened steel, Hardened steel (—55HRC) AISI H13, AISI W1-10, AISI P21				Hardened steel (55—62HRC) AISI D2					
	$\alpha \leq 15^\circ$		$\alpha > 15^\circ$		Depth of cut (mm)	$\alpha \leq 15^\circ$		$\alpha > 15^\circ$		Depth of cut (mm)
	Revolution (min ⁻¹)	Feed rate (mm/min)	Revolution (min ⁻¹)	Feed rate (mm/min)		Revolution (min ⁻¹)	Feed rate (mm/min)	Revolution (min ⁻¹)	Feed rate (mm/min)	
R 0.5	40000	8000	40000	3800	0.06	40000	5600	40000	3100	0.05
R 0.75	40000	9600	40000	4800	0.09	40000	7200	38000	4200	0.08
R 1	40000	9600	40000	5600	0.11	40000	8000	28000	3100	0.10
R 1.5	40000	12000	32000	5600	0.13	32000	7700	19000	2900	0.12
R 2	32000	11000	24000	4700	0.15	24000	6200	14000	2500	0.13
R 2.5	25000	9000	19000	3800	0.20	19000	5300	12000	2200	0.15
R 3	21000	8400	15000	3400	0.25	16000	4800	9600	2000	0.20
R 4	16000	6400	12000	2600	0.30	12000	3600	7200	1600	0.20
R 5	13000	5200	9600	2200	0.50	10000	3200	5800	1300	0.20
R 6	9000	3600	7200	1700	0.50	7000	2200	4300	940	0.30

Depth of cut	<p style="text-align: center;">$\leq 0.2 \text{PRFRAD}$</p> <p style="text-align: center;">\leq Please refer to the list above for depth of cut.</p> <p style="text-align: right;">PRFRAD: Radius</p>
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- 1) If the depth of cut is shallow, the revolution and feed rate can be increased.
- 2) If the rigidity of the machine or the work materials installation is very low, or chattering and noise are generated, reduce the revolution and feed rate proportionately.

SOLID END MILLS