

# IMPACT MIRACLE END MILLS

CARBIDE

## VF4MB

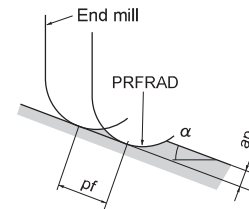
Ball nose, Medium cut length, 4 flute

### RECOMMENDED CUTTING CONDITIONS

R PRFRAD (mm)	Hardened steel (45—55HRC) AISI H13					Hardened steel (55—62HRC) AISI D2					Hardened steel (62—70HRC) AISI W1, AISI M2				
	$\alpha \leq 15^\circ$		$\alpha > 15^\circ$		Depth of cut $a_p$ (mm)	$\alpha \leq 15^\circ$		$\alpha > 15^\circ$		Depth of cut $a_p$ (mm)	$\alpha \leq 15^\circ$		$\alpha > 15^\circ$		Depth of cut $a_p$ (mm)
	Revolution ( $\text{min}^{-1}$ )	Feed rate (mm/min)	Revolution ( $\text{min}^{-1}$ )	Feed rate (mm/min)		Revolution ( $\text{min}^{-1}$ )	Feed rate (mm/min)	Revolution ( $\text{min}^{-1}$ )	Feed rate (mm/min)		Revolution ( $\text{min}^{-1}$ )	Feed rate (mm/min)	Revolution ( $\text{min}^{-1}$ )	Feed rate (mm/min)	
<b>R0.5</b>	40000	8000	40000	3800	0.06	40000	5600	40000	3100	0.05	40000	4700	32000	1700	0.03
<b>R1</b>	40000	9600	40000	5600	0.11	40000	8000	28000	3100	0.10	24000	5000	16000	1200	0.06
<b>R1.5</b>	40000	12000	32000	5600	0.13	32000	7700	19000	2900	0.12	16000	4200	11000	1100	0.07
<b>R2</b>	32000	11000	24000	4700	0.15	24000	6200	14000	2500	0.13	12000	3100	8000	1000	0.08
<b>R2.5</b>	25000	9000	19000	3800	0.20	19000	5300	12000	2200	0.15	9600	2700	6000	780	0.08
<b>R3</b>	21000	8400	15000	3400	0.25	16000	4800	9600	2000	0.20	8000	2300	5000	780	0.09
<b>R4</b>	16000	6400	12000	2600	0.30	12000	3600	7200	1600	0.20	6000	1900	4000	620	0.09
<b>R5</b>	13000	5200	9600	2200	0.50	10000	3200	5800	1300	0.20	4800	1500	3000	550	0.10
<b>R6</b>	9000	3600	7200	1700	0.50	7000	2200	4300	940	0.30	3600	1100	2200	400	0.10

PRFRAD:Radius

- 1)  $\alpha$  is the inclination angle of the machined surface.
- 2) If the depth of cut is shallow, the revolution and feed rate can be increased.
- 3) 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