

IMPACT MIRACLE END MILLS

CARBIDE

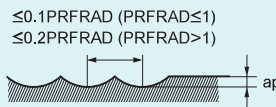
VF3XB

Ball nose, Medium cut length, 3 flute, Taper neck

RECOMMENDED CUTTING CONDITIONS

Work material			Carbon steel, Cast iron, Alloy steel (—30HRC)			Alloy steel, Tool steel, Pre-hardened steel			Hardened steel (45—55HRC)			Hardened steel (55—62HRC)			
			AISI 1050, AISI No 35 B, AISI P20			AISI H13, AISI W1-10, AISI P21			AISI H13			AISI D2			
R PRFRAD (mm)	Taper angle one side BHTA	Neck length LU_2 (mm)	Revolution (min ⁻¹)	Feed rate (mm/min)	Depth of cut ap (mm)	Revolution (min ⁻¹)	Feed rate (mm/min)	Depth of cut ap (mm)	Revolution (min ⁻¹)	Feed rate (mm/min)	Depth of cut ap (mm)	Revolution (min ⁻¹)	Feed rate (mm/min)	Depth of cut ap (mm)	
R0.4	0.4°	6	34000	2700	0.03	31000	2200	0.025	24000	1700	0.02	19000	1400	0.015	
		8	31000	2100	0.02	29000	1700	0.02	22000	1300	0.015	18000	1000	0.01	
		12	28000	2000	0.015	26000	1600	0.01	20000	1200	0.01	16000	960	0.007	
	0.9°	8	31000	2200	0.02	29000	1800	0.02	22000	1400	0.015	18000	1100	0.01	
		12	28000	2100	0.015	26000	1700	0.01	20000	1300	0.01	16000	1000	0.007	
		16	25000	1100	0.01	23000	910	0.01	18000	700	0.008	14000	560	0.006	
R0.5	0.4°	8	27000	2700	0.04	25000	2200	0.04	19000	1700	0.03	15000	1400	0.02	
		10	24000	2200	0.03	22000	1800	0.025	17000	1400	0.02	14000	1100	0.015	
		12	24000	2200	0.03	22000	1800	0.025	17000	1400	0.02	14000	1100	0.015	
		16	22000	2100	0.03	21000	1700	0.025	16000	1300	0.02	13000	1000	0.015	
		20	20000	1400	0.015	18000	1200	0.01	14000	900	0.01	11000	720	0.007	
		25	18000	1300	0.015	17000	1000	0.01	13000	800	0.009	10000	640	0.006	
		30	15000	960	0.01	14000	780	0.01	11000	600	0.008	8800	480	0.006	
		35	14000	800	0.008	13000	650	0.007	10000	500	0.006	8000	400	0.004	
	0.9°	8	27000	2900	0.04	25000	2300	0.04	19000	1800	0.03	15000	1400	0.02	
		12	24000	2400	0.03	22000	2000	0.025	17000	1500	0.02	14000	1200	0.015	
		16	22000	2200	0.03	21000	1800	0.025	16000	1400	0.02	13000	1100	0.015	
		20	20000	1600	0.015	18000	1300	0.01	14000	1000	0.01	11000	800	0.007	
		25	18000	1400	0.015	17000	1200	0.01	13000	900	0.009	10000	720	0.006	
		30	15000	1100	0.01	14000	910	0.009	11000	700	0.008	8800	560	0.006	
		35	14000	960	0.008	13000	780	0.007	10000	600	0.006	8000	480	0.004	
		40	11000	800	0.007	11000	650	0.006	8000	500	0.005	6400	400	0.003	
	1.5°	50	8400	610	0.006	7800	490	0.005	6000	380	0.004	4800	300	0.003	
		60	7000	510	0.004	6500	400	0.004	5000	320	0.003	4000	260	0.002	
		70	7000	480	0.003	6500	390	0.002	5000	300	0.002	4000	240	0.001	
		12	24000	2600	0.03	22000	2100	0.025	17000	1600	0.02	14000	1300	0.015	
		16	22000	2400	0.03	21000	2000	0.025	16000	1500	0.02	13000	1200	0.015	
		20	20000	1800	0.015	18000	1400	0.01	14000	1100	0.01	11000	880	0.007	
	R0.75	0.4°	10	18000	2700	0.06	17000	2200	0.05	13000	1700	0.04	10000	1400	0.03
			15	17000	2200	0.04	16000	1800	0.04	12000	1400	0.03	9600	1100	0.02
20			17000	2100	0.03	16000	1700	0.025	12000	1300	0.02	9600	1000	0.015	
30			14000	1600	0.015	13000	1300	0.01	10000	1000	0.01	8000	800	0.007	
0.9°		15	17000	2400	0.04	16000	2000	0.04	12000	1500	0.03	9600	1200	0.02	
		20	17000	2200	0.03	16000	1800	0.025	12000	1400	0.02	9600	1100	0.015	
	30	14000	1800	0.015	13000	1400	0.01	10000	1100	0.01	8000	880	0.007		
	40	13000	1300	0.01	12000	1000	0.01	9000	800	0.008	7200	640	0.006		
1.5°	15	17000	2600	0.04	16000	2100	0.04	12000	1600	0.03	9600	1300	0.02		
	20	17000	2400	0.03	16000	2000	0.025	12000	1500	0.02	9600	1200	0.015		
		30	14000	2000	0.015	13000	1600	0.01	10000	1200	0.01	8000	960	0.007	

Depth of cut



PRFRAD:Radius

- 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.