

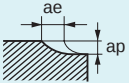
IMPACT MIRACLE END MILLS

VFHV RB

Corner radius, Short cut length, 4 flute, Irregular helix flutes

CARBIDE

SOLID END MILLS

Work material			Carbon steel, Cast iron, Alloy steel (—30HRC)				Alloy steel, Tool steel, Pre-hardened steel				Hardened steel (45—55HRC)				Hardened steel (55—62HRC)			
			Cf53, GG25				X40CrMoV51				X40CrMoV51				X210Cr12			
Dia. (mm)	Corner R (mm)	Neck length (mm)	Revolution (min ⁻¹)	Feed rate (mm/min)	Depth of cut ap (mm)	Depth of cut ae (mm)	Revolution (min ⁻¹)	Feed rate (mm/min)	Depth of cut ap (mm)	Depth of cut ae (mm)	Revolution (min ⁻¹)	Feed rate (mm/min)	Depth of cut ap (mm)	Depth of cut ae (mm)	Revolution (min ⁻¹)	Feed rate (mm/min)	Depth of cut ap (mm)	Depth of cut ae (mm)
7	1.5	—	4100	3900	1	3	3400	2700	0.8	3	2700	2200	0.6	3	2100	980	0.2	3
8	0.5	24	1800	1200	0.35	5	1500	840	0.3	5	1200	670	0.2	5	900	300	0.07	5
8	0.5	40	1800	1200	0.3	5	1500	840	0.25	5	1200	670	0.2	5	900	300	0.06	5
8	1	24	2500	2000	0.6	4.5	2100	1400	0.5	4.5	1700	1100	0.4	4.5	1300	500	0.12	4.5
8	1	40	2500	2000	0.5	4.5	2100	1400	0.4	4.5	1700	1100	0.3	4.5	1300	500	0.11	4.5
8	2	24	3600	3900	1.2	3	3000	2700	1	3	2400	2200	0.7	3	1800	980	0.24	3
8	2	40	3600	3900	1.1	3	3000	2700	0.9	3	2400	2200	0.7	3	1800	980	0.22	3
8	2	56	3000	3300	1	3	2500	2300	0.8	3	2000	1800	0.6	3	1500	830	0.2	3
8	2	72	3000	3300	0.6	3	2500	2300	0.5	3	2000	1800	0.4	3	1500	830	0.12	3
9	2	—	3200	3900	1.2	3.5	2700	2700	1	3.5	2100	2200	0.7	3.5	1600	980	0.24	3.5
10	0.5	30	1400	1200	0.35	6.5	1200	840	0.3	6.5	940	670	0.2	6.5	700	300	0.07	6.5
10	0.5	50	1400	1200	0.3	6.5	1200	840	0.25	6.5	940	670	0.2	6.5	700	300	0.06	6.5
10	1	30	2000	2000	0.6	6	1700	1400	0.5	6	1300	1100	0.4	6	1000	500	0.12	6
10	1	50	2000	2000	0.5	6	1700	1400	0.4	6	1300	1100	0.3	6	1000	500	0.11	6
10	2	30	2900	3900	1.2	4.5	2400	2700	1	4.5	1900	2200	0.7	4.5	1500	980	0.24	4.5
10	2	50	2900	3900	1.1	4.5	2400	2700	0.9	4.5	1900	2200	0.7	4.5	1500	980	0.22	4.5
10	2	70	2400	3300	1	4.5	2000	2300	0.8	4.5	1600	1800	0.6	4.5	1200	830	0.2	4.5
10	2	90	2400	3300	1	4.5	2000	2300	0.8	4.5	1600	1800	0.6	4.5	1200	830	0.2	4.5
11	2	—	2600	3600	1.2	5	2200	2500	1	5	1700	2000	0.7	5	1300	900	0.24	5
12	0.5	36	1200	1100	0.5	8	1000	770	0.4	8	800	620	0.3	8	600	280	0.11	8
12	0.5	60	1200	1100	0.5	8	1000	770	0.4	8	800	620	0.3	8	600	280	0.1	8
12	1	36	1400	1400	0.7	7.5	1200	1000	0.6	7.5	940	780	0.4	7.5	700	350	0.14	7.5
12	1	60	1400	1400	0.6	7.5	1200	1000	0.5	7.5	940	780	0.4	7.5	700	350	0.13	7.5
12	2	36	2400	3600	1.8	6	2000	2500	1.4	6	1600	2000	1.1	6	1200	900	0.4	6
12	2	60	2400	3600	1.6	6	2000	2500	1.3	6	1600	2000	1	6	1200	900	0.3	6
12	2	84	2000	3000	1.4	6	1700	2100	1.1	6	1300	1700	0.8	6	1000	750	0.3	6
12	2	108	2000	3000	0.9	6	1700	2100	0.7	6	1300	1700	0.5	6	1000	750	0.2	6
12	3	36	2400	3600	1.8	4.5	2000	2500	1.4	4.5	1600	2000	1.1	4.5	1200	900	0.4	4.5
12	3	60	2400	3600	1.6	4.5	2000	2500	1.3	4.5	1600	2000	1	4.5	1200	900	0.3	4.5
13	3	—	2200	3600	1.8	5	1800	2500	1.4	5	1500	2000	1.1	5	1100	900	0.4	5
16	0.5	42	900	900	0.5	11	750	630	0.4	11	600	500	0.3	11	450	230	0.1	11
16	2	42	1300	1500	0.9	9	1100	1100	0.7	9	870	840	0.5	9	650	380	0.2	9
16	3	42	1800	3000	1.8	7.5	1500	2100	1.4	7.5	1200	1700	0.9	7.5	900	750	0.4	7.5
16	3	80	1800	3000	1.6	7.5	1500	2100	1.3	7.5	1200	1700	0.8	7.5	900	750	0.3	7.5
16	3	120	1500	2500	1.4	7.5	1200	1800	1.1	7.5	1000	1400	0.7	7.5	750	630	0.3	7.5
Depth of cut																		

- 1) If the depth of cut is shallow, the revolution and feed rate can be increased.
- 2) Air blow or oil mist is recommended for good chip evacuation.
- 3) For profile machining such as moulds, machining conditions may differ considerably depending on the workpiece geometry, machining methods and depth of cut. Reduce the feed rate especially when machining the corner sections of a workpiece.
- 4) The irregular helix flute end mill has a larger effect on controlling vibration when compared to standard end mills. However, if the rigidity of the machine or the workpiece installation is poor, vibration or abnormal sound can occur. In this case, please reduce the revolution and feed rate proportionately, or set a lower depth of cut.