

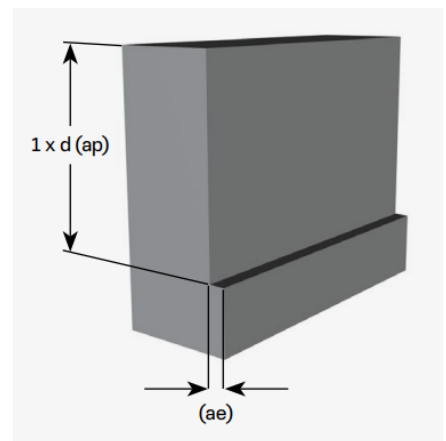
Steel & Exotics

Material Group	Cutting Speed v_c	Feed (mm/Z) End Mill Diameter								
	Metres/Min	3mm	4mm	5mm	6mm	8mm	10mm	12mm	16mm	20mm
Low Carbon Steels	150-200	0.020	0.030	0.035	0.045	0.060	0.072	0.085	0.100	0.115
Medium Carbon Steels	120-160	0.017	0.023	0.030	0.036	0.050	0.060	0.070	0.085	0.100
Tool Steel	90-150	0.015	0.020	0.027	0.035	0.045	0.055	0.060	0.075	0.090
Stainless Steel - Austenitic	90-115	0.015	0.025	0.030	0.035	0.050	0.060	0.070	0.090	0.100
Stainless Steel - High Strength	60-80	0.015	0.020	0.025	0.030	0.040	0.050	0.055	0.070	0.080
Stainless Steel - Duplex	60-70	0.012	0.015	0.020	0.025	0.035	0.040	0.050	0.060	0.065
Cast Iron - Grey	120-150	0.020	0.030	0.035	0.045	0.060	0.070	0.085	0.100	0.115
Cast Iron - Low/Medium Strength	110-140	0.020	0.025	0.030	0.040	0.050	0.060	0.070	0.090	0.100
Cast Iron - High Strength	110-130	0.015	0.020	0.025	0.030	0.040	0.050	0.055	0.070	0.080
Titanium (Soft) 110-275 Bhn	60-105	0.010	0.020	0.020	0.040	0.040	0.050	0.050	0.060	0.060
Titanium (Hard) 300-440 Bhn	50-60	0.010	0.015	0.020	0.025	0.035	0.045	0.050	0.060	0.070
Heat Resistant Alloys - Cobalt Based	25-40	0.008	0.013	0.016	0.019	0.026	0.032	0.037	0.046	0.054
Heat Resistant Alloys - Nickel Based	60-80	0.015	0.020	0.025	0.030	0.040	0.050	0.055	0.070	0.080
Heat Resistant Alloys - Iron Based	50-90	0.015	0.025	0.030	0.035	0.050	0.060	0.070	0.090	0.100
Hardened Steels <45 HRc	30-60	0.010	0.010	0.020	0.020	0.030	0.030	0.040	0.040	0.050
Hardened Steels 45-50 HRc	70-120	0.012	0.015	0.020	0.025	0.035	0.040	0.045	0.055	0.065

HSM for Multi-flute - 52° Helix Ranges Series

Material Group	Cutting Speed v_c	Feed (mm/Z) End Mill Diameter								
	Metres/Min	3mm	4mm	5mm	6mm	8mm	10mm	12mm	16mm	20mm
Hardened Steels <45 HRc	230-250	0.010	0.015	0.020	0.026	0.040	0.050	0.060	0.080	0.100
Hardened Steels 45-50 HRc	190-210	0.008	0.011	0.016	0.022	0.034	0.043	0.052	0.075	0.094
Hardened Steels 50-55 HRc	150-170	0.007	0.009	0.015	0.020	0.030	0.038	0.045	0.070	0.088
Hardened Steels 55-60 HRc	115-135	0.006	0.008	0.013	0.018	0.028	0.035	0.042	0.065	0.081
Hardened Steels 60+ HRc	90-110	0.004	0.006	0.010	0.014	0.025	0.031	0.038	0.059	0.074

Cutting data is given for shoulder-milling:
 Axial depth of cut: $1 \times \text{D.O.C. (ap)}$
 Radial width of cut: (ae)
 Up to:
 $\varnothing 6\text{mm}$ $0.02 \times \text{D.O.C.}$
 $\varnothing 8 - \varnothing 12\text{mm}$ $0.025 \times \text{D.O.C.}$
 $\varnothing 14 - \varnothing 20\text{mm}$ $0.030 \times \text{D.O.C.}$



HSM for 2 Flute - Ball Nose - 30° Helix Range Series

Material Group	Cutting Speed v_c	Feed (mm/Z) End Mill Diameter											
	Metres/Min	1mm	2mm	3mm	4mm	5mm	6mm	8mm	10mm	12mm	16mm	20mm	
Hardened Steels <45 HRc	<1000	0.012	0.030	0.040	0.045	0.050	0.060	0.065	0.070	0.075	0.090	0.100	
Hardened Steels 45-50 HRc	<750	0.010	0.027	0.035	0.037	0.040	0.050	0.060	0.060	0.070	0.085	0.095	
Hardened Steels 50-55 HRc	<470	0.008	0.025	0.030	0.033	0.037	0.045	0.055	0.060	0.065	0.075	0.085	
Hardened Steels 55-60 HRc	<350	0.007	0.022	0.028	0.030	0.033	0.038	0.050	0.055	0.060	0.075	0.080	
Hardened Steels 60+ HRc	<250	0.006	0.020	0.025	0.028	0.030	0.035	0.040	0.050	0.055	0.065	0.070	
	D.O.C. (ap) mm	0.05	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	