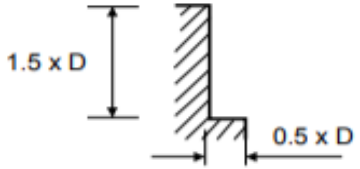
BALL NOSE ROUGHERS (127102)

MATERIAL GROUP	HRc		SIZE (MM)							
			8	10	12	16	20	25	32	40
P	≤20	Vc (M/MIN)	30	30	30	30	30	30	30	30
		n	1100	900	800	560	450	400	280	220
		Fz	0.023	0.044	0.044	0.063	0.078	0.105	0.143	0.17
		F(MM/MIN)	75	120	140	140	140	170	160	150
	20 - 30	Vc (M/MIN)	25	25	25	25	25	25	25	25
		n	900	800	630	450	400	310	220	180
		Fz	0.024	0.046	0.044	0.061	0.069	0.113	0.148	0.167
		F(MM/MIN)	65	110	110	110	110	140	130	120
	30 -40	Vc (M/MIN)	15	15	15	15	15	15	15	15
		n	560	450	400	280	220	180	140	110
		Fz	0.021	0.044	0.044	0.063	0.08	0.118	0.152	0.182
		F(MM/MIN)	35	60	70	70	70	85	85	80
N		Vc (M/MIN)	80	80	75	80	75	80	80	80
		n	3100	2500	2000	1600	1200	1000	800	630
		Fz	0.025	0.033	0.05	0.07	0.104	0.113	0.156	0.179
		F(MM/MIN)	230	250	400	450	500	450	500	450

Key	
Vc	Cutting speed (m/min)
n	RPM (rev/min)
Fz	Feed rate (mm/tooth)
f	Feed rate (mm/rev)
HRc	Hardness of metal



All recommendations are based on ideal machining conditions. Adjustments may need to be made according to your set-up. The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points.

To calculate RPM from cutting speed: $n = \frac{v_c \cdot 1000}{\pi \cdot \varnothing}$

To calculate cutting speed from RPM: $v_c = \frac{n \cdot \pi \cdot \varnothing}{1000}$