Twister® GP Hi-Roc®

Recommended Cutting Data 200 / 200S - Inch

Workpiece Material Group	ISO	Hardness	Tool Series	TYPE	DEPTH	vc - SFM	Drill Diameter							
							1/32	1/16	1/8	1/4	3/8	1/2	5/8	3/4
							f - IPR							
Free Machining & Low Carbon Steels 1006, 1008, 1015, 1018, 1020, 1022, 1025, 1117, 1140,1141, 11L08, 11L14, 1213, 12L13, 12L14, 1215, 1330	P	up to 28 Rc	200	●	3	330	.0010	.0020	.0030	.0060	.0080	.0100	.0110	.0120
			200S		3		.0005	.0010	.0015	.0030	.0040	.0050	.0060	.0060
			200A		3	495	.0010	.0020	.0030	.0060	.0080	.0100	.0110	.0120
Medium Carbon & High Carbon Steels, Alloy Steels & Easy to Machine Tool Steels 1030, 1035, 1040, 1045, 1050, 1052, 1055, 1060, 1085, 1095, 1541, 1551, 9255, 2515, 3135, 3415, 4130, 4137, 4140, 4150, 4320, 4340, 4520, 5015, 5115, 5120, 5132, 5140, 5155, 6150, 8620, 9262, 9840, 52100, O1, O2, O6, S2,W1 to W310	P	28 to 38 Rc	200		3	265	.0010	.0020	.0030	.0060	.0080	.0100	.0110	.0120
			200S		3		.0005	.0010	.0015	.0030	.0040	.0050	.0060	.0060
			200A		3	395	.0010	.0020	.0030	.0060	.0080	.0100	.0110	.0120
Tool Steels & Die Steels O7, M1, M2, M3, M4, M7, T1, T2, T4, T5, T8, T15, A2, A3, A6, A7, H10, H11, H12, H13, H19, H21, L3, L6, L7, P2, P20, S1, S5, S7, 52100, A 128, D2, D3, D4, D5, D7	P	28 to 44 Rc	200		3	230	.0010	.0020	.0030	.0060	.0080	.0100	.0110	.0120
			200S		3		.0005	.0010	.0015	.0030	.0040	.0050	.0060	.0060
			200A		3	345	.0010	.0020	.0030	.0060	.0080	.0100	.0110	.0120
Hardened Steel	H	45 to 65 Rc	200	●	3	50	.0003	.0010	.0010	.0010	.0020	.0020	.0020	.0030
			200S		3		.0002	.0005	.0005	.0005	.0010	.0010	.0010	.0015
			200A		3	75	.0003	.0010	.0010	.0010	.0020	.0020	.0020	.0030
Stainless Steel - Moderately Difficult 301, 302, 303 High Tensile, 304, 304L, 305, 420, 15-5PH, 17-4PH, 17-7PH	M	up to 28 Rc	200		3	150	.0010	.0020	.0030	.0060	.0080	.0100	.0110	.0120
			200S		3		.0005	.0010	.0015	.0030	.0040	.0050	.0060	.0060
			200A		3	225	.0010	.0020	.0030	.0060	.0080	.0100	.0110	.0120
Stainless Steel - Difficult to Machine 302B, 304B, 309, 310, 316, 316B, 316L, 316Ti, 317, 317L,321, PH13-8Mo, Nitronics	M	up to 28 Rc	200		3	100	.0003	.0005	.0020	.0040	.0050	.0060	.0080	.0100
			200S		3		.0002	.0003	.0010	.0020	.0025	.0030	.0040	.0050
			200A		3	150	.0003	.0005	.0020	.0040	.0050	.0060	.0080	.0100
High Temp Alloys Nimonics, Inconel, Monel, Hastelloy	S	up to 42 Rc	200		3	70	.0003	.0005	.0020	.0040	.0050	.0060	.0080	.0100
			200S		3		.0002	.0003	.0010	.0020	.0025	.0030	.0040	.0050
			200A		3	105	.0003	.0005	.0020	.0040	.0050	.0060	.0080	.0100
Titanium Alloys 6Al-4V, 5Al-2.5 Sn, 6Al-2 Sn-4Zr-6Mo, 3Al-8V-6Cr4Mo-4Zr,10V-2Fe-3Al, 13V-11Cr-3Al	S	up to 42 Rc	200		3	180	.0003	.0005	.0020	.0040	.0050	.0060	.0080	.0100
			200S		3		.0002	.0003	.0010	.0020	.0025	.0030	.0040	.0050
			200A		3	270	.0003	.0005	.0020	.0040	.0050	.0060	.0080	.0100
Cas -Iron - Gray CG, ASTM A48, CLASS 20, 25, 30, 35, SAE J431C, GRADES G1800, G3000, G3500, GG 10, 15, 20, 25, 30, 35, 40	K	up to 240 HB	200		3	365	.0010	.0020	.0030	.0060	.0080	.0100	.0110	.0120
			200S		3		.0005	.0010	.0015	.0030	.0040	.0050	.0060	.0060
			200A		3	550	.0010	.0020	.0030	.0060	.0080	.0100	.0110	.0120
Cast Iron - Ductile & Malleable CGI 60-40-18, 65-45-12, D4018, D4512, D5506, 32510, 35108,M3210, M4504, M5503, 250, 300, 350, 400, 450	K	over 240 HB	200		3	265	.0010	.0020	.0030	.0060	.0080	.0100	.0110	.0120
			200S		3		.0005	.0010	.0015	.0030	.0040	.0050	.0060	.0060
			200A		3	400	.0010	.0020	.0030	.0060	.0080	.0100	.0110	.0120
Plastics	N		200	●	3	300	.0010	.0020	.0030	.0060	.0080	.0100	.0110	.0120
			200S		3		.0005	.0010	.0015	.0030	.0040	.0050	.0060	.0060
			200A		3		.0010	.0020	.0030	.0060	.0080	.0100	.0110	.0120
Kevlar/Graphite	N		200		3		.0010	.0020	.0030	.0060	.0080	.0100	.0110	.0120
			200S		3		.0005	.0010	.0015	.0030	.0040	.0050	.0060	.0060
			200A		3		.0010	.0020	.0030	.0060	.0080	.0100	.0110	.0120

Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.

M.A. Ford® Phone: 800-553-8024 or 563-391-6220 • email: sales@maford.com • www.maford.com

Twister® GP Hi-Roc®

Recommended Cutting Data 200 / 200S - Metric

Workpiece Material Group	ISO	Hardness	Tool Series	TYPE	DEPTH	vc - m/min	Drill Diameter (mm)								
							1	1.5	3	6	8	10	12	16	20
							f - mm/Rev								
Free Machining & Low Carbon Steels 1006, 1008, 1015, 1018, 1020, 1022, 1025, 1117, 1140,1141, 11L08, 11L14, 1213, 12L13, 12L14, 1215, 1330	P	up to 28 Rc	200		3	100	.0250	.0510	.0760	.1520	.2030	.2540	.2790	.3000	.3300
			200S		3		.0130	.0250	.0380	.0760	.1020	.1270	.1520	.1520	.1600
			200A		3	150	.0250	.0510	.0760	.1520	.2030	.2540	.2790	.3000	.3300
Medium Carbon & High Carbon Steels, Alloy Steels & Easy to Machine Tool Steels 1030, 1035, 1040, 1045, 1050, 1052, 1055, 1060, 1085, 1095, 1541, 1551, 9255, 2515, 3135, 3415, 4130, 4137, 4140, 4150, 4320, 4340, 4520, 5015, 5115, 5120, 5132, 5140, 5155, 6150, 8620, 9262, 9840, 52100, O1, O2, O6, S2,W1 to W310	P	28 to 38 Rc	200		3	80	.0250	.0510	.0760	.1520	.2030	.2540	.2790	.3000	.3300
			200S		3		.0130	.0250	.0380	.0760	.1020	.1270	.1520	.1520	.1600
			200A		3	120	.0250	.0510	.0760	.1520	.2030	.2540	.2790	.3000	.3300
Tool Steels & Die Steels O7, M1, M2, M3, M4, M7, T1, T2, T4, T5, T8, T15, A2, A3, A6, A7, H10, H11, H12, H13, H19, H21, L3, L6, L7, P2, P20, S1, S5, S7, 52100, A 128, D2, D3, D4, D5, D7	P	28 to 44 Rc	200		3	45	.0250	.0510	.0760	.1520	.2030	.2540	.2790	.3000	.3300
			200S		3		.0130	.0250	.0380	.0760	.1020	.1270	.1520	.1520	.1600
			200A		3	67	.0250	.0510	.0760	.1520	.2030	.2540	.2790	.3000	.3300
Hardened Steel	H	45 to 65 Rc	200		3	15	.0063	.0254	.0254	.0254	.0508	.0508	.0508	.0762	.0800
			200S		3		.0038	.0127	.0127	.0127	.0254	.0254	.0254	.0381	.0400
			200A		3	23	.0063	.0254	.0254	.0254	.0508	.0508	.0508	.0760	.0800
Stainless Steel - Moderately Difficult 301, 302, 303 High Tensile, 304, 304L, 305, 420, 15-5PH, 17-4PH, 17-7PH	M	up to 28 Rc	200		3	45	.0250	.0510	.0760	.1520	.2030	.2540	.2790	.3000	.3300
			200S		3		.0130	.0250	.0380	.0760	.1020	.1270	.1520	.1520	.1600
			200A		3	67	.0250	.0510	.0760	.1520	.2030	.2540	.2790	.3000	.3300
Stainless Steel - Difficult to Machine 302B, 304B, 309, 310, 316, 316B, 316L, 316Ti, 317, 317L,321, PH13-8Mo, Nitronics	M	up to 28 Rc	200		3	30	.0060	.0130	.0510	.1020	.1270	.1520	.2030	.2500	.2700
			200S		3		.0040	.0060	.0250	.0510	.0640	.0760	.1020	.1270	.1400
			200A		3	45	.0060	.0130	.0510	.1020	.1270	.1520	.2030	.2500	.2700
High Temp Alloys Nimonics, Inconel, Monel, Hastelloy	S	up to 42 Rc	200		3	20	.0060	.0130	.0510	.1020	.1270	.1520	.2030	.2500	.2700
			200S		3		.0040	.0060	.0250	.0510	.0640	.0760	.1020	.1270	.1400
			200A		3	30	.0060	.0130	.0510	.1020	.1270	.1520	.2030	.2500	.2700
Titanium Alloys 6Al-4V, 5Al-2.5 Sn, 6Al-2 Sn-4Zr-6Mo, 3Al-8V-6Cr4Mo-4Zr,10V-2Fe-3Al, 13V-11Cr-3Al	S	up to 42 Rc	200		3	55	.0060	.0130	.0510	.1020	.1270	.1520	.2030	.2500	.2700
			200S		3		.0040	.0060	.0250	.0510	.0640	.0760	.1020	.1270	.1400
			200A		3	82	.0060	.0130	.0510	.1020	.1270	.1520	.2030	.2500	.2700
Cast Iron - Gray CG, ASTM A48, CLASS 20, 25, 30, 35, SAE J431C, GRADES G1800, G3000, G3500, GG 10, 15, 20, 25, 30, 35, 40	K	up to 240 HB	200		3	110	.0250	.0510	.0760	.1520	.2030	.2540	.2790	.3000	.3300
			200S		3		.0130	.0250	.0380	.0760	.1020	.1270	.1520	.1520	.1600
			200A		3	165	.0250	.0510	.0760	.1520	.2030	.2540	.2790	.3000	.3300
Cast Iron - Ductile & Malleable CGI 60-40-18, 65-45-12, D4018, D4512, D5506, 32510, 35108,M3210, M4504, M5503, 250, 300, 350, 400, 450	K	over 240 HB	200		3	80	.0250	.0510	.0760	.1520	.2030	.2540	.2790	.3000	.3300
			200S		3		.0130	.0250	.0380	.0760	.1020	.1270	.1520	.1520	.1600
			200A		3	120	.0250	.0510	.0760	.1520	.2030	.2540	.2790	.3000	.3300
Plastics	N		200		3	90	.0250	.0510	.0760	.1520	.2030	.2540	.2790	.3000	.3300
			200S		3		.0130	.0250	.0380	.0760	.1020	.1270	.1520	.1520	.1600
			200A		3		.0250	.0510	.0760	.1520	.2030	.2540	.2790	.3000	.3300
Kevlar/Graphite	N		200		3	90	.0250	.0510	.0760	.1520	.2030	.2540	.2790	.3000	.3300
			200S		3		.0130	.0250	.0380	.0760	.1020	.1270	.1520	.1520	.1600
			200A		3		.0250	.0510	.0760	.1520	.2030	.2540	.2790	.3000	.3300

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For product information, call your local distributor.