

## Recommended Cutting Data 402 / 403 / 404 / 405 - Inch

Workpiece Material Group	ISO	Hardness	Tool Series	TYPE	vc - SFM	Drill Diameter					
						1/32	1/16	1/8	1/4	3/8	1/2
						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	402	●	175	.0005	.0010	.0015	.0030	.0040	.0050
			403								
			404								
			405								
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	402	●	165	.0005	.0010	.0015	.0030	.0040	.0050
			403								
			404								
			405								
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	402	●	150	.0005	.0010	.0015	.0030	.0040	.0050
			403								
			404								
			405								
Hardened Steels A2 / 52100	H	35 to 45 Rc	402	●	50	.0005	.0010	.0015	.0030	.0040	.0050
			403								
			404/405								
Stainless Steel - Austenitic 304 / 316	M	up to 28 Rc	402	●	125	.0005	.0010	.0015	.0030	.0040	.0050
			403								
			404								
			405								
Stainless Steel - Moderately Difficult 301, 302, 303 High Tensile, 304, 304L, 305, 420, 15-5PH, 17-4PH, 17-7PH	M	over 28 Rc	402	●	60	.0005	.0010	.0015	.0030	.0040	.0050
			403								
			404								
			405								
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	402	●	275	.0005	.0010	.0015	.0030	.0040	.0050
			403								
			404								
			405								
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	402	●	175	.0005	.0010	.0015	.0030	.0040	.0050
			403								
			404								
			405								
Titanium 6Al-4V	S	up to 42 Rc	402	●	80	.0005	.0010	.0015	.0030	.0040	.0050
			403								
			404								
			405								
High Temp Alloys Inconel / Hastelloy / Waspeloy / Nickel Based Alloys-Monel	S	up to 42 Rc	402	●	40	.0005	.0010	.0015	.0030	.0040	.0050
			403								
			404								
			405								

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

## Recommended Cutting Data 402 / 403 / 404 / 405 - Metric

Workpiece Material Group	I S O	Hardness	Tool Series	T Y P E	vc - m/min	Drill Diameter (mm)					
						1	2	3	6	10	12
						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	402	●	55	.013	.025	.038	.076	.102	.127
			403								
			404								
			405								
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	402	●	50	.013	.025	.038	.076	.102	.127
			403								
			404								
			405								
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	402	●	45	.013	.025	.038	.076	.102	.127
			403								
			404								
			405								
Hardened Steels A2 / 52100	H	35 to 45 Rc	402	●	15	.013	.025	.038	.076	.102	.127
			403								
			404								
			405								
Stainless Steel - Austenitic 304 / 316	M	up to 28 Rc	402	●	40	.013	.025	.038	.076	.102	.127
			403								
			404								
			405								
Stainless Steel - Moderately Difficult 301, 302, 303 High Tensile, 304, 304L, 305, 420, 15-5PH, 17-4PH, 17-7PH	M	over 28 Rc	402	●	20	.013	.025	.038	.076	.102	.127
			403								
			404								
			405								
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	402	●	85	.013	.025	.038	.076	.102	.127
			403								
			404								
			405								
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	402	●	55	.013	.025	.038	.076	.102	.127
			403								
			404								
			405								
Titanium 6Al-4V	S	up to 42 Rc	402	●	25	.013	.025	.038	.076	.102	.127
			403								
			404								
			405								
High Temp Alloys Inconel / Hastelloy / Waspeloy / Nickel Based Alloys-Monel	S	up to 42 Rc	402	●	10	.013	.025	.038	.076	.102	.127
			403								
			404								
			405								

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

For product information, call your local distributor.