

# Cutting data recommendations for solid carbide drills

Feed and cutting speed

## MEGA-Speed-Drill-Inox | SCD411

MMG*	Workpiece material	Strength/hardness [N/mm <sup>2</sup> ] [HRC]	Cutting speed v <sub>c</sub> [m/min]				Feed f [mm] for drill diameter						
			Internal cooling	External cooling	MQL	Air	3.00	4.50	6.50	9.50	14.00	20.00	
P	P1.1	Structural, free-cutting, case hardened and heat-treated steels, non-alloy	< 700	150	135	135		0.09	0.12	0.15	0.20	0.25	0.30
	P1.2	Structural, free-cutting, case hardened and heat-treated steels, non-alloy	< 1,200	135	115	115		0.11	0.15	0.19	0.25	0.31	0.37
	P2.1	Nitrided, case hardened and heat-treated steels, alloy	< 900	150	130	130		0.10	0.14	0.18	0.23	0.30	0.35
	P2.2	Nitrided, case hardened and heat-treated steels, alloy	< 1,400	105	90	90		0.09	0.12	0.15	0.19	0.24	0.28
	P3.1	Tool, bearing, spring and high-speed steels**	< 800	115	100	100		0.09	0.12	0.16	0.21	0.27	0.32
	P3.2	Tool, bearing, spring and high-speed steels**	< 1,000	90	85	85		0.08	0.10	0.13	0.17	0.22	0.26
	P3.3	Tool, bearing, spring and high-speed steels**	< 1,500	90	70	75		0.07	0.09	0.11	0.14	0.17	0.20
	P4.1	Stainless steels, ferritic and martensitic		70	55	60		0.06	0.08	0.11	0.14	0.18	0.21
	P5.1	Cast steel		150	130	130		0.10	0.14	0.18	0.23	0.30	0.35
	P6.1	Stainless cast steel, ferritic and martensitic		70	55	60		0.06	0.08	0.11	0.14	0.18	0.21
M	M1.1	Stainless steels, austenitic	< 700	80	50	50		0.08	0.10	0.13	0.17	0.22	0.26
	M1.2	Stainless steels, ferritic/austenitic (duplex)	< 1,000	75	45	45		0.07	0.09	0.11	0.15	0.19	0.22
	M2.1	Stainless/heat-resistant cast steel, austenitic	< 700	80	50	50		0.08	0.10	0.13	0.17	0.22	0.26
	M3.1	Stainless cast steel, ferritic/austenitic (duplex)	< 1,000	75	45	45		0.07	0.09	0.11	0.15	0.19	0.22
S	S1.1	Titanium, titanium alloys	< 400					0.07	0.10	0.13	0.17	0.21	0.25
	S2.1	Titanium, titanium alloys	< 1,200	35	25			0.06	0.08	0.11	0.14	0.18	0.21
	S2.2	Titanium, titanium alloys	> 1,200	30	20			0.05	0.07	0.09	0.12	0.15	0.18
	S3.1	Nickel, unalloyed and alloyed	< 900	25	20			0.04	0.06	0.07	0.10	0.12	0.14
	S3.2	Nickel, unalloyed and alloyed	> 900	20	10			0.05	0.07	0.09	0.12	0.15	0.18
	S4.1	High-temperature super alloy Ni, Co and Fe-based		20	10			0.04	0.06	0.07	0.10	0.12	0.14
	S5.1	Tungsten and molybdenum alloys		20	10			0.04	0.06	0.07	0.10	0.12	0.14

\* MAPAL machining groups

\*\* If the alloy parts Cr, Mo, Ni, V, W in total > 8% then select the next highest MAPAL machining group.

The specified cutting values are guide values.

The optimum data for the respective machining task should be determined during the test or machining.