

Cutting data recommendations for solid carbide drills

Feed and cutting speed

MEGA-Speed-Drill-Steel | SCD621

MMG*	Workpiece material	Strength/hardness [N/mm ²] [HRC]	Cutting speed v _c [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	170	155	155		0.13	0.17	0.22	0.29	0.36	0.43
	P1.2	Structural, free-cutting, case hardened and heat-treated steels, non-alloy	< 1,200	155	130	130		0.16	0.21	0.28	0.36	0.45	0.54
	P2.1	Nitrided, case hardened and heat-treated steels, alloy	< 900	170	145	145		0.15	0.20	0.26	0.34	0.43	0.51
	P2.2	Nitrided, case hardened and heat-treated steels, alloy	< 1,400	120	100	100		0.13	0.17	0.21	0.27	0.34	0.40
	P3.1	Tool, bearing, spring and high-speed steels**	< 800	130	110	110		0.13	0.18	0.23	0.30	0.39	0.46
	P3.2	Tool, bearing, spring and high-speed steels**	< 1,000	100	95	95		0.12	0.15	0.20	0.25	0.32	0.37
	P3.3	Tool, bearing, spring and high-speed steels**	< 1,500	100	75	85		0.10	0.12	0.16	0.20	0.25	0.29
	P4.1	Stainless steels, ferritic and martensitic		100	75	85		0.09	0.12	0.16	0.20	0.25	0.30
	P5.1	Cast steel		170	145	145		0.15	0.20	0.26	0.34	0.43	0.51
	P6.1	Stainless cast steel, ferritic and martensitic		100	75	85		0.09	0.12	0.16	0.20	0.25	0.30
M	M1.1	Stainless steels, austenitic	< 700	65	40	40		0.07	0.09	0.12	0.15	0.19	0.23
	M1.2	Stainless steels, ferritic/austenitic (duplex)	< 1,000	60	35	35		0.06	0.08	0.10	0.13	0.17	0.20
	M2.1	Stainless/heat-resistant cast steel, austenitic	< 700	65	40	40		0.07	0.09	0.12	0.15	0.19	0.23
	M3.1	Stainless cast steel, ferritic/austenitic (duplex)	< 1,000	60	35	35		0.06	0.08	0.10	0.13	0.17	0.20
K	K1.1	Cast iron with lamellar graphite (grey cast iron), GJL	< 300	150	105	105	105	0.14	0.21	0.28	0.38	0.49	0.59
	K2.1	Cast iron with spheroidal graphite, GJS	< 500	200	125	150	150	0.14	0.20	0.27	0.36	0.46	0.54
	K2.2	Cast iron with spheroidal graphite, GJS	≤ 800	125	95	95		0.13	0.18	0.24	0.31	0.39	0.47
	K2.3	Cast iron with spheroidal graphite, GJS	> 800	75	50	65		0.09	0.12	0.15	0.19	0.24	0.28
	K3.1	Cast iron with spheroidal graphite, GJV; malleable cast iron, GJM	< 500	115	100	100		0.14	0.19	0.25	0.33	0.42	0.50
	K3.2	Cast iron with spheroidal graphite, GJV; malleable cast iron, GJM	> 500	100	90	90		0.12	0.16	0.21	0.27	0.34	0.40

* 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.