

Cutting data recommendations for solid carbide drills

Feed and cutting speed

MEGA-Drill-Inox | SCD120, 121

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	P1.1	Structural, free-cutting, case hardened and heat-treated steels, non-alloy	< 700	100	90	90		0.07	0.09	0.12	0.16	0.20	0.24
		P1.2	Structural, free-cutting, case hardened and heat-treated steels, non-alloy	< 1,200	90	75	75		0.09	0.12	0.15	0.20	0.25	0.30
	P2	P2.1	Nitrided, case hardened and heat-treated steels, alloy	< 900	100	85	85		0.08	0.11	0.14	0.19	0.24	0.28
		P2.2	Nitrided, case hardened and heat-treated steels, alloy	< 1,400	70	60	60		0.07	0.09	0.12	0.15	0.19	0.22
	P3	P3.1	Tool, bearing, spring and high-speed steels**	< 800	75	65	65		0.07	0.10	0.13	0.17	0.21	0.25
		P3.2	Tool, bearing, spring and high-speed steels**	< 1,000	60	55	55		0.06	0.08	0.11	0.14	0.17	0.21
		P3.3	Tool, bearing, spring and high-speed steels**	< 1,500	60	45	50		0.05	0.07	0.09	0.11	0.14	0.16
	P4	P4.1	Stainless steels, ferritic and martensitic		60	45	50		0.05	0.07	0.09	0.11	0.14	0.17
	P5	P5.1	Cast steel		100	85	85		0.08	0.11	0.14	0.19	0.24	0.28
	P6	P6.1	Stainless cast steel, ferritic and martensitic		60	45	50		0.05	0.07	0.09	0.11	0.14	0.17
M	M1	M1.1	Stainless steels, austenitic	< 700	55	35	35		0.06	0.08	0.11	0.14	0.18	0.21
		M1.2	Stainless steels, ferritic/austenitic (duplex)	< 1,000	50	30	30		0.05	0.07	0.09	0.12	0.15	0.18
	M2	M2.1	Stainless/heat-resistant cast steel, austenitic	< 700	55	35	35		0.06	0.08	0.11	0.14	0.18	0.21
	M3	M3.1	Stainless cast steel, ferritic/austenitic (duplex)	< 1,000	50	30	30		0.05	0.07	0.09	0.12	0.15	0.18
K	K1	K1.1	Cast iron with lamellar graphite (grey cast iron), GJL	< 300	120	85	85	85	0.12	0.17	0.24	0.32	0.41	0.49
		K2.1	Cast iron with spheroidal graphite, GJS	< 500	160	100	120	120	0.12	0.17	0.22	0.30	0.38	0.45
		K2.2	Cast iron with spheroidal graphite, GJS	≤ 800	100	75	75		0.11	0.15	0.20	0.26	0.33	0.39
	K3	K2.3	Cast iron with spheroidal graphite, GJS	> 800	60	40	50		0.08	0.10	0.13	0.17	0.22	0.26
		K3.1	Cast iron with spheroidal graphite, GJV; malleable cast iron, GJM	< 500	90	80	80		0.12	0.16	0.21	0.28	0.35	0.42
		K3.2	Cast iron with spheroidal graphite, GJV; malleable cast iron, GJM	> 500	80	70	70		0.10	0.13	0.17	0.22	0.28	0.33
N	N2	N2.1	Copper, non-alloy and low-alloy	< 300	140	100			0.09	0.12	0.15	0.20	0.25	0.30
		N2.2	Copper, alloy	> 300	120	90			0.11	0.15	0.20	0.26	0.33	0.39
	N2.3	Brass, bronze, gunmetal	< 1,200	200	160	160	120	0.12	0.17	0.24	0.32	0.41	0.49	

* 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.