

# Cutting data recommendations for solid carbide drills

Feed and cutting speed

## ECU-Drill-Steel | SCD360, 361

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	1.00	1.82	3.31	6.03	10.99	20.00		
P	P1.1	Structural, free-cutting, case hardened and heat-treated steels, non-alloy	< 700	75	70	70		0.04	0.06	0.08	0.13	0.20	0.27	
	P1.2	Structural, free-cutting, case hardened and heat-treated steels, non-alloy	< 1,200	70	55	55		0.05	0.07	0.11	0.16	0.24	0.33	
	P2.1	Nitrided, case hardened and heat-treated steels, alloy	< 900	75	65	65		0.05	0.07	0.10	0.15	0.23	0.31	
	P2.2	Nitrided, case hardened and heat-treated steels, alloy	< 1,400	55	45	45		0.05	0.06	0.09	0.13	0.18	0.25	
	P3.1	Tool, bearing, spring and high-speed steels**	< 800	55	50	50		0.04	0.06	0.09	0.14	0.21	0.28	
	P3.2	Tool, bearing, spring and high-speed steels**	< 1,000	45	40	40		0.04	0.05	0.08	0.12	0.17	0.23	
	P3.3	Tool, bearing, spring and high-speed steels**	< 1,500	45	35	40		0.04	0.05	0.06	0.09	0.13	0.18	
	P4.1	Stainless steels, ferritic and martensitic		45	35	40		0.03	0.04	0.06	0.09	0.14	0.19	
	P5.1	Cast steel		75	65	65		0.05	0.07	0.10	0.15	0.23	0.31	
	P6.1	Stainless cast steel, ferritic and martensitic		45	35	40		0.03	0.04	0.06	0.09	0.14	0.19	
	K	K1.1	Cast iron with lamellar graphite (grey cast iron), GJL	< 300	80	60	60	60	0.04	0.07	0.12	0.20	0.32	0.44
		K2.1	Cast iron with spheroidal graphite, GJS	< 500	110	70	80	80	0.05	0.07	0.12	0.19	0.30	0.41
K2.2		Cast iron with spheroidal graphite, GJS	≤ 800	70	50	50		0.04	0.07	0.11	0.17	0.26	0.35	
K2.3		Cast iron with spheroidal graphite, GJS	> 800	40	25	35		0.04	0.05	0.08	0.12	0.17	0.23	
K3.1		Cast iron with spheroidal graphite, GJV; malleable cast iron, GJM	< 500	60	55	55		0.05	0.07	0.11	0.18	0.27	0.38	
K3.2		Cast iron with spheroidal graphite, GJV; malleable cast iron, GJM	> 500	55	50	50		0.05	0.07	0.10	0.15	0.22	0.30	

\* 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.