Cutting data recommendations for drill reamer

Feed and cutting speed

Tritan-Drill-Reamer | SCD641

MMG*			Workpiece material	Strength/hardness [N/mm²] [HRC]
P	P1	P1.1	Structural, free-cutting, case hardened and heat-treated steels, non-alloy	< 700
		P1.2	Structural, free-cutting, case hardened and heat-treated steels, non-alloy	< 1,200
	P2	P2.1	Nitrided, case hardened and heat-treated steels, alloy	< 900
		P2.2	Nitrided, case hardened and heat-treated steels, alloy	< 1,400
	P3	P3.1	Tool, bearing, spring and high-speed steels**	< 800
		P3.2	Tool, bearing, spring and high-speed steels**	< 1,000
		P3.3	Tool, bearing, spring and high-speed steels**	< 1,500
	P5	P5.1	Cast steel	
K	K1	K1.1	Cast iron with lamellar graphite (grey cast iron), GJL	< 300
	K2	K2.1	Cast iron with spheroidal graphite, GJS	< 500
		K2.2	Cast iron with spheroidal graphite, GJS	≤ 800
		K2.3	Cast iron with spheroidal graphite, GJS	> 800
	K3	K3.1	Cast iron with spheroidal graphite, GJV; malleable cast iron, GJM	< 500
		K3.2	Cast iron with spheroidal graphite, GJV; malleable cast iron, GJM	> 500

EXAMPLE CALCULATION

Please note that the result may be influenced by additional parameters such as the machine tool or tool clamping.

Formula for calculating the optimum nominal tool diameter:
$(G_{oB} + G_{uB}) / 2$

Example:
- Fitting bore: ø 10 F7
- Maximum bore dimension G_{oB}: 10.028 mm
- Minimum bore dimension G_{uB}: 10.013 mm

➔ (10.028 mm + 10.013 mm) / 2 = 10.021 mm = selection of tool nominal diameter 10.021 mm

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

Cutting speed v_c [m/min]				Feed f [mm] for drill diameter					
Internal cooling	External cooling	MQL	Air	4.00	5.50	7.50	10.50	14.50	20.00
70	**65**	**65**		0.17	0.22	0.27	0.34	0.41	0.47
65	**55**	**55**		0.22	0.27	0.34	0.42	0.51	0.59
70	**60**	**60**		0.20	0.26	0.32	0.40	0.48	0.56
50	**40**	**40**		0.17	0.21	0.26	0.32	0.38	0.44
55	**45**	**45**		0.18	0.23	0.29	0.36	0.43	0.50
40	**40**	**40**		0.15	0.19	0.24	0.30	0.36	0.41
40	**30**	**35**		0.13	0.16	0.19	0.23	0.28	0.32
70	**60**	**60**		0.20	0.26	0.32	0.40	0.48	0.56
100	**70**	**70**	**70**	0.25	0.33	0.42	0.55	0.67	0.79
135	**85**	**100**	**100**	0.24	0.32	0.40	0.51	0.62	0.72
85	**65**	**65**		0.22	0.28	0.35	0.44	0.54	0.62
50	**35**	**45**		0.11	0.13	0.16	0.20	0.24	0.28
75	**70**	**70**		0.23	0.30	0.38	0.47	0.58	0.67
70	**60**	**60**		0.20	0.25	0.31	0.38	0.46	0.53

The specified cutting values are guide values.
The optimum data for the respective machining task should be determined during the test or machining.