

Cutting data for solid carbide drills without internal cooling

= cutting data for wet machining = dry machining is possible, cutting data must be selected from TEC E = emulsion O = oil M = MQL L = dry v _c = cutting speed V _{CR} = v _c rating chart from page B 382 V _{RR} = feed rating chart from page B 384				Drilling depth			3 x D _c								
				Designation			K3164TIN			A3265TFL A3865TFL					
Material group Grouping of main material groups and identification letters Workpiece material				Type			Alpha® 2			Alpha® 2					
				Dimensions			Walter standard			DIN 6537 K					
				Dia. range (mm)			3,30 – 14,50			3,00 – 20,00					
				Cutting tool material			K30F			K30F					
				Coating			TiN			TFL					
Page				B 139			B 61/B 98								
				Brinell hardness HB	Tensile strength R _m N/mm ²	Machining group ¹									
							v _c	V _{RR}				v _c	V _{RR}		
P	Non-alloyed steel	C ≤ 0.25 %	annealed	125	428	P1	95	12	E O M L	100	12	E O M L			
		C > 0.25... ≤ 0.55 %	annealed	190	639	P2	90	12	E O M L	95	12	E O M L			
		C > 0.25... ≤ 0.55 %	tempered	210	708	P3	85	12	E O M L	90	12	E O M L			
		C > 0.55 %	annealed	190	639	P4	90	12	E O M L	95	12	E O M L			
		C > 0.55 %	tempered	300	1013	P5	63	9	E O M L	67	9	E O M L			
	Low alloy steel	machining steel (short-chipping)		annealed	220	745	P6	95	12	E O M L	100	12	E O M L		
				annealed	175	591	P7	90	12	E O M L	95	12	E O M L		
				tempered	300	1013	P8	63	9	E O M L	67	9	E O M L		
				tempered	380	1282	P9	40	6	O E	45	6	O E		
	High-alloyed steel and high-alloyed tool steel			annealed	200	675	P11	56	9	E O	60	9	E O		
				hardened and tempered	300	1013	P12	48	7	E O	53	7	E O		
				hardened and tempered	400	1361	P13	32	4	O E	34	4	O E		
				ferritic/martensitic, annealed	200	675	P14	56	9	E O	60	9	E O		
	Stainless steel			martensitic, tempered	330	1114	P15	40	6	E O	42	6	E O		
				austenitic, quench hardened	200	675	M1								
M	Stainless steel	austenitic, precipitation hardened (PH)		300	1013	M2	42	5	E O	45	5	E O			
		austenitic/ferritic, duplex		230	778	M3									
				200	675	K1	80	16	E O M L	85	16	E O M L			
K	Malleable cast iron	pearlitic		260	867	K2	63	16	E O M L	67	16	E O M L			
				180	602	K3	95	16	E O M L	100	16	E O M L			
	grey cast iron	low tensile strength		245	825	K4	80	16	E O M L	85	16	E O M L			
		high tensile strength/austenitic		155	518	K5	80	16	E O M L	85	16	E O M L			
	Cast iron with spheroidal graphite	ferritic		265	885	K6	63	16	E O M L	67	16	E O M L			
		pearlitic		200	675	K7	71	16	E O M L	75	16	E O M L			
N	Aluminium wrought alloys	cannot be hardened		30	–	N1	250	10	E O						
		hardenable, hardened		100	343	N2	250	10	E O						
	Cast aluminium alloys	≤ 12 % Si, not precipitation hardenable		75	260	N3	200	16	E O	220	16	E O			
		≤ 12 % Si, precipitation hardenable, precipitation hardened		90	314	N4	180	16	E O	200	16	E O			
		> 12 % Si, not precipitation hardenable		130	447	N5	140	12	E O	160	12	E O			
	Magnesium alloys				70	250	N6								
	Copper and copper alloys (bronze/brass)	non-alloyed, electrolytic copper		100	343	N7	180	7	E O M	190	7	E O M			
brass, bronze, red brass		90	314	N8	150	12	E O	160	12	E O					
Cu-alloys, short-chipping		110	382	N9	160	16	E O M L	180	16	E O M L					
high-strength, Ampco		300	1013	N10	63	9	E O M L	67	9	E O M L					
S	Heat-resistant alloys	Fe-based		200	675	S1									
		hardened		280	943	S2									
				250	839	S3									
		Ni or Co base		350	1177	S4									
		cast		320	1076	S5									
	Titanium alloys		pure titanium	200	675	S6	36	5	O E	40	5	O E			
		α and β alloys, hardened	375	1262	S7	30	4	O E	34	4	O E				
		β alloys	410	1396	S8										
Tungsten alloys				300	1013	S9	63	9	E O	67	9	E O			
Molybdenum alloys				300	1013	S10	63	9	E O	67	9	E O			
H	Hardened steel	hardened and tempered		50 HRC	–	H1	24	3	O E	26	3	O E			
		hardened and tempered		55 HRC	–	H2	20	3	O E	22	3	O E			
		hardened and tempered		60 HRC	–	H3									
	Hardened cast iron		hardened and tempered		55 HRC	–	H4	20	3	O E	22	3	O E		
O	Thermoplasts		without abrasive fillers			01	90	16	E O						
	Thermosetting plastics		without abrasive fillers			02									
	Plastic, glass-fibre reinforced		GFRP			03									
	Plastic, carbon fibre reinforced		CFRP			04									
	Plastic, aramide fibre reinforced		AFRP			05									
	Graphite (technical)				80 Shore	06									

¹ The machining groups are assigned from page H 8 onwards.