

Indexable drills

	Material group	Composition / structure / heat treatment		HB	Machining group	ZTD*		ZTD*		
						SPGT05/06		SPGT07/09		
						v _c [m/min]	f [mm]	v _c [m/min]	f [mm]	
A Turning	P Unalloyed steel	approx. 0,15 % C	annealed	125	1	200-300	0,05-0,08	200-300	0,06-0,11	
		approx. 0,45 % C	annealed	190	2	200-300	0,05-0,08	200-300	0,06-0,11	
		approx. 0,45 % C	tempered	250	3	200-300	0,05-0,08	200-300	0,06-0,11	
		approx. 0,75 % C	annealed	270	4	200-300	0,05-0,08	200-300	0,06-0,11	
		approx. 0,75 % C	tempered	300	5	200-300	0,05-0,08	200-300	0,06-0,11	
	P Low-alloyed steel			annealed	180	6	140-220	0,05-0,08	140-220	0,07-0,12
				tempered	275	7	140-220	0,05-0,08	140-220	0,07-0,12
				tempered	300	8	140-220	0,05-0,08	140-220	0,07-0,12
				tempered	350	9	140-220	0,05-0,08	140-220	0,07-0,12
		High-alloyed steel and high-alloyed tool steel		annealed	200	10	120-180	0,05-0,08	120-180	0,07-0,12
	hardened and tempered		325	11	120-180	0,05-0,08	120-180	0,07-0,12		
B Milling	M Stainless steel	ferritic/martensitic	annealed	200	12	110-230	0,05-0,08	110-230	0,06-0,11	
		martensitic	tempered	240	13	110-230	0,05-0,08	110-230	0,06-0,11	
		austenitic	quench hardened	180	14	110-230	0,05-0,08	110-230	0,06-0,11	
		austenitic-ferritic		230	15	110-230	0,05-0,08	110-230	0,06-0,11	
		Grey cast iron	perlitic/ferritic		180	16	170-240	0,05-0,08	170-240	0,08-0,14
C Drilling	K Cast iron with spheroidal graphite	perlitic (martensitic)		260	17	170-240	0,05-0,08	170-240	0,08-0,14	
		ferritic		160	18	130-200	0,05-0,08	130-200	0,08-0,14	
	Malleable cast iron	perlitic		250	19	130-200	0,05-0,08	130-200	0,08-0,14	
		ferritic		130	20	120-220	0,05-0,08	120-220	0,08-0,14	
		perlitic		230	21	120-220	0,05-0,08	120-220	0,08-0,14	
N Drilling	Aluminium wrought alloys	cannot be hardened		60	22					
		hardenable	hardened	100	23					
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24					
		≤ 12 % Si, hardenable	hardened	90	25					
		> 12 % Si, cannot be hardened		130	26					
	Copper and copper alloys (bronze/brass)	machining steel, PB > 1%		110	27					
		CuZn, CuSnZn		90	28					
CuSn, Pb-free copper, electrolytic copper		100	29							
D Technical Information	S Heat-resistant alloys	Fe-based alloys	annealed	200	30					
			hardened	280	31					
		Ni or Co bass	annealed	250	32					
			hardened	350	33					
			cast	320	34					
	Titanium alloys	pure titanium	R _m 400	35						
H Hardened steel	Hardened steel		hardened and tempered	55 HRC	37					
			hardened and tempered	60 HRC	38					
	Hard cast iron		cast	400	39					
	Hardened cast iron		hardened and tempered	55 HRC	40					
E Index	X Non-metallic materials	Thermoplasts			41					
		Thermosetting plastics			42					
		Plastic, glass-fibre reinforced GFRP			43					
		Plastic, carbon fibre reinforced CFRP			44					
		Graphite			45					
		Wood			46					

Note: The given cutting values are guide values, which were determined under ideal conditions.
 The values have to be adapted in individual cases.
 With hole depths of 5xD adjust the cutting data accordingly to the application.
 For examples of material for cutting tool groups view page D22.

	ZTD*		ZD03		ZD03		
	SPGT11/14		WCMX03-05		WCMX06-08		
	v _c [m/min]	f [mm]	v _c [m/min]	f [mm]	v _c [m/min]	f [mm]	
	200-300	0,08-0,14	200-300	0,05-0,08	200-300	0,06-0,11	
	200-300	0,08-0,14	200-300	0,05-0,08	200-300	0,06-0,11	
	200-300	0,08-0,14	200-300	0,05-0,08	200-300	0,06-0,11	
	200-300	0,08-0,14	200-300	0,05-0,08	200-300	0,06-0,11	
	200-300	0,08-0,14	200-300	0,05-0,08	200-300	0,06-0,11	
	140-220	0,09-0,16	140-220	0,05-0,08	140-220	0,07-0,12	
	140-220	0,09-0,16	140-220	0,05-0,08	140-220	0,07-0,12	
	140-220	0,09-0,16	140-220	0,05-0,08	140-220	0,07-0,12	
	140-220	0,09-0,16	140-220	0,05-0,08	140-220	0,07-0,12	
	120-180	0,09-0,16	120-180	0,05-0,08	120-180	0,07-0,12	
	120-180	0,09-0,16	120-180	0,05-0,08	120-180	0,07-0,12	
	110-230	0,08-0,14	110-230	0,05-0,08	110-230	0,06-0,11	
	110-230	0,08-0,14	110-230	0,05-0,08	110-230	0,06-0,11	
	110-230	0,08-0,14	110-230	0,05-0,08	110-230	0,06-0,11	
	110-230	0,08-0,14	110-230	0,05-0,08	110-230	0,06-0,11	
	170-240	0,12-0,21	170-240	0,05-0,08	170-240	0,08-0,14	
	170-240	0,12-0,21	170-240	0,05-0,08	170-240	0,08-0,14	
	130-200	0,12-0,21	130-200	0,05-0,08	130-200	0,08-0,14	
	130-200	0,12-0,21	130-200	0,05-0,08	130-200	0,08-0,14	
	120-220	0,12-0,21	120-220	0,05-0,08	120-220	0,08-0,14	
	120-220	0,12-0,21	120-220	0,05-0,08	120-220	0,08-0,14	

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