

Recommended Machining Conditions for SCD-SXC40 & SCD-SXC50 Solid Carbide Drills

ISO	Material	Condition	Tensile Strength [N/mm ²]	Hardness HB	Material No.	Cutting Speed V _c (m/min)	Cutting Diameter Feed (mm/rev)					
							3.0-4.0	4.1-5.0	5.1-6.0	6.1-7.0	7.1-8.0	
P	Non-alloy steel and cast steel, free cutting steel	<0.25% C	Annealed	420	125	1	55-65	0.06-0.12	0.06-0.14	0.08-0.16	0.10-0.18	0.12-0.2
		≥0.25% C	Annealed	650	190	2						
		<0.55% C	Quenched and tempered	850	250	3						
		≥0.55% C	Annealed	750	220	4						
			Quenched and tempered	1000	300	5						
	Low alloy steel and cast steel (less than 5% of alloying elements)	Annealed	600	200	6	45-65	0.06-0.10	0.06-0.12	0.08-0.14	0.10-0.16	0.12-0.18	
		Quenched and tempered	930	275	7							
			1000	300	8							
			1200	350	9							
	High alloyed steel, cast steel, and tool steel	Annealed	680	200	10	35-55	0.04-0.08	0.06-0.10	0.06-0.12	0.08-0.14	0.10-0.16	
		Quenched and tempered	1100	325	11							
Stainless steel and cast steel	Ferritic/martensitic	680	200	12	30-45	0.04-0.08	0.06-0.10	0.06-0.12	0.08-0.14	0.10-0.16		
	Martensitic	820	240	13								
M	Stainless steel and cast steel	Austenitic, duplex	600	180	14	25-45	0.04-0.08	0.06-0.10	0.06-0.12	0.08-0.14	0.10-0.16	
K	Grey cast iron (GG)	Ferritic / pearlitic		180	15	60-70	0.10-0.18	0.12-0.20	0.14-0.22	0.14-0.24	0.16-0.26	
		Pearlitic / martensitic		260	16							
	Cast iron nodular (GGG)	Ferritic		160	17	55-65						
		Pearlitic		250	18							
	Malleable cast iron	Ferritic		130	19	50-60						
		Pearlitic		230	20							
S	High temperature alloys	Fe based	Annealed		200	31	30-35	0.04-0.08	0.06-0.10	0.06-0.12	0.08-0.14	0.10-.0.16
			Hardened		280	32						
		Ni or Co based	Annealed		250	33	25-30					
			Hardened		350	34						
	Titanium alloys	Cast		320	35	30-35						
		Pure	400	190	36							
		Alpha+beta alloys, hardened	1050	310	37							