




MORSE TAPER SHANK DRILLS

D1209 SERIES

HSS, MORSE TAPER SHANK TWIST DRILLS

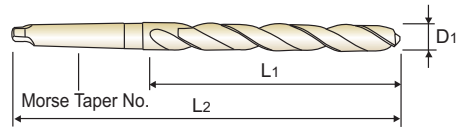
EXTRA LONG

-  HSS, SPIRALBOHRER mit MORSEKEGELSCHAFT
-  Forets HSS, queue cône morse, série extra-longue
-  PUNTE ELICOIDALI IN HSS, ATTACCO CM

ÜBERLANG
EXTRA-LONGUE
EXTRA LUNGA

► **Surface treatment** : Steam Tempered(Black Oxide Finish)
► **Application** : Drilling deep holes in steels, cast steels alloyed and non-alloyed, grey cast iron, malleable cast iron, graphite.

► **Oberflächenbehandlung** : Steam Homo(Schwarzoxidation)
► **Verwendung** : Für Bohrungen mit Bohrbuchsen oder an tief liegenden Stellen.
Zum Bohren von Stahl und Stahlguß, Grauß, Temperguß, Sphäroguß, Sintereisen, Neusilber und Graphit











Unit : mm

EDP No.	Drill Diameter	Flute Length	Overall Length	Morse Taper No.
	D1	L1	L2	
D1209130	13.0	205	310	1
D1209135	13.5	220	325	1
D1209140	14.0	220	325	1
D1209145	14.5	220	340	2
D1209150	15.0	220	340	2
D1209155	15.5	230	355	2
D1209160	16.0	230	355	2
D1209165	16.5	230	355	2
D1209170	17.0	230	355	2
D1209175	17.5	245	370	2
D1209180	18.0	245	370	2
D1209185	18.5	245	370	2
D1209190	19.0	245	370	2
D1209195	19.5	260	385	2
D1209200	20.0	260	385	2
D1209205	20.5	260	385	2
D1209210	21.0	260	385	2
D1209215	21.5	270	405	2
D1209220	22.0	270	405	2
D1209225	22.5	270	405	2
D1209230	23.0	270	405	2
D1209235	23.5	270	425	3
D1209240	24.0	290	440	3
D1209245	24.5	290	440	3
D1209250	25.0	290	440	3
D1209255	25.5	290	440	3
D1209260	26.0	290	440	3
D1209265	26.5	290	440	3

EDP No.	Drill Diameter	Flute Length	Overall Length	Morse Taper No.
	D1	L1	L2	
D1209270	27.0	305	460	3
D1209275	27.5	305	460	3
D1209280	28.0	305	460	3
D1209285	28.5	305	460	3
D1209290	29.0	305	460	3
D1209295	29.5	305	460	3
D1209300	30.0	305	460	3
D1209305	30.5	320	480	3
D1209310	31.0	320	480	3
D1209320	32.0	320	505	4
D1209330	33.0	320	505	4
D1209340	34.0	340	530	4
D1209350	35.0	340	530	4
D1209360	36.0	340	530	4
D1209370	37.0	340	530	4
D1209380	38.0	360	555	4
D1209390	39.0	360	555	4
D1209400	40.0	360	555	4
D1209410	41.0	360	555	4
D1209420	42.0	360	555	4
D1209430	43.0	385	585	4
D1209440	44.0	385	585	4
D1209450	45.0	385	585	4
D1209460	46.0	385	585	4
D1209470	47.0	385	585	4
D1209480	48.0	405	605	4
D1209490	49.0	405	605	4
D1209500	50.0	405	605	4

◎ : Excellent ○ : Good

ISO	P										M				K					
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎	○	◎	◎	○	○	○	○	○	◎	○	○	○	○	○	○	○	○

ISO	N										S						H				
	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys						Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
HB											15	30	25	38	34			55	60	42	55
Recommended	○	○	○						○							○					

MORSE TAPER SHANK DRILLS

RECOMMENDED CUTTING CONDITIONS EMPFOHLENE SCHNEIDKONDITIONEN

DL205, D1205, D1206, D1209, D1210 SERIES

HSS&HSS-E, MORSE TAPER SHANK DRILLS

RPM = rev./min.
FEED = mm/rev.

ISO	VDI 3323	Material Description	Vc (m/min)	Parameter	Drill Diameter (mm)																															
					13.0	16.0	18.0	20.0	30.0	40.0	50.0	60.0																								
P	1	Non-alloy steel	30	RPM	730	600	530	480	320	240	190	160																								
				FEED	0.11~0.17	0.12~0.18	0.14~0.20	0.19~0.25	0.22~0.28	0.24~0.30	0.28~0.34	0.36~0.40																								
			2	25	RPM	610	500	440	400	270	200	160	130																							
					FEED	0.11~0.17	0.12~0.18	0.14~0.20	0.19~0.25	0.22~0.28	0.24~0.30	0.28~0.34	0.36~0.40																							
			3	20	RPM	490	400	350	320	210	160	130	110																							
	FEED	0.11~0.17			0.12~0.18	0.14~0.20	0.19~0.25	0.22~0.28	0.24~0.30	0.28~0.34	0.36~0.40																									
	4	15	RPM	370	300	270	240	160	120	100	80																									
			FEED	0.04~0.10	0.06~0.12	0.08~0.14	0.10~0.16	0.12~0.18	0.14~0.20	0.16~0.22	0.18~0.24																									
	6	Low alloy steel	25	RPM	610	500	440	400	270	200	160	130																								
				FEED	0.11~0.17	0.12~0.18	0.14~0.20	0.19~0.25	0.22~0.28	0.24~0.30	0.28~0.34	0.36~0.40																								
			20	RPM	490	400	350	320	210	160	130	110																								
FEED				0.11~0.17	0.12~0.18	0.14~0.20	0.19~0.25	0.22~0.28	0.24~0.30	0.28~0.34	0.36~0.40																									
15			RPM	370	300	270	240	160	120	100	80																									
	FEED	0.04~0.10	0.06~0.12	0.08~0.14	0.10~0.16	0.12~0.18	0.14~0.20	0.16~0.22	0.18~0.24																											
10	High alloyed steel, and tool steel	15	RPM	370	300	270	240	160	120	100	80																									
			FEED	0.11~0.17	0.12~0.18	0.14~0.20	0.19~0.25	0.22~0.28	0.24~0.30	0.28~0.34	0.36~0.40																									
M	12	Stainless steel	20	RPM	490	400	350	320	210	160	130	110																								
				FEED	0.11~0.17	0.12~0.18	0.14~0.20	0.19~0.25	0.22~0.28	0.24~0.30	0.28~0.34	0.36~0.40																								
			15	RPM	370	300	270	240	160	120	100	80																								
FEED	0.11~0.17	0.12~0.18		0.14~0.20	0.19~0.25	0.22~0.28	0.24~0.30	0.28~0.34	0.36~0.40																											
K	15	Grey cast iron	30	RPM	730	600	530	480	320	240	190	160																								
				FEED	0.11~0.17	0.12~0.18	0.14~0.20	0.19~0.25	0.22~0.28	0.24~0.30	0.28~0.34	0.36~0.40																								
	16	25	RPM	610	500	440	400	270	200	160	130																									
			FEED	0.04~0.10	0.06~0.12	0.08~0.14	0.10~0.16	0.12~0.18	0.14~0.20	0.16~0.22	0.18~0.24																									
	17	Nodular cast iron	30	RPM	730	600	530	480	320	240	190	160																								
				FEED	0.11~0.17	0.12~0.18	0.14~0.20	0.19~0.25	0.22~0.28	0.24~0.30	0.28~0.34	0.36~0.40																								
18	20	RPM	490	400	350	320	210	160	130	110																										
		FEED	0.04~0.10	0.06~0.12	0.08~0.14	0.10~0.16	0.12~0.18	0.14~0.20	0.16~0.22	0.18~0.24																										
19	Malleable cast iron	25	RPM	610	500	440	400	270	200	160	130																									
			FEED	0.11~0.17	0.12~0.18	0.14~0.20	0.19~0.25	0.22~0.28	0.24~0.30	0.28~0.34	0.36~0.40																									
20	20	RPM	490	400	350	320	210	160	130	110																										
		FEED	0.04~0.10	0.06~0.12	0.08~0.14	0.10~0.16	0.12~0.18	0.14~0.20	0.16~0.22	0.18~0.24																										
N	21	Aluminum-wrought alloy	55	RPM	1350	1090	970	880	580	440	350	290																								
				FEED	0.16~0.22	0.18~0.24	0.20~0.28	0.20~0.30	0.28~0.38	0.32~0.42	0.36~0.46	0.40~0.50																								
	22	55	RPM	1350	1090	970	880	580	440	350	290																									
			FEED	0.16~0.22	0.18~0.24	0.20~0.28	0.20~0.30	0.28~0.38	0.32~0.42	0.36~0.46	0.40~0.50																									
	23	Aluminum-cast, alloyed	40	RPM	980	800	710	640	420	320	250	210																								
				FEED	0.16~0.22	0.18~0.24	0.20~0.28	0.20~0.30	0.28~0.38	0.32~0.42	0.36~0.46	0.40~0.50																								
	24																																			
	25																																			
												26	Copper and Copper Alloys (Bronze / Brass)																							
27																																				
										28																										
29	Non Metallic Materials	20	RPM	490	400	350	320	210	160											130	110															
			FEED	0.11~0.17	0.12~0.18	0.14~0.20	0.19~0.25	0.22~0.28	0.24~0.30	0.28~0.34	0.36~0.40																									
S	31	Heat Resistant Super Alloys																																		
												32																								
																					33															
																													34							
	36	Titanium Alloys	10	RPM	240	200	180	160	110	80	60																									
				FEED	0.06~0.10	0.05~0.11	0.06~0.12	0.09~0.13	0.12~0.18	0.14~0.20	0.16~0.22	0.18~0.24																								
37																																				
											38	Hardened steel																								
																					39	Chilled Cast Iron														
40	Hardened Cast Iron																																			
							41																													

SELECTION GUIDE



SERIES

	DL205	D1205	D1206
STANDARD	DIN345	DIN345	DIN341
LENGTH	JOBBER	JOBBER	LONG
SIZE MIN	D13.0	D5.0	D13.0
SIZE MAX	D30.0	D60.0	D30.0
PAGE	288	289	292
SURFACE TREATMENT	Bright	Steam Tempered	

HSS & HSS-E MORSE TAPER SHANK DRILLS

Morse Taper Shank Drills for Wide Applications



























































Please visit globalyg1.com/mat for material search

◎ : Excellent ○ : Good

Recommended cutting conditions : P.295

ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment	HB	HRc	DL205	D1205	D1206
P	1	Non-alloy steel	About 0.15% C Annealed	125		◎	◎	◎
	2		About 0.45% C Annealed	190	13	◎	◎	◎
	3		About 0.45% C Quenched & Tempered	250	25	◎	◎	◎
	4		About 0.75% C Annealed	270	28	○	○	○
	5		About 0.75% C Quenched & Tempered	300	32			
	6	Low alloy steel	Annealed	180	10	◎	◎	◎
	7		Quenched & Tempered	275	29	○	○	○
	8		Quenched & Tempered	300	32	○	○	○
	9		Quenched & Tempered	350	38			
	10		High alloyed steel, and tool steel	Annealed	200	15	○	○
	11	Quenched & Tempered		325	35			
M	12	Stainless steel	Ferritic / Martensitic Annealed	200	15	◎	◎	◎
	13		Martensitic Quenched & Tempered	240	23	○	○	○
	14		Austenitic	180	10			
K	15	Grey cast iron	Pearlitic / ferritic	180	10	○	○	○
	16		Pearlitic (Martensitic)	260	26	○	○	○
	17	Nodular cast iron	Ferritic	160	3	○	○	○
	18		Pearlitic	250	25	○	○	○
	19		Ferritic	130		○	○	○
20	Malleable cast iron	Pearlitic	230	21	○	○	○	
N	21	Aluminum-wrought alloy	Not Curable	60		○	○	○
	22		Curable Hardened	100		○	○	○
	23	Aluminum-cast, alloyed	≤ 12% Si, Not Curable	75		○	○	○
	24		≤ 12% Si, Curable Hardened	90				
	25		> 12% Si, Not Curable	130				
	26	Copper and Copper Alloys (Bronze / Brass)	Cutting Alloys, PB>1%	110				
	27		CuZn, CuSnZn (Brass)	90				
	28		CuSn, lead-free copper and electrolytic copper	100				
	29	Non Metallic Materials	Duroplastic, Fiber Reinforced Plastic			○	○	○
30	Rubber, Wood, etc.							
S	31	Heat Resistant Super Alloys	Fe Based Annealed	200	15			
	32		Cured	280	30			
	33		Annealed	250	25			
	34		Ni or Co Based Cured	350	38			
	35		Cast	320	34			
	36	Titanium Alloys	Pure Titanium	400 Rm		○	○	○
	37		Alpha + Beta Alloys Hardened	1050 Rm				
H	38	Hardened steel	Hardened	550	55			
	39		Hardened	630	60			
	40	Chilled Cast Iron	Cast	400	42			
	41	Hardened Cast Iron	Hardened	550	55			

D1209	D1210
DIN1870/1	DIN1870/2
EXTRA LONG	EXTRA LONG
D13.0	D13.0
D50.0	D50.0
293	294
Steam Tempered	

		1	P
		2	
		3	
		4	
		5	
		6	
		7	
		8	
		9	
		10	
		11	
		12	M
		13	
		14	
		15	K
		16	
		17	
		18	
		19	
		20	
		21	N
		22	
		23	
		24	
		25	
		26	
		27	
		28	
		29	
		30	
		31	S
		32	
		33	
		34	
		35	
		36	
		37	
		38	H
		39	
		40	
		41	