



Leading Through Innovation



**HSS & HSS-E**

# MORSE TAPER SHANK DRILLS

**BOHRER MIT MK**

- Morse Taper Shank Drills for Wide Applications
- Bohrer mit Morsekegel für breite Anwendungen

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](http://globalyg1.com/mat) for material search

◎ : Excellent ○ : Good

Recommended cutting conditions : P.295

ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment	HB	HRc				
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	Low alloy steel	About 0.75% C Quenched & Tempered	300	32	○	○	○	
	6		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	Non Metallic Materials	CuZn, CuSnZn (Brass)	90					
	28		CuSn, lead-free copper and electrolytic copper	100					
	29		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
<b>293</b>	<b>294</b>
Steam Tempered	



⊙	⊙	1	P
⊙	⊙	2	
⊙	⊙	3	
○	○	4	
		5	
⊙	⊙	6	
○	○	7	
○	○	8	
		9	
○	○	10	
		11	
⊙	⊙	12	M
○	○	13	
		14	
○	○	15	K
○	○	16	
○	○	17	
○	○	18	
○	○	19	
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○	○	21	N
○	○	22	
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○	○	35	
		36	
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		38	H
		39	
		40	
		41	

i-ONE DRILLS

i-DREAM DRILLS

DREAM DRILLS -GENERAL

DREAM DRILLS -HIGH FEED

DREAM DRILLS -FLAT BOTTOM

DREAM DRILLS -INOX

DREAM DRILLS -ALU

DREAM DRILLS -CFRP

DREAM DRILLS -MQL

DREAM DRILLS for HIGH HARDENED STEELS

GENERAL CARBIDE DRILLS

MULTI-1 DRILLS

HPD DRILLS

GOLD-P DRILLS

SUPER-GP DRILLS

STRAIGHT SHANK DRILLS

TAPER SHANK DRILLS

NC-SPOTTING DRILLS

CENTER DRILLS

SPADE DRILLS

REAMERS

COUNTER SINKS

COUNTER BORES

TECHNICAL DATA



# MORSE TAPER SHANK DRILLS

DL205 SERIES

## HSS-E, MORSE TAPER SHANK TWIST DRILLS for HEAVY DUTY

JOBBER

- 🇩🇪 HSS-E, SPIRALBOHRER für HOHELEISTUNGEN mit MORSEKEGELSCHAFT
- 🇫🇷 Forets HSS-E, queue cône morse pour matériaux durs, série courte
- 🇮🇹 HSS-E, PUNTE ELICOIDALI, ATTACCO CM PER LAVORAZIONI GRAVOSE

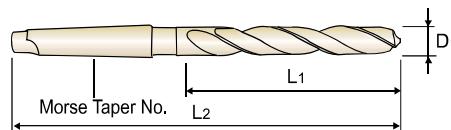
KURZ

COURTE

CORTA

▶ **Application** : Drilling steels, cast steels alloyed and non-alloyed, grey cast iron, malleable cast iron, graphite.

▶ **Verwendung** : Zum Bohren von Stahl und Stahlguß, Grauguß, Temperguß, Sphäroguß, Sintereisen, Graphit.



DIN 345
HSS-E
N 30°
1~3
h8
118°

P.295

Unit : mm

EDP No.	Drill Diameter D1	Flute Length L1	Overall Length L2	Morse Taper No.
DL205130	13.0	101	182	1
DL205135	13.5	108	189	1
DL205140	14.0	108	189	1
DL205145	14.5	114	212	2
DL205150	15.0	114	212	2
DL205155	15.5	120	218	2
DL205160	16.0	120	218	2
DL205165	16.5	125	223	2
DL205170	17.0	125	223	2
DL205175	17.5	130	228	2
DL205180	18.0	130	228	2
DL205185	18.5	135	233	2
DL205190	19.0	135	233	2
DL205195	19.5	140	238	2
DL205200	20.0	140	238	2
DL205205	20.5	145	243	2
DL205210	21.0	145	243	2
DL205215	21.5	150	248	2

EDP No.	Drill Diameter D1	Flute Length L1	Overall Length L2	Morse Taper No.
DL205220	22.0	150	248	2
DL205225	22.5	155	253	2
DL205230	23.0	155	253	2
DL205235	23.5	155	276	3
DL205240	24.0	160	281	3
DL205245	24.5	160	281	3
DL205250	25.0	160	281	3
DL205255	25.5	165	286	3
DL205260	26.0	165	286	3
DL205265	26.5	165	286	3
DL205270	27.0	170	291	3
DL205275	27.5	170	291	3
DL205280	28.0	170	291	3
DL205285	28.5	175	296	3
DL205290	29.0	175	296	3
DL205295	29.5	175	296	3
DL205300	30.0	175	296	3

◎ : Excellent ○ : Good

ISO Material Description	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	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 Material Description	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											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○	○						○							○					



# MORSE TAPER SHANK DRILLS

## D1205 SERIES

### HSS, MORSE TAPER SHANK TWIST DRILLS

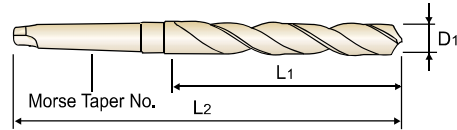
**JOBBER**

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

**KURZ**  
**COURTE**  
**CORTA**

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

- Oberflächenbehandlung** : Steam Homo(Schwarzoxidation)
- Verwendung** : Zum Bohren von Stahl und Stahlguß, Grauguß, Temperguß, Sphäroguß, Sintereisen, Graphit.



**DIN 345** **HSS**

Unit : mm

EDP No.	Drill Diameter D1	Flute Length L1	Overall Length L2	Morse Taper No.
D1205050	5.0	52	133	1
D1205055	5.5	57	138	1
D1205060	6.0	57	138	1
D1205065	6.5	63	144	1
D1205070	7.0	69	150	1
D1205075	7.5	69	150	1
D1205080	8.0	75	156	1
D1205085	8.5	75	156	1
D1205090	9.0	81	162	1
D1205095	9.5	81	162	1
D1205100	10.0	87	168	1
D1205105	10.5	87	168	1
D1205110	11.0	94	175	1
D1205115	11.5	94	175	1
D1205120	12.0	101	182	1
D1205125	12.5	101	182	1
D1205130	13.0	101	182	1
D1205132	13.2	101	182	1
D120513A	13.25	108	189	1
D1205135	13.5	108	189	1
D120513B	13.75	108	189	1
D1205138	13.8	108	189	1
D1205140	14.0	108	189	1
D120514A	14.25	114	212	2
D1205145	14.5	114	212	2
D120514B	14.75	114	212	2

EDP No.	Drill Diameter D1	Flute Length L1	Overall Length L2	Morse Taper No.
D1205150	15.0	114	212	2
D120515A	15.25	120	218	2
D1205155	15.5	120	218	2
D120515B	15.75	120	218	2
D1205160	16.0	120	218	2
D120516A	16.25	125	223	2
D1205165	16.5	125	223	2
D120516B	16.75	125	223	2
D1205170	17.0	125	223	2
D120517A	17.25	130	228	2
D1205175	17.5	130	228	2
D120517B	17.75	130	228	2
D1205180	18.0	130	228	2
D120518A	18.25	135	233	2
D1205185	18.5	135	233	2
D120518B	18.75	135	233	2
D1205190	19.0	135	233	2
D120519A	19.25	140	238	2
D1205195	19.5	140	238	2
D120519B	19.75	140	238	2
D1205200	20.0	140	238	2
D120520A	20.25	145	243	2
D1205205	20.5	145	243	2
D120520B	20.75	145	243	2
D1205210	21.0	145	243	2
D120521A	21.25	150	248	2

▶ NEXT PAGE

ISO	P										M					K						
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel					Stainless steel			Grey cast iron		Nodular cast iron	
Material Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
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	30	29	32	38	35	35	15	23	10	10	26	3	25	3	21			
HB	125	190	250	270	300	180	275	300	350	200	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
Material Description	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
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			15	30	25	38	34	200	280	250	350	320	400 Rm
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○



# MORSE TAPER SHANK DRILLS

D1205 SERIES

## HSS, MORSE TAPER SHANK TWIST DRILLS

JOBBER

● HSS, SPIRALBOHRER mit MORSEKEGELSCHAFT

KURZ

● Forets HSS, queue cône morse, série courte

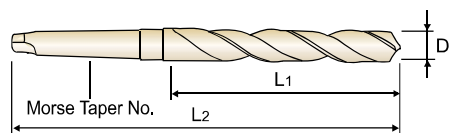
COURTE

● PUNTE ELICOIDALI IN HSS, ATTACCO CM

CORTA

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

▶ **Oberflächenbehandlung** : Steam Homo(Schwarzoxidation)  
 ▶ **Verwendung** : Zum Bohren von Stahl und Stahlguß, Grauguß, Temperguß, Sphäroguß, Sintereisen, Graphit.



P.295

Unit : mm

EDP No.	Drill Diameter D1	Flute Length L1	Overall Length L2	Morse Taper No.	EDP No.	Drill Diameter D1	Flute Length L1	Overall Length L2	Morse Taper No.
D1205215	21.5	150	248	2	D1205280	28.0	170	291	3
D120521B	21.75	150	248	2	D120528A	28.25	175	296	3
D1205220	22.0	150	248	2	D1205285	28.5	175	296	3
D120522A	22.25	150	248	2	D120528B	28.75	175	296	3
D1205225	22.5	155	253	2	D1205290	29.0	175	296	3
D120522B	22.75	155	253	2	D120529A	29.25	175	296	3
D1205230	23.0	155	253	2	D1205295	29.5	175	296	3
D120523A	23.25	155	276	3	D120529B	29.75	175	296	3
D1205235	23.5	155	276	3	D1205300	30.0	175	296	3
D120523B	23.75	160	281	3	D120530A	30.25	180	301	3
D1205240	24.0	160	281	3	D1205305	30.5	180	301	3
D120524A	24.25	160	281	3	D120530B	30.75	180	301	3
D1205245	24.5	160	281	3	D1205310	31.0	180	301	3
D120524B	24.75	160	281	3	D120531A	31.25	180	301	3
D1205250	25.0	160	281	3	D1205315	31.5	180	301	3
D120525A	25.25	165	286	3	D120531B	31.75	185	306	3
D1205255	25.5	165	286	3	D1205320	32.0	185	334	4
D120525B	25.75	165	286	3	D1205325	32.5	185	334	4
D1205260	26.0	165	286	3	D1205330	33.0	185	334	4
D120526A	26.25	165	286	3	D1205335	33.5	185	334	4
D1205265	26.5	165	286	3	D1205340	34.0	190	339	4
D120526B	26.75	170	291	3	D1205345	34.5	190	339	4
D1205270	27.0	170	291	3	D1205350	35.0	190	339	4
D120527A	27.25	170	291	3	D1205355	35.5	190	339	4
D1205275	27.5	170	291	3	D1205360	36.0	195	344	4
D120527B	27.75	170	291	3	D1205365	36.5	195	344	4

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO Material Description	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	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 Material Description	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											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○	○						○							○					



# MORSE TAPER SHANK DRILLS

## D1205 SERIES

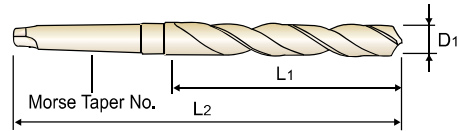
### HSS, MORSE TAPER SHANK TWIST DRILLS

**JOBBER**  
**KURZ**  
**COURTE**  
**CORTA**

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

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

- Oberflächenbehandlung** : Steam Homo(Schwarzoxidation)
- Verwendung** : Zum Bohren von Stahl und Stahlguß, Grauguß, Temperguß, Sphäroguß, Sinterisen, Graphit.



Unit : mm

EDP No.	Drill Diameter D1	Flute Length L1	Overall Length L2	Morse Taper No.
D1205370	37.0	195	344	4
D1205375	37.5	195	344	4
D1205380	38.0	200	349	4
D1205385	38.5	200	349	4
D1205390	39.0	200	349	4
D1205395	39.5	200	349	4
D1205400	40.0	200	349	4
D1205405	40.5	205	354	4
D1205410	41.0	205	354	4
D1205415	41.5	205	354	4
D1205420	42.0	205	354	4
D1205425	42.5	205	354	4
D1205430	43.0	210	359	4
D1205435	43.5	210	359	4
D1205440	44.0	210	359	4
D1205445	44.5	210	359	4
D1205450	45.0	210	359	4
D1205455	45.5	215	364	4
D1205460	46.0	215	364	4

EDP No.	Drill Diameter D1	Flute Length L1	Overall Length L2	Morse Taper No.
D1205465	46.5	215	364	4
D1205470	47.0	215	364	4
D1205475	47.5	215	364	4
D1205480	48.0	220	369	4
D1205485	48.5	220	369	4
D1205490	49.0	220	369	4
D1205495	49.5	220	369	4
D1205500	50.0	220	369	4
D1205505	50.5	225	374	4
D1205510	51.0	225	412	5
D1205520	52.0	225	412	5
D1205530	53.0	225	412	5
D1205540	54.0	230	417	5
D1205550	55.0	230	417	5
D1205560	56.0	230	417	5
D1205570	57.0	235	422	5
D1205580	58.0	235	422	5
D1205590	59.0	235	422	5
D1205600	60.0	235	422	5

◎ : 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	
Material Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRC	13	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	130	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					
Material Description	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
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			15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○	○						○							○					



# MORSE TAPER SHANK DRILLS

D1206 SERIES

## HSS, MORSE TAPER SHANK TWIST DRILLS

LONG

● HSS, SPIRALBOHRER mit MORSEKEGELSCHAFT

LANG

● Forets HSS, queue cône morse, série longue

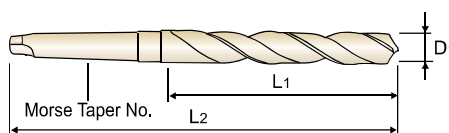
LONGUE

● PUNTE ELICOIDALI IN HSS, ATTACCO CM

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, Sinterisen, Neusilber und Graphit.



DIN 341
HSS
N 30°
1~3
h8
118°
P.295

Unit : mm

EDP No.	Drill Diameter D1	Flute Length L1	Overall Length L2	Morse Taper No.
D1206130	13.0	134	215	1
D1206135	13.5	142	223	1
D1206140	14.0	142	223	1
D1206145	14.5	147	245	2
D1206150	15.0	147	245	2
D1206155	15.5	153	251	2
D1206160	16.0	153	251	2
D1206165	16.5	159	257	2
D1206170	17.0	159	257	2
D1206175	17.5	165	263	2
D1206180	18.0	165	263	2
D1206185	18.5	171	269	2
D1206190	19.0	171	269	2

EDP No.	Drill Diameter D1	Flute Length L1	Overall Length L2	Morse Taper No.
D1206195	19.5	177	275	2
D1206200	20.0	177	275	2
D1206210	21.0	184	282	2
D1206220	22.0	191	289	2
D1206230	23.0	198	296	2
D1206240	24.0	206	327	3
D1206250	25.0	206	327	3
D1206260	26.0	214	335	3
D1206270	27.0	222	343	3
D1206280	28.0	222	343	3
D1206290	29.0	230	351	3
D1206300	30.0	230	351	3

◎ : Excellent ○ : Good

ISO Material Description	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	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 Material Description	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											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○	○						○							○					





# MORSE TAPER SHANK DRILLS

## D1209 SERIES

### HSS, MORSE TAPER SHANK TWIST DRILLS

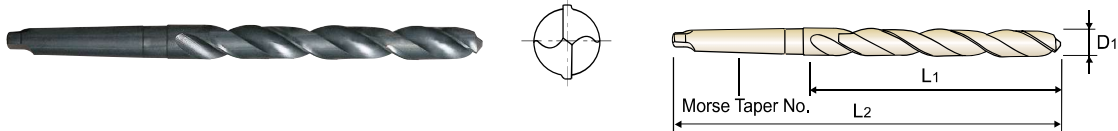
EXTRA LONG

- 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



DIN 1870/1 HSS N 30° 1~4 h8 118° P.295

Unit : mm

EDP No.	Drill Diameter D1	Flute Length L1	Overall Length L2	Morse Taper No.
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 D1	Flute Length L1	Overall Length L2	Morse Taper No.
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 Material Description	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	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 Material Description	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											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○	○						○							○					



# MORSE TAPER SHANK DRILLS

**D1210** SERIES

## HSS, MORSE TAPER SHANK TWIST DRILLS

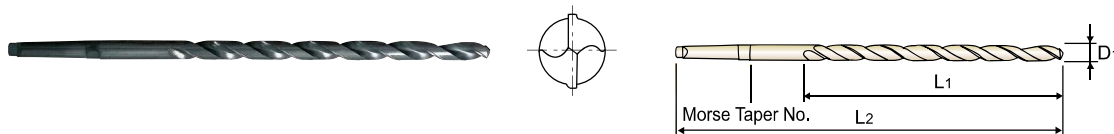
**EXTRA LONG**

- 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** : Designed for drilling deep holes or deeply located holes. Drilling into steels, cast steels alloyed and non-alloyed, grey cast iron, malleable cast iron, Spheriodal graphite cast iron, sintered iron, aluminum and aluminum alloys.

► **Oberflächenbehandlung** : Steam Homo(Schwarzoxidation)  
 ► **Verwendung** : Standardbohrer zum Bohren extrem tiefer Löcher.  
 Zum Bohren von Stahl und Stahlguß, Grauguß, Temperguß, Sphäroguß, Sintereisen und Graphit



Unit : mm

EDP No.	Drill Diameter D1	Flute Length L1	Overall Length L2	Morse Taper No.	EDP No.	Drill Diameter D1	Flute Length L1	Overall Length L2	Morse Taper No.
D1210130	13.0	260	395	1	D1210270	27.0	385	580	3
D1210135	13.5	275	410	1	D1210275	27.5	385	580	3
D1210140	14.0	275	410	1	D1210280	28.0	385	580	3
D1210145	14.5	275	425	2	D1210285	28.5	385	580	3
D1210150	15.0	275	425	2	D1210290	29.0	385	580	3
D1210155	15.5	295	445	2	D1210295	29.5	385	580	3
D1210160	16.0	295	445	2	D1210300	30.0	385	580	3
D1210165	16.5	295	445	2	D1210310	31.0	410	610	3
D1210170	17.0	295	445	2	D1210320	32.0	410	635	4
D1210175	17.5	310	465	2	D1210330	33.0	410	635	4
D1210180	18.0	310	465	2	D1210340	34.0	430	665	4
D1210185	18.5	310	465	2	D1210350	35.0	430	665	4
D1210190	19.0	310	465	2	D1210360	36.0	430	665	4
D1210195	19.5	325	490	2	D1210370	37.0	430	665	4
D1210200	20.0	325	490	2	D1210380	38.0	460	695	4
D1210205	20.5	325	490	2	D1210390	39.0	460	695	4
D1210210	21.0	325	490	2	D1210400	40.0	460	695	4
D1210215	21.5	345	515	2	D1210410	41.0	460	695	4
D1210220	22.0	345	515	2	D1210420	42.0	460	695	4
D1210225	22.5	345	515	2	D1210430	43.0	490	735	4
D1210230	23.0	345	515	2	D1210440	44.0	490	735	4
D1210235	23.5	345	535	3	D1210450	45.0	490	735	4
D1210240	24.0	365	555	3	D1210460	46.0	490	735	4
D1210245	24.5	365	555	3	D1210470	47.0	490	735	4
D1210250	25.0	365	555	3	D1210480	48.0	510	765	4
D1210255	25.5	365	555	3	D1210490	49.0	510	765	4
D1210260	26.0	365	555	3	D1210500	50.0	510	765	4
D1210265	26.5	365	555	3					

◎ : Excellent ○ : Good

ISO Material Description	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	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 Material Description	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											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○	○						○							○					



# MORSE TAPER SHANK DRILLS

## RECOMMENDED CUTTING CONDITIONS EMPFOHLENE SCHNEIDKONDITIONEN

HSS

### 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																									
			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																											
	Low alloy steel	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																										
		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																												
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																									
	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																											
	30	Nodular cast iron	20	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																									
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																												
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	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	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	Copper and Copper Alloys (Bronze / Brass)																																			
	25																																				
												26																									
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	50																									
				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																																					
H	38	Hardened steel																																			
												39																									
	40	Chilled Cast Iron																																			
										41	Hardened Cast Iron																										

i-ONE DRILLS

i-DREAM DRILLS

DREAM DRILLS -GENERAL

DREAM DRILLS -HIGH FEED

DREAM DRILLS -FLAT BOTTOM

DREAM DRILLS -INOX

DREAM DRILLS -ALU

DREAM DRILLS -CFRP

DREAM DRILLS -MQL

DREAM DRILLS for HIGH HARDENED STEELS

GENERAL CARBIDE DRILLS

MULTI-1 DRILLS

HPD DRILLS

GOLD-P DRILLS

SUPER-GP DRILLS

STRAIGHT SHANK DRILLS

TAPER SHANK DRILLS

NC-SPOTTING DRILLS

CENTER DRILLS

SPADE DRILLS

REAMERS

COUNTER SINKS

COUNTER BORES

TECHNICAL DATA



## HEAD OFFICE

211, Sewolcheon-ro, Bupyeong-gu, Incheon, South Korea

**Phone: +82-32-526-0909**

**Http://www.yg1.kr E-mail: yg1@yg1.kr**

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