

HSS



Being the best through innovation



MORSE TAPER SHANK DRILLS







BOHRER MIT MK

- General Purpose, HSS & HSS-E & 8% Cobalt
- Für allgemeinen Einsatz, HSS und HSSE-Co8

SELECTION GUIDE

MORSE TAPER SHANK DRILLS

Morse Taper Shank Twist Drills for wide applications

ITEM	MODEL	DESCRIPTION	SIZE		PAGE	
			MIN	MAX		
DN221		HSS-E, TAPER SHANK TWIST DRILLS HSS-E, SPIRALBOHRER mit MORSEKEGELSCHAFT	<i>SHORT</i> <i>KURZ</i>	D13.0	D32.0	194
DL205		HSS-E, TAPER SHANK TWIST DRILLS for HEAVY DUTY HSS-E, SPIRALBOHRER für HOHE LEISTUNGEN mit MORSEKEGELSCHAFT	<i>JOBBER</i> <i>KURZ</i>	D13.0	D30.0	195
D1205		HSS, TAPER SHANK TWIST DRILLS HSS, SPIRALBOHRER mit MORSEKEGELSCHAFT	<i>JOBBER</i> <i>KURZ</i>	D13.0	D60.0	196
D1206		HSS, TAPER SHANK TWIST DRILLS HSS, SPIRALBOHRER mit MORSEKEGELSCHAFT	<i>LONG</i> <i>LANG</i>	D13.0	D30.0	198
D1209		HSS, TAPER SHANK TWIST DRILLS HSS, SPIRALBOHRER mit MORSEKEGELSCHAFT	<i>EXTRA LONG</i> <i>ÜBERLANG</i>	D13.0	D50.0	199
D1210		HSS, TAPER SHANK TWIST DRILLS HSS, SPIRALBOHRER mit MORSEKEGELSCHAFT	<i>EXTRA LONG</i> <i>ÜBERLANG</i>	D13.0	D50.0	200
RECOMMENDED CUTTING CONDITIONS EMPFOHLENE SCHNEIDKONDITIONEN						201

HSS MORSE TAPER SHANK DRILLS

◎ : Excellent
○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		Cast Iron	Aluminum	Stainless Steels	Titanium	Mild Steels	Copper	Bronze
			HRc45~55	HRc55~							
~HB225	HB225~325	HRc30~45	HRc45~55	HRc55~							
◎	◎				○	○	○		○		
◎	◎	○			○	○	○		○		
◎	◎	○			○	○	○		○		
◎	◎	○			○	○	○		○		
◎	◎	○			○	○	○		○		
◎	◎	○			○	○	○		○		

YG MORSE TAPER SHANK DRILLS

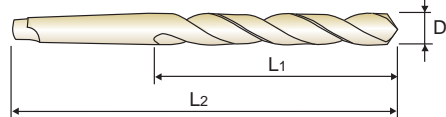
DN221 SERIES

HSS-E, MORSE TAPER SHANK TWIST DRILLS HSS-E, SPIRALBOHRER mit MORSEKEGELSCHAFT

SHORT
KURZ

► **Application** : Short length - designed for high speed drilling in wide range of materials like carbon steels, stainless steels and aluminum.

► **Verwendung** : Der kurze Bohrer ist geeignet fuer Hochgeschwindigkeitsbohrungen, präzises Positionieren. Geignet für Karbon- und rostfreiem Stahl, Alu..



HSS-E
N 20~30°
1~3
h8
135°
P.201

Unit : mm

EDP No.	Drill Diameter	Flute Length	Overall Length	No. of Morse Taper	EDP No.	Drill Diameter	Flute Length	Overall Length	No. of Morse Taper
TiN	D1	L1	L2		TiN	D1	L1	L2	
DN221130	13.0	65.5	146.5	1	DN221230	23.0	99.5	197.5	2
DN221135	13.5	69.5	150.5	1	DN221235	23.5	102.5	223.5	3
DN221140	14.0	69.5	150.5	1	DN221240	24.0	102.5	223.5	3
DN221145	14.5	73	171	2	DN221245	24.5	102.5	223.5	3
DN221150	15.0	73	171	2	DN221250	25.0	102.5	223.5	3
DN221155	15.5	77	175	2	DN221255	25.5	105	226	3
DN221160	16.0	77	175	2	DN221260	26.0	105	226	3
DN221165	16.5	80.5	178.5	2	DN221265	26.5	105	226	3
DN221170	17.0	80.5	178.5	2	DN221270	27.0	108.5	229.5	3
DN221175	17.5	83.5	181.5	2	DN221275	27.5	108.5	229.5	3
DN221180	18.0	83.5	181.5	2	DN221280	28.0	108.5	229.5	3
DN221185	18.5	86.5	184.5	2	DN221285	28.5	111	232	3
DN221190	19.0	86.5	184.5	2	DN221290	29.0	111	232	3
DN221195	19.5	90	188	2	DN221295	29.5	111	232	3
DN221200	20.0	90	188	2	DN221300	30.0	111	232	3
DN221205	20.5	93	191	2	DN221305	30.5	114	235	3
DN221210	21.0	93	191	2	DN221310	31.0	114	235	3
DN221215	21.5	95.5	193.5	2	DN221315	31.5	114	235	3
DN221220	22.0	95.5	193.5	2	DN221320	32.0	114	235	3
DN221225	22.5	99.5	197.5	2					

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		Cast Iron	Aluminum	Stainless Steels	Titanium	Mild Steels	Copper	Bronze
~HB225	HB225~325	HRc30~45	HRc45~55	HRc55~							
◎	◎				○	○	○		○		

◎ : Excellent ○ : Good

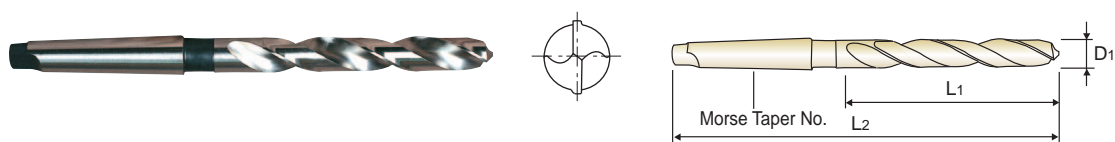
YG MORSE TAPER SHANK DRILLS

DL205 SERIES

HSS-E, MORSE TAPER SHANK TWIST DRILLS for HEAVY DUTY JOBBER HSS-E, SPIRALBOHRER für HOHELEISTUNGEN mit MORSEKEGELSCHAFT KURZ

► **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 20~30°
1~3
h8
118°
P.201

Unit : mm

EDP No.	Drill Diameter	Flute Length L1	Overall Length L2	No. of Morse Taper	EDP No.	Drill Diameter	Flute Length L1	Overall Length L2	No. of Morse Taper
	D1					D1			
DL205130	13.0	101	182	1	DL205220	22.0	150	248	2
DL205135	13.5	108	189	1	DL205225	22.5	155	253	2
DL205140	14.0	108	189	1	DL205230	23.0	155	253	2
DL205145	14.5	114	212	2	DL205235	23.5	155	276	3
DL205150	15.0	114	212	2	DL205240	24.0	160	281	3
DL205155	15.5	120	218	2	DL205245	24.5	160	281	3
DL205160	16.0	120	218	2	DL205250	25.0	160	281	3
DL205165	16.5	125	223	2	DL205255	25.5	165	286	3
DL205170	17.0	125	223	2	DL205260	26.0	165	286	3
DL205175	17.5	130	228	2	DL205265	26.5	165	286	3
DL205180	18.0	130	228	2	DL205270	27.0	170	291	3
DL205185	18.5	135	233	2	DL205275	27.5	170	291	3
DL205190	19.0	135	233	2	DL205280	28.0	170	291	3
DL205195	19.5	140	238	2	DL205285	28.5	175	296	3
DL205200	20.0	140	238	2	DL205290	29.0	175	296	3
DL205205	20.5	145	243	2	DL205295	29.5	175	296	3
DL205210	21.0	145	243	2	DL205300	30.0	175	296	3
DL205215	21.5	150	248	2					

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		Cast Iron	Aluminum	Stainless Steels	Titanium	Mild Steels	Copper	Bronze
-HB225	HB225~325	HRC30~45	HRC45~55	HRC55~							
◎	◎	○			○	○	○		○		

YG MORSE TAPER SHANK DRILLS

D1205 SERIES

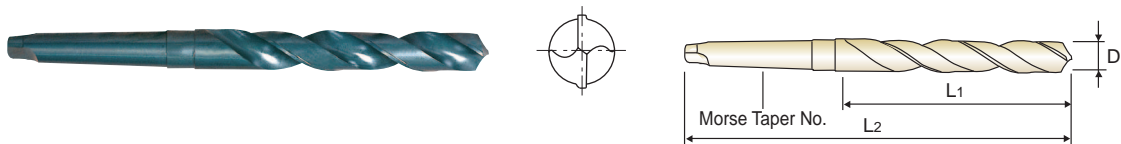
HSS, MORSE TAPER SHANK TWIST DRILLS HSS, SPIRALBOHRER mit MORSEKEGELSCHAFT

JOBBER

KURZ

► **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
N 20~30°
1~5
h8
118°
P.202

Unit : mm

EDP No.	Drill Diameter	Flute Length	Overall Length	No. of Morse Taper	EDP No.	Drill Diameter	Flute Length	Overall Length	No. of Morse Taper
	D1	L1	L2			D1	L1	L2	
D1205130	13.0	101	182	1	D1205205	20.5	145	243	2
D1205132	13.2	101	182	1	D120520B	20.75	145	243	2
D120513A	13.25	108	189	1	D1205210	21.0	145	243	2
D1205135	13.5	108	189	1	D120521A	21.25	150	248	2
D120513B	13.75	108	189	1	D1205215	21.5	150	248	2
D1205138	13.8	108	189	1	D120521B	21.75	150	248	2
D1205140	14.0	108	189	1	D1205220	22.0	150	248	2
D120514A	14.25	114	212	2	D120522A	22.25	150	248	2
D1205145	14.5	114	212	2	D1205225	22.5	155	253	2
D120514B	14.75	114	212	2	D120522B	22.75	155	253	2
D1205150	15.0	114	212	2	D1205230	23.0	155	253	2
D120515A	15.25	120	218	2	D120523A	23.25	155	276	3
D1205155	15.5	120	218	2	D1205235	23.5	155	276	3
D120515B	15.75	120	218	2	D120523B	23.75	160	281	3
D1205160	16.0	120	218	2	D1205240	24.0	160	281	3
D120516A	16.25	125	223	2	D120524A	24.25	160	281	3
D1205165	16.5	125	223	2	D1205245	24.5	160	281	3
D120516B	16.75	125	223	2	D120524B	24.75	160	281	3
D1205170	17.0	125	223	2	D1205250	25.0	160	281	3
D120517A	17.25	130	228	2	D120525A	25.25	165	286	3
D1205175	17.5	130	228	2	D1205255	25.5	165	286	3
D120517B	17.75	130	228	2	D120525B	25.75	165	286	3
D1205180	18.0	130	228	2	D1205260	26.0	165	286	3
D120518A	18.25	135	233	2	D120526A	26.25	165	286	3
D1205185	18.5	135	233	2	D1205265	26.5	165	286	3
D120518B	18.75	135	233	2	D120526B	26.75	170	291	3
D1205190	19.0	135	233	2	D1205270	27.0	170	291	3
D120519A	19.25	140	238	2	D120527A	27.25	170	291	3
D1205195	19.5	140	238	2	D1205275	27.5	170	291	3
D120519B	19.75	140	238	2	D120527B	27.75	170	291	3
D1205200	20.0	140	238	2	D1205280	28.0	170	291	3
D120520A	20.25	145	243	2	D120528A	28.25	175	296	3

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		Cast Iron	Aluminum	Stainless Steels	Titanium	Mild Steels	Copper	Bronze
~HB225	HB225~325	HRc30~45	HRc45~55	HRc55~							
◎	◎	○			○	○	○		○		



MORSE TAPER SHANK DRILLS

D1205 SERIES

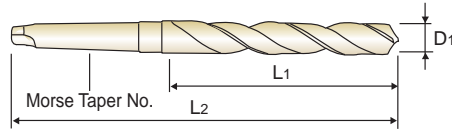
HSS, MORSE TAPER SHANK TWIST DRILLS HSS, SPIRALBOHRER mit MORSEKEGELSCHAFT

JOBBER

KURZ

- ▶ **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
N 20~30°
1~5
h8
118°
P.202

Unit : mm

EDP No.	Drill Diameter	Flute Length L1	Overall Length		No. of Morse Taper	EDP No.	Drill Diameter	Flute Length L1	Overall Length		No. of Morse Taper
	D1		L2	L2			L2				
D1205285	28.5	175	296	3	D1205405	40.5	205	354	4		
D120528B	28.75	175	296	3	D1205410	41.0	205	354	4		
D1205290	29.0	175	296	3	D1205415	41.5	205	354	4		
D120529A	29.25	175	296	3	D1205420	42.0	205	354	4		
D1205295	29.5	175	296	3	D1205425	42.5	205	354	4		
D120529B	29.75	175	296	3	D1205430	43.0	210	359	4		
D1205300	30.0	175	296	3	D1205435	43.5	210	359	4		
D120530A	30.25	180	301	3	D1205440	44.0	210	359	4		
D1205305	30.5	180	301	3	D1205445	44.5	210	359	4		
D120530B	30.75	180	301	3	D1205450	45.0	210	359	4		
D1205310	31.0	180	301	3	D1205455	45.5	215	364	4		
D120531A	31.25	180	301	3	D1205460	46.0	215	364	4		
D1205315	31.5	180	301	3	D1205465	46.5	215	364	4		
D120531B	31.75	185	306	3	D1205470	47.0	215	364	4		
D1205320	32.0	185	334	4	D1205475	47.5	215	364	4		
D1205325	32.5	185	334	4	D1205480	48.0	220	369	4		
D1205330	33.0	185	334	4	D1205485	48.5	220	369	4		
D1205335	33.5	185	334	4	D1205490	49.0	220	369	4		
D1205340	34.0	190	339	4	D1205495	49.5	220	369	4		
D1205345	34.5	190	339	4	D1205500	50.0	220	369	4		
D1205350	35.0	190	339	4	D1205505	50.5	225	374	4		
D1205355	35.5	190	339	4	D1205510	51.0	225	412	5		
D1205360	36.0	195	344	4	D1205520	52.0	225	412	5		
D1205365	36.5	195	344	4	D1205530	53.0	225	412	5		
D1205370	37.0	195	344	4	D1205540	54.0	230	417	5		
D1205375	37.5	195	344	4	D1205550	55.0	230	417	5		
D1205380	38.0	200	349	4	D1205560	56.0	230	417	5		
D1205385	38.5	200	349	4	D1205570	57.0	235	422	5		
D1205390	39.0	200	349	4	D1205580	58.0	235	422	5		
D1205395	39.5	200	349	4	D1205590	59.0	235	422	5		
D1205400	40.0	200	349	4	D1205600	60.0	235	422	5		

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		Cast Iron	Aluminum	Stainless Steels	Titanium	Mild Steels	Copper	Bronze
~HB225	HB225~325	HRC30~45	HRC45~55	HRC55~							
◎	◎	○			○	○	○		○		

CARBIDE

HSS

i-DREAM DRILLS

DREAM DRILLS -GENERAL

DREAM DRILLS -INOX

DREAM DRILLS -MQL TYPE

DREAM DRILLS for HARDENED STEELS

GENERAL CARBIDE DRILLS

NC-SPOTTING DRILLS

MULTI-1 DRILLS

HPD DRILLS

GOLD-P DRILLS

WORM PATTERN DRILLS

STRAIGHT SHANK DRILLS

TAPER SHANK DRILLS

NC-SPOTTING DRILLS

CENTER DRILLS

SPADE DRILLS

TECHNICAL DATA



MORSE TAPER SHANK DRILLS

D1206 SERIES

HSS, MORSE TAPER SHANK TWIST DRILLS

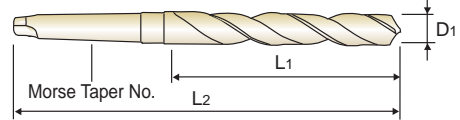
LONG

HSS, SPIRALBOHRER mit MORSEKEGELSCHAFT

LANG

► **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 341
HSS
N 20~30°
1~3
h8
118°
P.202

Unit : mm

EDP No.	Drill Diameter	Flute Length	Overall Length	No. of Morse Taper	EDP No.	Drill Diameter	Flute Length	Overall Length	No. of Morse Taper
	D1	L1	L2			D1	L1	L2	
D1206130	13.0	134	215	1	D1206195	19.5	177	275	2
D1206135	13.5	142	223	1	D1206200	20.0	177	275	2
D1206140	14.0	142	223	1	D1206210	21.0	184	282	2
D1206145	14.5	147	245	2	D1206220	22.0	191	289	2
D1206150	15.0	147	245	2	D1206230	23.0	198	296	2
D1206155	15.5	153	251	2	D1206240	24.0	206	327	3
D1206160	16.0	153	251	2	D1206250	25.0	206	327	3
D1206165	16.5	159	257	2	D1206260	26.0	214	335	3
D1206170	17.0	159	257	2	D1206270	27.0	222	343	3
D1206175	17.5	165	263	2	D1206280	28.0	222	343	3
D1206180	18.0	165	263	2	D1206290	29.0	230	351	3
D1206185	18.5	171	269	2	D1206300	30.0	230	351	3
D1206190	19.0	171	269	2					

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		Cast Iron	Aluminum	Stainless Steels	Titanium	Mild Steels	Copper	Bronze
~HB225	HB225~325	HRC30~45	HRC45~55	HRC55~							
◎	◎	○			○	○	○		○		

◎ : Excellent ○ : Good



MORSE TAPER SHANK DRILLS

D1209 SERIES

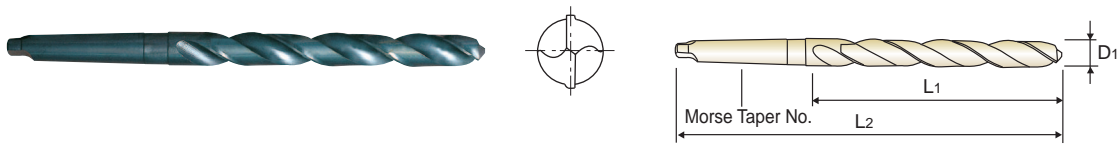
HSS, MORSE TAPER SHANK TWIST DRILLS HSS, SPIRALBOHRER mit MORSEKEGELSCHAFT

JOBBER

KURZ

► **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 1870/1
HSS
N 20~30°
1~4
h8
118°
P.202

Unit : mm

EDP No.	Drill Diameter	Flute Length L1	Overall Length		No. of Morse Taper	EDP No.	Drill Diameter	Flute Length L1	Overall Length		No. of Morse Taper
	D1		L2	L2			L2				
D1209130	13.0	205	310	1	D1209270	27.0	305	460	3		
D1209135	13.5	220	325	1	D1209275	27.5	305	460	3		
D1209140	14.0	220	325	1	D1209280	28.0	305	460	3		
D1209145	14.5	220	340	2	D1209285	28.5	305	460	3		
D1209150	15.0	220	340	2	D1209290	29.0	305	460	3		
D1209155	15.5	230	355	2	D1209295	29.5	305	460	3		
D1209160	16.0	230	355	2	D1209300	30.0	305	460	3		
D1209165	16.5	230	355	2	D1209305	30.5	320	480	3		
D1209170	17.0	230	355	2	D1209310	31.0	320	480	3		
D1209175	17.5	245	370	2	D1209320	32.0	320	505	4		
D1209180	18.0	245	370	2	D1209330	33.0	320	505	4		
D1209185	18.5	245	370	2	D1209340	34.0	340	530	4		
D1209190	19.0	245	370	2	D1209350	35.0	340	530	4		
D1209195	19.5	260	385	2	D1209360	36.0	340	530	4		
D1209200	20.0	260	385	2	D1209370	37.0	340	530	4		
D1209205	20.5	260	385	2	D1209380	38.0	360	555	4		
D1209210	21.0	260	385	2	D1209390	39.0	360	555	4		
D1209215	21.5	270	405	2	D1209400	40.0	360	555	4		
D1209220	22.0	270	405	2	D1209410	41.0	360	555	4		
D1209225	22.5	270	405	2	D1209420	42.0	360	555	4		
D1209230	23.0	270	405	2	D1209430	43.0	385	585	4		
D1209235	23.5	270	425	3	D1209440	44.0	385	585	4		
D1209240	24.0	290	440	3	D1209450	45.0	385	585	4		
D1209245	24.5	290	440	3	D1209460	46.0	385	585	4		
D1209250	25.0	290	440	3	D1209470	47.0	385	585	4		
D1209255	25.5	290	440	3	D1209480	48.0	405	605	4		
D1209260	26.0	290	440	3	D1209490	49.0	405	605	4		
D1209265	26.5	290	440	3	D1209500	50.0	405	605	4		

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		Cast Iron	Aluminum	Stainless Steels	Titanium	Mild Steels	Copper	Bronze
~HB225	HB225~325	HRC30~45	HRC45~55	HRC55~							
◎	◎	○			○	○	○		○		

◎ : Excellent ○ : Good



MORSE TAPER SHANK DRILLS

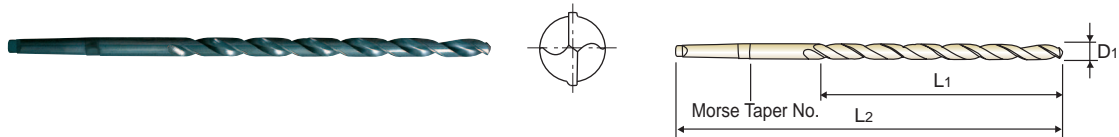
D1210 SERIES

HSS, MORSE TAPER SHANK TWIST DRILLS HSS, SPIRALBOHRER mit MORSEKEGELSCHAFT

**EXTRA LONG
ÜBERLANG**

► **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



DIN 1870/2
HSS
N 20~30°
1~4
h8
118°
P.202

Unit : mm

EDP No.	Drill Diameter	Flute Length L1	Overall Length L2	No. of Morse Taper	EDP No.	Drill Diameter	Flute Length L1	Overall Length L2	No. of Morse Taper
	D1					D1			
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

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		Cast Iron	Aluminum	Stainless Steels	Titanium	Mild Steels	Copper	Bronze
~HB225	HB225~325	HRc30~45	HRc45~55	HRc55~							
◎	◎	○			○	○	○		○		

HSS-E, MORSE TAPER SHANK TWIST DRILLS, TiN COATED
HSS-E, SPIRALBOHTER mit MORSEKEGEL SCHAFT, TiN-BESCHICHTET

DN221 SERIES

Unit : mm

WORK MATERIAL	CARBON STEELS		ALLOY STEELS		TOOL STEELS, ALLOY STEELS		CAST IRON TOOL STEELS		ALUMINUM ALLOYS MAGNESIUM ALLOYS	
	N	S	N	S	N	S	N	S	N	S
DIAMETER										
14	455	0.25	415	0.25	200	0.25	1980	0.29	1980	0.51
16	430	0.27	390	0.27	175	0.27	1730	0.30	1730	0.55
18	370	0.31	350	0.31	155	0.31	1570	0.33	1570	0.57
20	330	0.33	290	0.33	140	0.33	1320	0.36	1320	0.62
22	305	0.36	280	0.36	132	0.36	1240	0.37	1240	0.68
24	290	0.37	250	0.37	125	0.37	1150	0.42	1150	0.72
26	265	0.40	230	0.40	105	0.40	1070	0.43	1070	0.75
28	250	0.43	215	0.43	100	0.43	990	0.45	990	0.79
30	230	0.45	200	0.45	88	0.45	910	0.53	910	0.83
32	215	0.49	190	0.49	88	0.49	785	0.53	785	0.86

N = R.P.M
 S = Feed per Revolution (mm/rev.)

HSS-E, TWIST DRILLS for HEAVY DUTY, DIN345
HSS-E, SPIRALBOHRER für HOHELEISTUNGEN DIN 345

DL205 SERIES

Unit : mm

WORK MATERIAL	CARBON STEELS		CARBON STEELS		CARBON STEELS		ALLOY STEELS		ALLOY STEELS		STAINLESS STEELS		CAST IRON	
	N	S	N	S	N	S	N	S	N	S	N	S	N	S
HARDNESS			~ HRc23		HRc23 ~ 28		HRc23 ~ 34		HRc34 ~ 38		HRc23		HRc21	
STRENGTH	~ 570 N/mm ²		~ 830 N/mm ²		830 ~ 950 N/mm ²		830 ~ 1110 N/mm ²		1110 ~ 1260 N/mm ²		830 N/mm ²		800 N/mm ²	
DIAMETER														
13	785	0.17	575	0.17	445	0.09	540	0.20	325	0.05	785	0.17	785	0.17
14	720	0.18	530	0.18	410	0.10	500	0.20	300	0.05	720	0.18	720	0.18
16	635	0.20	475	0.20	365	0.11	445	0.22	265	0.05	635	0.20	635	0.20
18	550	0.22	420	0.22	320	0.12	390	0.23	230	0.05	550	0.22	550	0.22
20	500	0.23	380	0.23	290	0.13	355	0.23	210	0.06	500	0.23	500	0.23
22	450	0.24	340	0.24	260	0.14	320	0.23	190	0.06	450	0.24	450	0.24
24	420	0.25	320	0.25	240	0.15	295	0.23	175	0.07	420	0.25	420	0.25
26	390	0.26	300	0.26	220	0.16	270	0.23	160	0.07	390	0.26	390	0.26
28	360	0.27	275	0.27	205	0.17	250	0.23	150	0.07	360	0.27	360	0.27
30	330	0.28	250	0.28	190	0.18	230	0.23	140	0.08	330	0.28	330	0.28

N = R.P.M
 S = Feed per Revolution (mm/rev.)



MORSE TAPER SHANK DRILLS

RECOMMENDED CUTTING CONDITIONS EMPFOHLENE SCHNEIDKONDITIONEN

HSS DRILLS DIN345, DIN341, DIN1870 HSS SPIRALBOHRER DIN 345, DIN 341, DIN 1870

D1205, D1206, D1209, D1210 SERIES

Unit : mm

WORK MATERIAL	CARBON STEELS		CARBON STEELS		CARBON STEELS		ALLOY STEELS		ALLOY STEELS		STAINLESS STEELS		TITANIUM ALLOYS	
	HARDNESS		~ HRC23		~ HRC23 ~ 28		HRC23 ~ 34		HRC34 ~ 38		HRC23			
STRENGTH	~ 570 N/mm ²		~ 830 N/mm ²		830 ~ 950 N/mm ²		830 ~ 1110 N/mm ²		1110 ~ 1260 N/mm ²		830 N/mm ²		410 N/mm ²	
DIAMETER	N	S	N	S	N	S	N	S	N	S	N	S	N	S
13	645	0.17	480	0.17	370	0.09	440	0.20	265	0.05	480	0.17	265	0.09
19	440	0.23	330	0.23	255	0.13	300	0.23	180	0.05	330	0.23	180	0.13
32	260	0.28	195	0.28	145	0.18	180	0.18	107	0.08	195	0.28	107	0.18
50	165	0.33	125	0.33	93	0.20	115	0.20	68	0.08	125	0.33	68	0.20
60	140	0.40	105	0.40	78	0.23	95	0.23	57	0.10	105	0.40	57	0.23

WORK MATERIAL	TOOL STEELS		CAST IRON		ALUMINUM ALLOYS		MAGNESIUM ALLOYS		ZINC ALLOYS		PLASTICS	
	HARDNESS		~ HRC21									
STRENGTH	~ 270 N/mm ²		~ 800 N/mm ²									
DIAMETER	N	S	N	S	N	S	N	S	N	S	N	S
13	645	0.17	480	0.17	1200	0.26	1600	0.26	1200	0.26	645	0.17
19	440	0.23	330	0.23	820	0.30	1100	0.30	820	0.30	440	0.23
32	240	0.30	195	0.28	490	0.38	660	0.38	490	0.38	260	0.28
50	150	0.43	125	0.33	310	0.46	415	0.46	310	0.46	165	0.33
60	125	0.48	105	0.40	260	0.50	345	0.50	260	0.50	140	0.40

N = R.P.M
S = Feed per Revolution (mm/rev.)