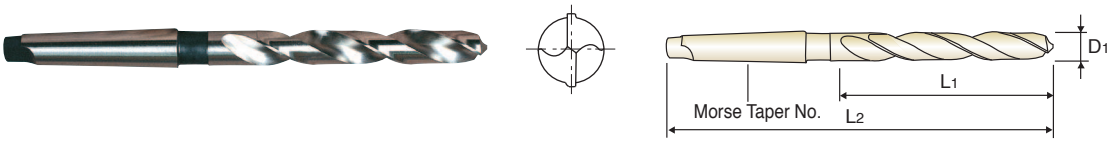
MORSE TAPER SHANK DRILLS

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 ≈ 30° | 1 ~ 3 | h8 | 118° P.229

Unit : mm

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

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

MORSE TAPER SHANK DRILLS

RECOMMENDED CUTTING CONDITIONS
EMPFOHLENE SCHNEIDKONDITIONEN

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

DL205 SERIES

WORK MATERIAL	CARBON STEELS		CARBON STEELS		CARBON STEELS		ALLOY STEELS		ALLOY STEELS		STAINLESS STEELS		CAST IRON	
HARDNESS			~ HRc23		HRc23 ~ 28		HRc23 ~ 34		HRc34 ~ 38		HRc23		HRc21	
STRENGTH	~ 570 N/mm²		~ 830 N/mm²		830 ~ 950 N/mm²		830 ~ 1110 N/mm²		1110 ~ 1260 N/mm²		830 N/mm²		800 N/mm²	
DRILLING SPEED	27 ~ 32 m/min		20 ~ 25 m/min		13 ~ 18 m/min		17 ~ 22 m/min		8 ~ 13 m/min		27 ~ 32 m/min		27 ~ 32 m/min	
DIAMETER	N	S	N	S	N	S	N	S	N	S	N	S	N	S
13.0	785	0.17	575	0.17	445	0.09	540	0.20	325	0.05	785	0.17	785	0.17
14.0	720	0.18	530	0.18	410	0.10	500	0.20	300	0.05	720	0.18	720	0.18
16.0	635	0.20	475	0.20	365	0.11	445	0.22	265	0.05	635	0.20	635	0.20
18.0	550	0.22	420	0.22	320	0.12	390	0.23	230	0.05	550	0.22	550	0.22
20.0	500	0.23	380	0.23	290	0.13	355	0.23	210	0.06	500	0.23	500	0.23
22.0	450	0.24	340	0.24	260	0.14	320	0.23	190	0.06	450	0.24	450	0.24
24.0	420	0.25	320	0.25	240	0.15	295	0.23	175	0.07	420	0.25	420	0.25
26.0	390	0.26	300	0.26	220	0.16	270	0.23	160	0.07	390	0.26	390	0.26
28.0	360	0.27	275	0.27	205	0.17	250	0.23	150	0.07	360	0.27	360	0.27
30.0	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.)

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

D1205, D1206, D1209, D1210 SERIES

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/mm²		~ 830 N/mm²		830 ~ 950 N/mm²		830 ~ 1110 N/mm²		1110 ~ 1260 N/mm²		830 N/mm²		410 N/mm²	
DRILLING SPEED	20 ~ 25 m/min		18 ~ 22 m/min		10 ~ 15 m/min		13 ~ 18 m/min		8 ~ 12 m/min		15 ~ 20 m/min		8 ~ 12 m/min	
DIAMETER	N	S	N	S	N	S	N	S	N	S	N	S	N	S
13.0	645	0.17	480	0.17	370	0.09	440	0.17	265	0.05	480	0.17	265	0.09
19.0	440	0.23	330	0.23	255	0.13	300	0.23	180	0.05	330	0.23	180	0.13
32.0	260	0.28	195	0.28	145	0.18	180	0.28	107	0.08	195	0.28	107	0.18
50.0	165	0.33	125	0.33	93	0.20	115	0.33	68	0.08	125	0.33	68	0.20
60.0	140	0.40	105	0.40	78	0.23	95	0.40	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/mm²		~ 800 N/mm²									
DRILLING SPEED	20 ~ 25 m/min		15 ~ 20 m/min		40 ~ 50 m/min		55 ~ 65 m/min		40 ~ 50 m/min		20 ~ 25 m/min	
DIAMETER	N	S	N	S	N	S	N	S	N	S	N	S
13.0	645	0.17	480	0.17	1200	0.26	1600	0.26	1200	0.26	645	0.17
19.0	440	0.23	330	0.23	820	0.30	1100	0.30	820	0.30	440	0.23
32.0	240	0.30	195	0.28	490	0.38	660	0.38	490	0.38	260	0.28
50.0	150	0.43	125	0.33	310	0.46	415	0.46	310	0.46	165	0.33
60.0	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.)