
MIN. Ø
0, 750

DEEP DRILLING

Deep drill

Technical appendix

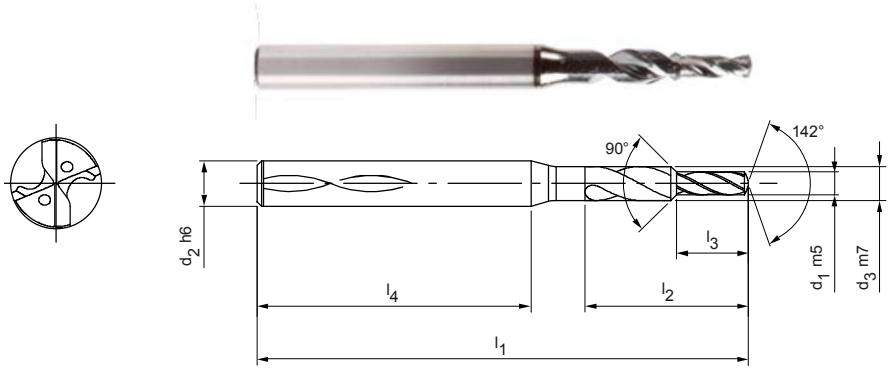
MEGA-Pilot-Drill

Solid carbide step drill
SCD581, internal coolant supply

Design:

Drill diameter:	1.00 – 3.00 mm
Bore tolerance:	IT 9 (achievable)
Cutting material:	HP246
Number of cutting edges:	2
Number of guiding chamfers:	2
Tip angle:	142°

Application:
Spotting drill specifically designed for the MEGA-Deep-Drill.
Maximum use up to diameter of 3.00 mm.



Stocked preferred series in shank form HA

Dimensions							Shank form HA	
d_1 m5	d_2 h6	d_3 m7	l_1	l_2	l_3	l_4	Specification	Order no.
1,00	3	1,5	50	7,2	3	38	SCD581-0100-2-2-142HA-HP246	31080870
1,10	3	1,65	50	7,9	3,3	37,5	SCD581-0110-2-2-142HA-HP246	31080871
1,20	3	1,8	50	8,6	3,6	36,9	SCD581-0120-2-2-142HA-HP246	31080872
1,30	3	1,95	50	9,4	3,9	36,3	SCD581-0130-2-2-142HA-HP246	31080873
1,40	3	2,1	50	10,1	4,2	35,7	SCD581-0140-2-2-142HA-HP246	31080874
1,50	3	2,25	50	10,8	4,5	35,1	SCD581-0150-2-2-142HA-HP246	31080875
1,60	3	2,4	50	11,5	4,8	34,6	SCD581-0160-2-2-142HA-HP246	31080876
1,70	3	2,55	50	12,2	5,1	34	SCD581-0170-2-2-142HA-HP246	31080877
1,80	3	2,7	50	13	5,4	33,4	SCD581-0180-2-2-142HA-HP246	31080878
1,90	4	2,85	55	13,7	5,7	35,9	SCD581-0190-2-2-142HA-HP246	31080879
2,00	4	3	55	14,4	6	35,3	SCD581-0200-2-2-142HA-HP246	31080880
2,10	4	3,15	55	15,1	6,3	34,8	SCD581-0210-2-2-142HA-HP246	31080881
2,20	4	3,3	55	15,8	6,6	34,2	SCD581-0220-2-2-142HA-HP246	31080882
2,30	4	3,45	55	16,6	6,9	33,6	SCD581-0230-2-2-142HA-HP246	31080883
2,40	4	3,6	55	17,3	7,2	33	SCD581-0240-2-2-142HA-HP246	31080884
2,50	4	3,75	55	18	7,5	32,4	SCD581-0250-2-2-142HA-HP246	31080885
2,60	6	3,9	66	18,7	7,8	39,1	SCD581-0260-2-2-142HA-HP246	31080886
2,70	6	4,05	66	19,4	8,1	38,5	SCD581-0270-2-2-142HA-HP246	31080887
2,80	6	4,2	66	20,2	8,4	37,9	SCD581-0280-2-2-142HA-HP246	31080888
2,90	6	4,35	66	20,9	8,7	37,4	SCD581-0290-2-2-142HA-HP246	31080889
3,00	6	4,5	66	21,6	9	36,8	SCD581-0300-2-2-142HA-HP246	31080890

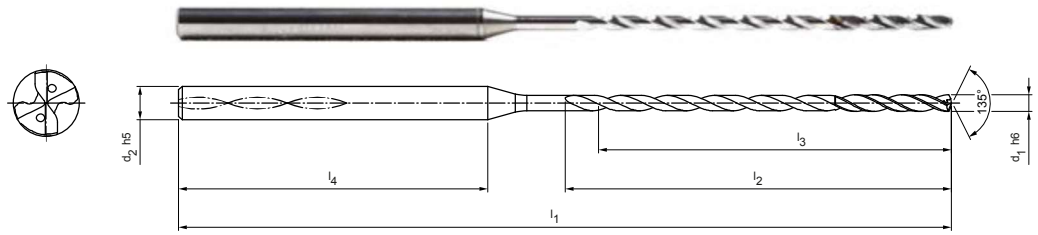
Dimensions in mm.
For cutting data recommendations, see end of chapter.
Special designs and other coatings available upon request.

MEGA-Deep-Drill

Solid carbide twist drill
SCD171 (20xD), internal coolant supply

Design:

Drill diameter:	1.00 – 2.99 mm
Bore tolerance:	≥ IT 9
Cutting material:	HP246
Number of cutting edges:	2
Number of guiding chamfers:	4
Tip angle:	135°
Helix angle:	30°
Special features:	Head coating



P 1 2 3 4 5 6 M 1 2 3 K 1 2 3 N 1 2 3 4 S 1 2 3 4 5 H 1 2 3

CONFIG Performance LINE IT9 20xD HA DIN 6535

Stocked preferred series in shank form HA

Dimensions						L/d ratio	Shank form HA	
d_1 h7	d_2 h6	l_1	l_2	l_3	l_4		Specification	Order no.
1,00	3	62	27	25	28	28	SCD171-0100-2-4-135HA20-HP246	30998795
1,10	3	62	27	25	28	28	SCD171-0110-2-4-135HA20-HP246	30998796
1,20	3	62	27	25	28	28	SCD171-0120-2-4-135HA20-HP246	30998798
1,30	3	70	35	33	28	28	SCD171-0130-2-4-135HA20-HP246	30998799
1,40	3	70	35	32	28	28	SCD171-0140-2-4-135HA20-HP246	30998800
1,50	3	70	35	32	28	28	SCD171-0150-2-4-135HA20-HP246	30998801
1,60	3	75	41	38	28	28	SCD171-0160-2-4-135HA20-HP246	30998802
1,70	3	75	41	38	28	28	SCD171-0170-2-4-135HA20-HP246	30998803
1,80	3	75	41	38	28	28	SCD171-0180-2-4-135HA20-HP246	30998804
1,90	3	80	46	43	28	28	SCD171-0190-2-4-135HA20-HP246	30998805
2,00	3	80	46	43	28	28	SCD171-0200-2-4-135HA20-HP246	30998806
2,10	3	80	46	42	28	28	SCD171-0210-2-4-135HA20-HP246	30998807
2,20	3	90	55	51	28	28	SCD171-0220-2-4-135HA20-HP246	30998808
2,30	3	90	55	51	28	28	SCD171-0230-2-4-135HA20-HP246	30998809
2,40	3	90	55	51	28	28	SCD171-0240-2-4-135HA20-HP246	30998810
2,50	3	90	55	51	28	28	SCD171-0250-2-4-135HA20-HP246	30998811
2,60	3	100	66	62	28	28	SCD171-0260-2-4-135HA20-HP246	30998812
2,70	3	100	66	61	28	28	SCD171-0270-2-4-135HA20-HP246	30998813
2,80	3	100	66	61	28	28	SCD171-0280-2-4-135HA20-HP246	30998814
2,90	3	100	66	61	28	28	SCD171-0290-2-4-135HA20-HP246	30998815

Recommendation for spotting drill:
Please use the MEGA-Pilot-Drill (SCD581) or the MICRO-Drill-Steel (SCD371 - 5xD) with the same nominal diameter for the spotting drill.
The tip angle and diameter tolerances are matched for optimal functionality as well as for the interaction of spotting drill and deep drill.

Dimensions in mm.
For cutting data recommendations, see end of chapter.
Special designs and other coatings available upon request.

MEGA-Deep-Drill | Solid carbide twist drill SCD171 (20xD), internal coolant supply

Configurable features

Diameter:
Diameter in increments of
0.01 mm freely selectable

Specification:
SCD171-**[diameter]**-2-4-135HA20-HP246

Example:
SCD171-**0221**-2-4-135HA20-HP246

Tool diameter d_1 = 2.21 mm

Dimensions of configurable series

d_1 min.	d_1 max.	d_2 h6	l_1	l_2	$l_{3\ max.}$	l_4
1,00	1,29	3	62	27	25	28
1,30	1,39	3	70	35	33	28
1,40	1,59	3	70	35	32	28
1,60	1,89	3	75	41	38	28
1,90	2,09	3	80	46	43	28
2,10	2,19	3	80	46	42	28
2,20	2,59	3	90	55	51	28
2,60	2,69	3	100	66	62	28
2,70	2,99	3	100	66	61	28

Application notes for deep drilling can be found in the Technical Appendix chapter.

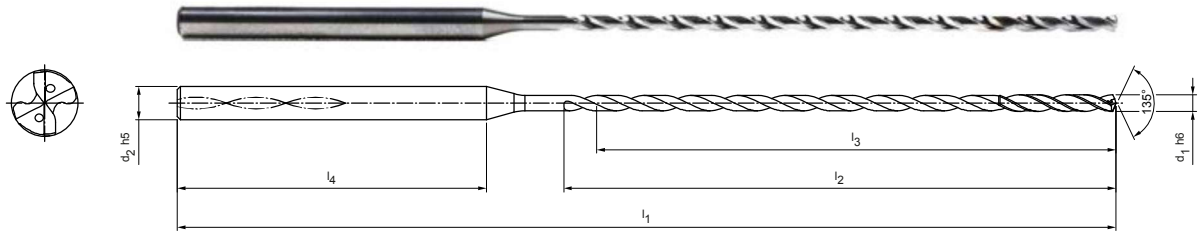
Dimensions in mm.
For cutting data recommendations, see end of chapter.
Special designs and other coatings available upon request.

MEGA-Deep-Drill

Solid carbide twist drill
SCD171 (30xD), internal coolant supply

Design:

Drill diameter:	1.00 – 2.99 mm
Bore tolerance:	≥ IT 9
Cutting material:	HP246
Number of cutting edges:	2
Number of guiding chamfers:	4
Tip angle:	135°
Helix angle:	30°
Special features:	Head coating



P 1 2 3 4 5 6 M 1 2 3 K 1 2 3 N 1 2 3 4 S 1 2 3 4 5 H 1 2 3

CONFIG Performance LINE IT9 30xD HA DIN 6535

Stocked preferred series in shank form HA

Dimensions						L/d ratio	Shank form HA	
d_1 h6	d_2 h5	l_1	l_2	l_3	l_4		Specification	Order no.
1,00	3	75	38	36	28	36	SCD171-0100-2-4-135HA30-HP246	30998816
1,10	3	75	38	36	28	33	SCD171-0110-2-4-135HA30-HP246	30998817
1,20	3	75	38	36	28	30	SCD171-0120-2-4-135HA30-HP246	30998818
1,30	3	85	50	48	28	37	SCD171-0130-2-4-135HA30-HP246	30998819
1,40	3	85	50	47	28	34	SCD171-0140-2-4-135HA30-HP246	30998820
1,50	3	85	50	47	28	31	SCD171-0150-2-4-135HA30-HP246	30998821
1,60	3	95	59	56	28	35	SCD171-0160-2-4-135HA30-HP246	30998822
1,70	3	95	59	56	28	33	SCD171-0170-2-4-135HA30-HP246	30998823
1,80	3	95	59	56	28	31	SCD171-0180-2-4-135HA30-HP246	30998824
1,90	3	100	66	63	28	33	SCD171-0190-2-4-135HA30-HP246	30998825
2,00	3	100	66	63	28	32	SCD171-0200-2-4-135HA30-HP246	30998826
2,10	3	100	66	62	28	30	SCD171-0210-2-4-135HA30-HP246	30998827
2,20	3	115	80	76	28	35	SCD171-0220-2-4-135HA30-HP246	30998828
2,30	3	115	80	76	28	33	SCD171-0230-2-4-135HA30-HP246	30998829
2,40	3	115	80	76	28	32	SCD171-0240-2-4-135HA30-HP246	30998830
2,50	3	115	80	76	28	30	SCD171-0250-2-4-135HA30-HP245	30451572
2,60	3	130	96	92	28	35	SCD171-0260-2-4-135HA30-HP246	30998832
2,70	3	130	96	91	28	34	SCD171-0270-2-4-135HA30-HP246	30998833
2,80	3	130	96	91	28	33	SCD171-0280-2-4-135HA30-HP246	30998834
2,90	3	130	96	91	28	31	SCD171-0290-2-4-135HA30-HP246	30998835

Recommendation for spotting drill:
Please use the MEGA-Pilot-Drill (SCD581) or the MICRO-Drill-Steel (SCD371 - 5xD) with the same nominal diameter for the spotting drill.
The tip angle and diameter tolerances are matched for optimal functionality as well as for the interaction of spotting drill and deep drill.

Dimensions in mm.
For cutting data recommendations, see end of chapter.
Special designs and other coatings available upon request.

MEGA-Deep-Drill | Solid carbide twist drill SCD171 (20xD), internal coolant supply

Configurable features

Diameter:
Diameter in increments of
0.01 mm freely selectable

Specification:
SCD171-**[diameter]**-2-4-135HA30-HP246

Example:
SCD171-**0221**-2-4-135HA30-HP246

Tool diameter d_1 = 2.21 mm

Dimensions of configurable series

d_1 min.	d_1 max.	d_2 h6	l_1	l_2	$l_{3\ max.}$	l_4
1,00	1,29	3	75	38	36	28
1,30	1,39	3	85	50	48	28
1,40	1,59	3	85	50	47	28
1,60	1,89	3	95	59	56	28
1,90	2,09	3	100	66	63	28
2,10	2,19	3	100	66	62	28
2,20	2,59	3	115	80	76	28
2,60	2,69	3	130	96	92	28
2,70	2,99	3	130	96	91	28

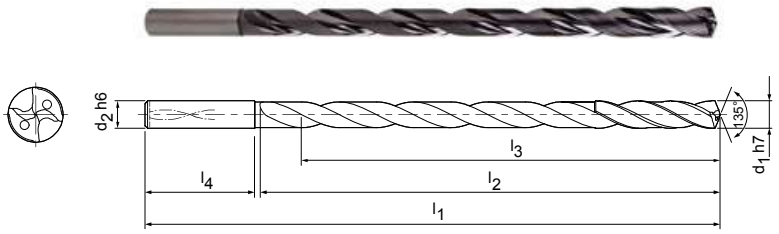
Dimensions in mm.
For cutting data recommendations, see end of chapter.
Special designs and other coatings available upon request.

MEGA-Deep-Drill

Solid carbide twist drill
SCD171 (15xD), internal coolant supply

Design:

Drill diameter:	3.00 – 15.00 mm
Bore tolerance:	≥ IT 9
Cutting material:	HP285 / HP245
Number of cutting edges:	2
Number of guiding chamfers:	4
Tip angle:	135°
Helix angle:	30°
Special features:	Head coating



P 1 2 3 4 5 6 M 1 2 3 K 1 2 3 N 1 2 3 4 S 1 2 3 4 5 H 1 2 3

IT9 15xD HA DIN 6535

Stocked preferred series in shank form HA

Dimensions						L/d ratio	Shank form HA	
d_1 h7	d_2 h6	l_1	l_2	l_3	l_4		Specification	Order no.
3,00	4	90	56	52	32	17	SCD171-0300-2-4-135HA15-HP285	30392214
3,50	4	100	66	61	32	17	SCD171-0350-2-4-135HA15-HP285	30392215
4,00	4	100	66	60	32	15	SCD171-0400-2-4-135HA15-HP285	30392216
4,50	5	110	74	67	34	15	SCD171-0450-2-4-135HA15-HP285	30392217
5,00	5	120	84	77	34	15	SCD171-0500-2-4-135HA15-HP285	30392218
5,50	6	130	92	84	36	15	SCD171-0550-2-4-135HA15-HP285	30392219
6,00	6	140	102	93	36	16	SCD171-0600-2-4-135HA15-HP285	30392220
7,00	7	155	115	105	38	15	SCD171-0700-2-4-135HA15-HP285	30392221
8,00	8	175	133	121	40	15	SCD171-0800-2-4-135HA15-HP285	30392222
9,00	9	190	148	135	40	15	SCD171-0900-2-4-135HA15-HP285	30392223
9,50	10	210	168	153	40	15	SCD171-0950-2-4-135HA15-HP245	30453021
10,00	10	210	168	153	40	15	SCD171-1000-2-4-135HA15-HP285	30392224
11,00	11	230	183	167	45	15	SCD171-1100-2-4-135HA15-HP245	30392225
12,00	12	250	203	185	45	15	SCD171-1200-2-4-135HA15-HP245	30392226
13,00	13	265	218	199	45	15	SCD171-1300-2-4-135HA15-HP245	30392227
14,00	14	285	233	212	50	15	SCD171-1400-2-4-135HA15-HP245	30392228
15,00	15	305	253	231	50	15	SCD171-1500-2-4-135HA15-HP245	30392229

Recommendation for spotting drill:
Please use the MEGA-Drill-Steel-Plus (SCD601 - 3xD) and the same nominal diameter for the spotting drill. The tip angle and diameter tolerances are matched for optimal functionality as well as for the interaction of spotting drill and deep drill.

Application notes for deep drilling can be found in the Technical Appendix chapter.

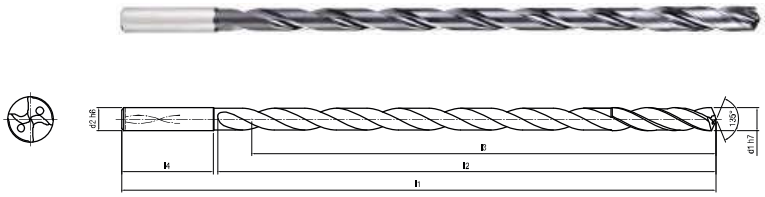
Dimensions in mm.
For cutting data recommendations, see end of chapter.
Special designs and other coatings available upon request.

MEGA-Deep-Drill

Solid carbide twist drill
SCD171 (20xD), internal coolant supply

Design:

Drill diameter:	3.00 – 16.00 mm
Bore tolerance:	≥ IT 9
Cutting material:	HP245 / HP285
Number of cutting edges:	2
Number of guiding chamfers:	4
Tip angle:	135°
Helix angle:	30°
Special features:	Head coating



P 1 2 3 4 5 6 M 1 2 3 K 1 2 3 N 1 2 3 4 S 1 2 3 4 5 H 1 2 3

IT9 20xD HA DIN 6535

Stocked preferred series in shank form HA

Dimensions						L/d ratio	Shank form HA	
d_1 h7	d_2 h6	l_1	l_2	l_3	l_4		Specification	Order no.
3,00	4	110	74	70	32	23	SCD171-0300-2-4-135HA20-HP285	30392231
3,50	4	120	86	81	32	23	SCD171-0350-2-4-135HA20-HP285	30392232
4,00	4	120	86	80	32	20	SCD171-0400-2-4-135HA20-HP285	30392233
5,00	5	145	109	102	34	20	SCD171-0500-2-4-135HA20-HP285	30392235
5,50	6	160	120	112	36	20	SCD171-0550-2-4-135HA20-HP285	30392236
6,00	6	170	130	121	36	20	SCD171-0600-2-4-135HA20-HP285	30392237
6,50	7	190	150	140	36	20	SCD171-0650-2-4-135HA20-HP245	30451508
7,00	7	190	150	140	38	20	SCD171-0700-2-4-135HA20-HP285	30392238
8,00	8	215	173	161	40	20	SCD171-0800-2-4-135HA20-HP285	30392239
9,00	9	240	196	183	40	20	SCD171-0900-2-4-135HA20-HP285	30392240
10,00	10	260	218	203	40	20	SCD171-1000-2-4-135HA20-HP285	30392241
11,00	11	285	238	222	45	20	SCD171-1100-2-4-135HA20-HP245	30392242
12,00	12	305	258	240	45	20	SCD171-1200-2-4-135HA20-HP245	30392243
14,00	14	355	303	282	50	20	SCD171-1400-2-4-135HA20-HP245	30392245
15,00	15	375	323	301	50	20	SCD171-1500-2-4-135HA20-HP245	30392246
16,00	16	400	348	324	50	20	SCD171-1600-2-4-135HA20-HP245	30392247

Recommendation for spotting drill:
Please use the MEGA-Drill-Steel-Plus (SCD601 - 3xD) and the same nominal diameter for the spotting drill. The tip angle and diameter tolerances are matched for optimal functionality as well as for the interaction of spotting drill and deep drill.

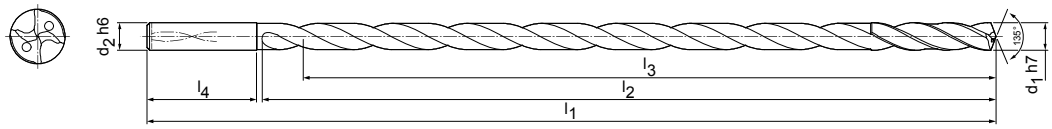
Application notes for deep drilling can be found in the Technical Appendix chapter.

MEGA-Deep-Drill

Solid carbide twist drill
SCD171 (25xD), internal coolant supply

Design:

Drill diameter:	3.00 – 14.00 mm
Bore tolerance:	≥ IT 9
Cutting material:	HP285 / HP245
Number of cutting edges:	2
Number of guiding chamfers:	4
Tip angle:	135°
Helix angle:	30°
Special features:	Head coating



P 1 2 3 4 5 6 M 1 2 3 K 1 2 3 N 1 2 3 4 S 1 2 3 4 5 H 1 2 3

IT9 25xD HA DIN 6535

Stocked preferred series in shank form HA

Dimensions						L/d ratio	Shank form HA	
d_1 h7	d_2 h6	l_1	l_2	l_3	l_4		Specification	Order no.
3,00	4	125	91	87	32	29	SCD171-0300-2-4-135HA25-HP285	30392248
3,50	4	140	106	101	32	29	SCD171-0350-2-4-135HA25-HP285	30392249
4,00	4	140	106	100	32	25	SCD171-0400-2-4-135HA25-HP285	30392250
5,00	5	170	134	127	34	25	SCD171-0500-2-4-135HA25-HP285	30392252
5,50	6	185	147	139	36	25	SCD171-0550-2-4-135HA25-HP285	30392253
6,00	6	200	160	151	36	25	SCD171-0600-2-4-135HA25-HP285	30392254
7,00	7	225	185	175	38	25	SCD171-0700-2-4-135HA25-HP285	30392255
8,00	8	255	213	201	40	25	SCD171-0800-2-4-135HA25-HP285	30392256
9,00	9	280	238	225	40	25	SCD171-0900-2-4-135HA25-HP285	30392257
10,00	10	310	268	253	40	25	SCD171-1000-2-4-135HA25-HP285	30392258
11,00	11	340	293	277	45	25	SCD171-1100-2-4-135HA25-HP245	30392259
12,00	12	365	318	300	45	25	SCD171-1200-2-4-135HA25-HP245	30392260
14,00	14	425	373	352	50	25	SCD171-1400-2-4-135HA25-HP245	30392262

Recommendation for spotting drill:
Please use the MEGA-Drill-Steel-Plus (SCD601 - 3xD) and the same nominal diameter for the spotting drill. The tip angle and diameter tolerances are matched for optimal functionality as well as for the interaction of spotting drill and deep drill.

Application notes for deep drilling can be found in the Technical Appendix chapter.

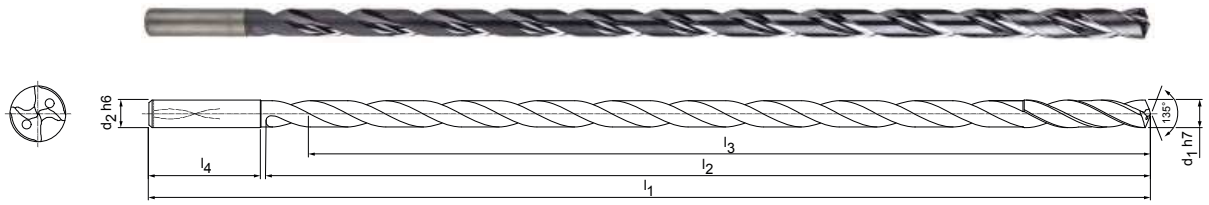
Dimensions in mm.
For cutting data recommendations, see end of chapter.
Special designs and other coatings available upon request.

MEGA-Deep-Drill

Solid carbide twist drill
SCD171 (30xD), internal coolant supply

Design:

Drill diameter:	3.00 – 12.00 mm
Bore tolerance:	≥ IT 9
Cutting material:	HP245 / HP285
Number of cutting edges:	2
Number of guiding chamfers:	4
Tip angle:	135°
Helix angle:	30°
Special features:	Head coating



P 1 2 3 4 5 6 M 1 2 3 K 1 2 3 N 1 2 3 4 S 1 2 3 4 5 H 1 2 3

IT9 30xD HA DIN 6535

Stocked preferred series in shank form HA

Dimensions						L/d ratio	Shank form HA	
d_1 h7	d_2 h6	l_1	l_2	l_3	l_4		Specification	Order no.
3,00	4	145	110	106	32	35	SCD171-0300-2-4-135HA30-HP285	30392264
4,00	4	160	126	120	32	30	SCD171-0400-2-4-135HA30-HP285	30392266
4,50	5	180	144	137	34	31	SCD171-0450-2-4-135HA30-HP285	30392267
5,00	5	195	159	152	34	30	SCD171-0500-2-4-135HA30-HP285	30392268
5,50	6	210	172	164	36	30	SCD171-0550-2-4-135HA30-HP285	30392269
6,00	6	230	192	183	36	31	SCD171-0600-2-4-135HA30-HP285	30392270
7,00	7	260	220	210	38	30	SCD171-0700-2-4-135HA30-HP285	30392271
8,00	8	295	253	241	40	30	SCD171-0800-2-4-135HA30-HP285	30392272
9,00	9	325	283	270	40	30	SCD171-0900-2-4-135HA30-HP285	30392273
10,00	10	360	318	303	40	30	SCD171-1000-2-4-135HA30-HP285	30392274
11,00	11	400	353	337	45	31	SCD171-1100-2-4-135HA30-HP245	30392275
12,00	12	430	383	365	45	30	SCD171-1200-2-4-135HA30-HP245	30392276

Recommendation for spotting drill:
Please use the MEGA-Drill-Steel-Plus (SCD601 - 3xD) and the same nominal diameter for the spotting drill. The tip angle and diameter tolerances are matched for optimal functionality as well as for the interaction of spotting drill and deep drill.

Application notes for deep drilling can be found in the Technical Appendix chapter.

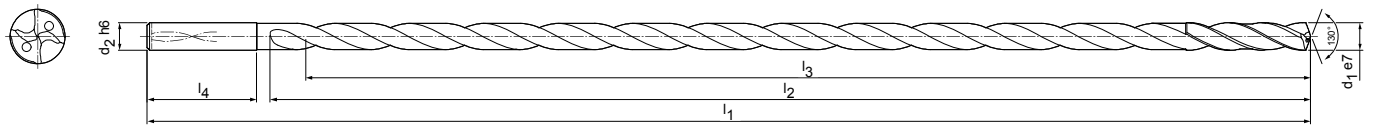
Dimensions in mm.
For cutting data recommendations, see end of chapter.
Special designs and other coatings available upon request.

MEGA-Deep-Drill

Solid carbide twist drill
SCD171 (40xD), internal coolant supply

Design:

Drill diameter:	4.00 – 6.00 mm
Bore tolerance:	≥ IT 9
Cutting material:	HP285
Number of cutting edges:	2
Number of guiding chamfers:	4
Tip angle:	130°
Helix angle:	30°
Special features:	Head coating



P 1 2 3 4 5 6 M 1 2 3 K 1 2 3 N 1 2 3 4 S 1 2 3 4 5 H 1 2 3

IT9 40xD HA DIN 6535

Stocked preferred series in shank form HA

Dimensions						L/d ratio	Shank form HA	
d_1 h7	d_2 h6	l_1	l_2	l_3	l_4		Specification	Order no.
4,00	4	205	170	164	32	43	SCD171-0400-2-4-130HA40-HP285	30549867
5,00	5	245	208	201	34	42	SCD171-0500-2-4-130HA40-HP285	30549869
6,00	6	290	250	241	36	42	SCD171-0600-2-4-130HA40-HP285	30549871

Recommendation for spotting drills or pre-drills:
Please use the MEGA-Drill-Steel-Plus (SCD601 - 3xD) and the same nominal diameter for the spotting drill. Then start pre-drilling using the MEGA-Deep-Drill SCD171 / 20xD and also using the same nominal diameter. The tip angle and diameter tolerance are matched for optimal functionality as well as for the interaction of spotting drill and deep drill.

Application notes for deep drilling can be found in the Technical Appendix chapter.

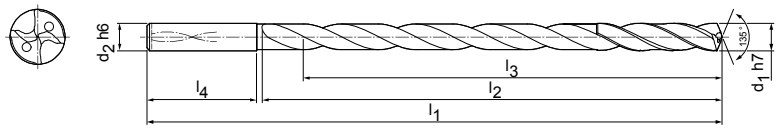
Dimensions in mm.
For cutting data recommendations, see end of chapter.
Special designs and other coatings available upon request.

MEGA-Deep-Drill-Alu

Solid carbide twist drill
SCD181 (15xD), internal coolant supply

Design:

Drill diameter:	3.00 – 12.00 mm
Bore tolerance:	≥ IT 9
Cutting material:	HU680 / HU644
Number of cutting edges:	2
Number of guiding chamfers:	4
Tip angle:	135°
Helix angle:	30°



Stocked preferred series in shank form HA

Dimensions						L/d ratio	Shank form HA	
d_1 h7	d_2 h6	l_1	l_2	l_3	l_4		Specification	Order no.
3,00	4	90	56	52	32	17	SCD181-0300-2-4-135HA15-HU680	30392277
3,50	4	100	66	61	32	17	SCD181-0350-2-4-135HA15-HU680	30392278
4,00	4	100	66	60	32	15	SCD181-0400-2-4-135HA15-HU680	30392279
5,00	5	120	84	77	34	15	SCD181-0500-2-4-135HA15-HU680	30392281
6,00	6	140	102	93	36	16	SCD181-0600-2-4-135HA15-HU680	30392283
7,00	7	155	115	105	38	15	SCD181-0700-2-4-135HA15-HU680	30392284
8,00	8	175	133	121	40	15	SCD181-0800-2-4-135HA15-HU680	30392285
10,00	10	210	168	153	40	15	SCD181-1000-2-4-135HA15-HU680	30392287
12,00	12	250	203	185	45	15	SCD181-1200-2-4-135HA15-HU644	30392289

Recommendation for spotting drill:
For the spotting drill please use the MEGA-Drill-Alu (SCD131 - 3xD/5xD) with the same nominal diameter. The tip angle and diameter tolerances are matched for optimal functionality as well as for the interaction of spotting drill and deep drill.

Application notes for deep drilling can be found in the Technical Appendix chapter.

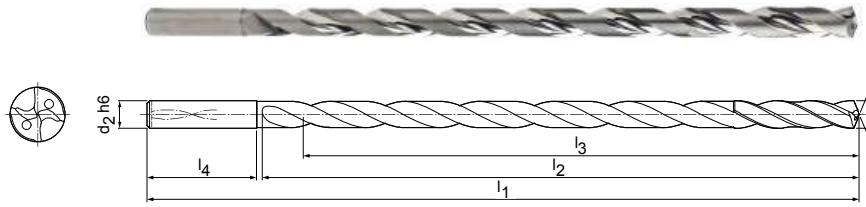
Dimensions in mm.
For cutting data recommendations, see end of chapter.
Special designs and other coatings available upon request.

MEGA-Deep-Drill-Alu

Solid carbide twist drill
SCD181 (20xD), internal coolant supply

Design:

Drill diameter:	3.00 – 12.00 mm
Bore tolerance:	≥ IT 9
Cutting material:	HU680 / HU644
Number of cutting edges:	2
Number of guiding chamfers:	4
Tip angle:	135°
Helix angle:	30°



P 1 2 3 4 5 6 M 1 2 3 K 1 2 3 N 1 2 3 4 S 1 2 3 4 5 H 1 2 3

IT9 20xD HA DIN 6535

Stocked preferred series in shank form HA

Dimensions						L/d ratio	Shank form HA	
d_1 h7	d_2 h6	l_1	l_2	l_3	l_4		Specification	Order no.
3,00	4	110	74	70	32	23	SCD181-0300-2-4-135HA20-HU680	30392294
4,00	4	120	86	80	32	20	SCD181-0400-2-4-135HA20-HU680	30392296
5,00	5	145	109	102	34	20	SCD181-0500-2-4-135HA20-HU680	30392298
5,50	6	160	120	112	36	20	SCD181-0550-2-4-135HA20-HU680	30392299
6,00	6	170	130	121	36	20	SCD181-0600-2-4-135HA20-HU680	30392300
7,00	7	190	150	140	38	20	SCD181-0700-2-4-135HA20-HU680	30392301
8,00	8	215	173	161	40	20	SCD181-0800-2-4-135HA20-HU680	30392302
10,00	10	260	218	203	40	20	SCD181-1000-2-4-135HA20-HU680	30392304
12,00	12	305	258	240	45	20	SCD181-1200-2-4-135HA20-HU644	30392306

Recommendation for spotting drill:
For the spotting drill please use the MEGA-Drill-Alu (SCD131 - 3xD/5xD) with the same nominal diameter. The tip angle and diameter tolerances are matched for optimal functionality as well as for the interaction of spotting drill and deep drill.

Application notes for deep drilling can be found in the Technical Appendix chapter.

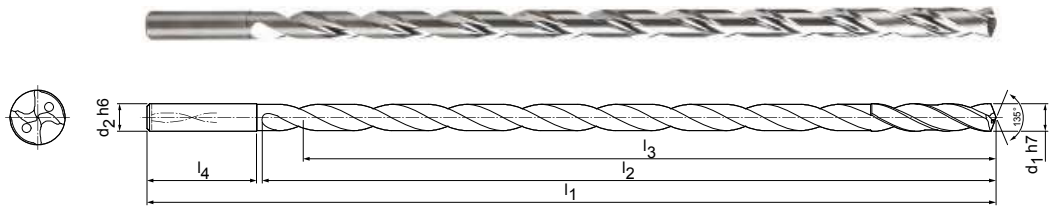
Dimensions in mm.
For cutting data recommendations, see end of chapter.
Special designs and other coatings available upon request.

MEGA-Deep-Drill-Alu

Solid carbide twist drill
SCD181 (25xD), internal coolant supply

Design:

Drill diameter:	3.00 – 10.00 mm
Bore tolerance:	≥ IT 9
Cutting material:	HU680
Number of cutting edges:	2
Number of guiding chamfers:	4
Tip angle:	135°
Helix angle:	30°



P 1 2 3 4 5 6 M 1 2 3 K 1 2 3 N 1 2 3 4 S 1 2 3 4 5 H 1 2 3

IT9 25xD HA DIN 6535

Stocked preferred series in shank form HA

Dimensions						L/d ratio	Shank form HA	
d_1 h7	d_2 h6	l_1	l_2	l_3	l_4		Specification	Order no.
3,00	4	125	91	87	32	29	SCD181-0300-2-4-135HA25-HU680	30392311
4,00	4	140	106	100	32	25	SCD181-0400-2-4-135HA25-HU680	30392313
5,00	5	170	134	127	34	25	SCD181-0500-2-4-135HA25-HU680	30392315
6,00	6	200	160	151	36	25	SCD181-0600-2-4-135HA25-HU680	30392317
7,00	7	225	185	175	38	25	SCD181-0700-2-4-135HA25-HU680	30392318
8,00	8	255	213	201	40	25	SCD181-0800-2-4-135HA25-HU680	30392319
10,00	10	310	268	253	40	25	SCD181-1000-2-4-135HA25-HU680	30392321

Recommendation for spotting drill:
For the spotting drill please use the MEGA-Drill-Alu (SCD131 - 3xD/5xD) with the same nominal diameter. The tip angle and diameter tolerances are matched for optimal functionality as well as for the interaction of spotting drill and deep drill.

Application notes for deep drilling can be found in the Technical Appendix chapter.

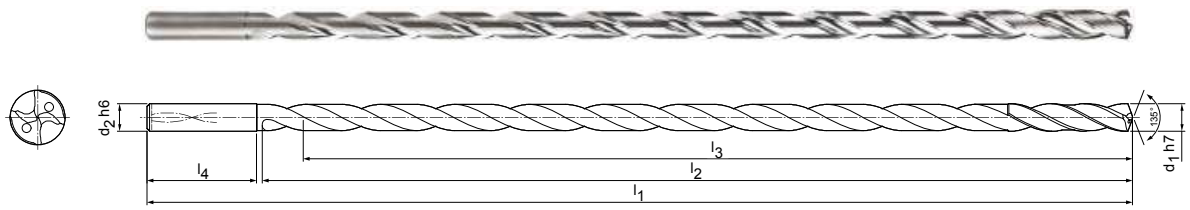
Dimensions in mm.
For cutting data recommendations, see end of chapter.
Special designs and other coatings available upon request.

MEGA-Deep-Drill-Alu

Solid carbide twist drill
SCD181 (30xD), internal coolant supply

Design:

Drill diameter:	4.00 - 6.00 mm
Bore tolerance:	≥ IT 9
Cutting material:	HU680
Number of cutting edges:	2
Number of guiding chamfers:	4
Tip angle:	135°
Helix angle:	30°



P 1 2 3 4 5 6 M 1 2 3 K 1 2 3 N 1 2 3 4 S 1 2 3 4 5 H 1 2 3

IT9 30xD HA DIN 6535

Stocked preferred series in shank form HA

Dimensions						L/d ratio	Shank form HA	
d_1 h7	d_2 h6	l_1	l_2	l_3	l_4		Specification	Order no.
4,00	4	160	126	120	32	30	SCD181-0400-2-4-135HA30-HU680	30392328
4,50	5	180	144	137	34	31	SCD181-0450-2-4-135HA30-HU680	30392329
5,00	5	195	159	152	34	30	SCD181-0500-2-4-135HA30-HU680	30392330
6,00	6	230	192	183	36	31	SCD181-0600-2-4-135HA30-HU680	30392332

Recommendation for spotting drill:
For the spotting drill please use the MEGA-Drill-Alu (SCD131 - 3xD/5xD) with the same nominal diameter. The tip angle and diameter tolerances are matched for optimal functionality as well as for the interaction of spotting drill and deep drill.

Application notes for deep drilling can be found in the Technical Appendix chapter.

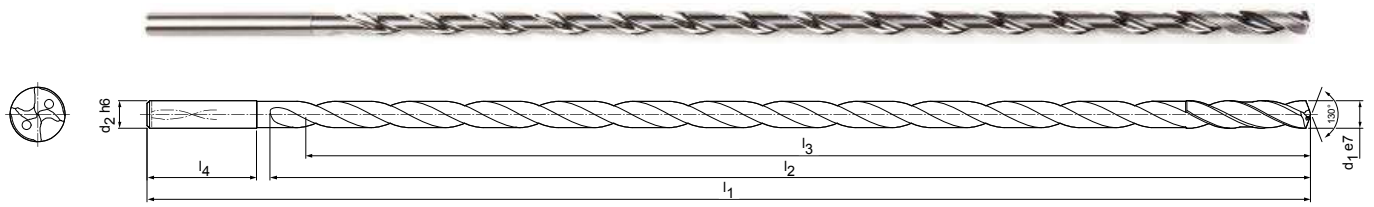
Dimensions in mm.
For cutting data recommendations, see end of chapter.
Special designs and other coatings available upon request.

MEGA-Deep-Drill-Alu

Solid carbide twist drill
SCD181 (40xD), internal coolant supply

Design:

Drill diameter:	6.00 - 7.00 mm
Bore tolerance:	≥ IT 9
Cutting material:	HU680
Number of cutting edges:	2
Number of guiding chamfers:	4
Tip angle:	130°
Helix angle:	30°



P 1 2 3 4 5 6 M 1 2 3 K 1 2 3 N 1 2 3 4 S 1 2 3 4 5 H 1 2 3

IT9 40xD HA DIN 6535

Stocked preferred series in shank form HA

Dimensions						L/d ratio	Shank form HA	
d_1 h7	d_2 h6	l_1	l_2	l_3	l_4		Specification	Order no.
6,00	6	290	250	241	36	42	SCD181-0600-2-4-130HA40-HU680	30549881
7,00	7	330	290	280	38	41	SCD181-0700-2-4-130HA40-HU680	30549882

Recommendation for spotting drill:
For the spotting drill please use the MEGA-Drill-Alu (SCD131 - 3xD/5xD) with the same nominal diameter. The tip angle and diameter tolerances are matched for optimal functionality as well as for the interaction of spotting drill and deep drill.

Application notes for deep drilling can be found in the Technical Appendix chapter.

Dimensions in mm.
For cutting data recommendations, see end of chapter.
Special designs and other coatings available upon request.

Cutting data recommendations for deep drills

Feed and cutting speed

MEGA-Pilot-Drill | SCD581

MMG*			Workpiece material	Strength/hardness [N/mm²] [HRC]
P	P1	P1.1	Structural, free-cutting, case hardened and heat-treated steels, non-alloy	< 700
		P1.2	Structural, free-cutting, case hardened and heat-treated steels, non-alloy	< 1,200
	P2	P2.1	Nitrided, case hardened and heat-treated steels, alloy	< 900
		P2.2	Nitrided, case hardened and heat-treated steels, alloy	< 1,400
	P3	P3.1	Tool, bearing, spring and high-speed steels**	< 800
		P3.2	Tool, bearing, spring and high-speed steels**	< 1,000
		P3.3	Tool, bearing, spring and high-speed steels**	< 1,500
	P5	P5.1	Cast steel	
M	M1	M1.1	Stainless steels, austenitic	< 700
		M1.2	Stainless steels, ferritic/austenitic (duplex)	< 1,000
K	K1	K1.1	Cast iron with lamellar graphite (grey cast iron), GJL	< 300
	K2	K2.1	Cast iron with spheroidal graphite, GJS	< 500
		K2.2	Cast iron with spheroidal graphite, GJS	≤ 800
		K2.3	Cast iron with spheroidal graphite, GJS	> 800
	K3	K3.1	Cast iron with spheroidal graphite, GJV; malleable cast iron, GJM	< 500
		K3.2	Cast iron with spheroidal graphite, GJV; malleable cast iron, GJM	> 500

* MAPAL machining groups

** If the alloy parts Cr, Mo, Ni, V, W in total > 8% then select the next highest MAPAL machining group.

Cutting speed v_c [m/min]				Feed f [mm] for drill diameter					
Internal cooling	External cooling	MQL	Air	1.00	1.20	1.60	1.90	2.40	3.00
80	**70**	**70**		0.05	0.06	0.06	0.07	0.08	0.09
70	**60**	**60**		0.07	0.07	0.08	0.09	0.10	0.11
80	**70**	**70**		0.06	0.07	0.08	0.08	0.10	0.11
55	**50**	**50**		0.06	0.06	0.07	0.07	0.08	0.09
60	**50**	**50**		0.06	0.06	0.07	0.07	0.08	0.10
50	**45**	**45**		0.05	0.05	0.06	0.07	0.07	0.08
50	**35**	**40**		0.05	0.05	0.05	0.06	0.06	0.07
80	**70**	**70**		0.06	0.07	0.08	0.08	0.10	0.11
45	**30**	**30**		0.04	0.04	0.05	0.05	0.06	0.06
95	**70**	**70**	**70**	0.06	0.07	0.08	0.09	0.10	0.12
130	**80**	**95**	**95**	0.07	0.07	0.08	0.09	0.11	0.13
80	**60**	**60**		0.06	0.07	0.08	0.09	0.10	0.11
70	**65**	**65**		0.07	0.08	0.08	0.09	0.11	0.12
65	**55**	**55**		0.06	0.07	0.08	0.08	0.09	0.11

The specified cutting values are guide values.
The optimum data for the respective machining task should be determined during the test or machining.

Cutting data recommendations for deep drills

Feed and cutting speed

MEGA-Deep-Drill | SCD171

MMG*			Workpiece material	Strength/hardness [N/mm²] [HRC]
P	P1	P1.1	Structural, free-cutting, case hardened and heat-treated steels, non-alloy	< 700
		P1.2	Structural, free-cutting, case hardened and heat-treated steels, non-alloy	< 1,200
	P2	P2.1	Nitrided, case hardened and heat-treated steels, alloy	< 900
		P2.2	Nitrided, case hardened and heat-treated steels, alloy	< 1,400
	P3	P3.1	Tool, bearing, spring and high-speed steels**	< 800
		P3.2	Tool, bearing, spring and high-speed steels**	< 1,000
		P3.3	Tool, bearing, spring and high-speed steels**	< 1,500
	P5	P5.1	Cast steel	
K	K1	K1.1	Cast iron with lamellar graphite (grey cast iron), GJL	< 300
	K2	K2.1	Cast iron with spheroidal graphite, GJS	< 500
		K2.2	Cast iron with spheroidal graphite, GJS	≤ 800
		K2.3	Cast iron with spheroidal graphite, GJS	> 800
	K3	K3.1	Cast iron with spheroidal graphite, GJV; malleable cast iron, GJM	< 500
		K3.2	Cast iron with spheroidal graphite, GJV; malleable cast iron, GJM	> 500

MEGA-Deep-Drill-Alu | SCD181

MMG*			Workpiece material	Strength/hardness [N/mm²] [HRC]
N	N1	N1.1	Aluminium, non-alloy and alloy < 3 % Si	
		N1.2	Aluminium, alloy ≤ 7 % Si	
		N1.3	Aluminium, alloy > 7-12 % Si	
		N1.4	Aluminium, alloy > 12 % Si	
	N2	N2.1	Copper, non-alloy and low-alloy	< 300
		N2.2	Copper, alloy	> 300
		N2.3	Brass, bronze, gunmetal	< 1,200

* MAPAL machining groups

** If the alloy parts Cr, Mo, Ni, V, W in total > 8% then select the next highest MAPAL machining group.

Cutting speed v_c [m/min]				Feed f [mm] for drill diameter					
Internal cooling	External cooling	MQL	Air	1.00	2.00	4.00	6.00	9.00	16.00
90	**80**	**80**		0.04	0.06	0.09	0.13	0.19	0.27
80	**70**	**70**		0.06	0.08	0.11	0.16	0.24	0.34
90	**75**	**75**		0.05	0.07	0.10	0.16	0.23	0.32
65	**55**	**55**		0.05	0.07	0.09	0.13	0.18	0.25
70	**60**	**60**		0.05	0.06	0.09	0.14	0.21	0.29
55	**50**	**50**		0.04	0.06	0.08	0.12	0.17	0.23
55	**40**	**45**		0.04	0.05	0.07	0.09	0.13	0.18
90	**75**	**75**		0.05	0.07	0.10	0.16	0.23	0.32
110	**75**	**75**	**75**	0.14	0.18	0.25	0.32	0.41	0.53
145	**90**	**110**	**110**	0.14	0.18	0.24	0.30	0.38	0.49
90	**70**	**70**		0.13	0.16	0.21	0.26	0.33	0.42
55	**35**	**45**		0.10	0.12	0.14	0.18	0.22	0.28
80	**70**	**70**		0.14	0.18	0.22	0.28	0.36	0.46
70	**65**	**65**		0.12	0.15	0.18	0.23	0.29	0.36

Cutting speed v_c [m/min]				Feed f [mm] for drill diameter					
Internal cooling	External cooling	MQL	Air	3.00	4.00	5.50	7.50	10.50	16.00
300	**200**	**250**		0.11	0.13	0.16	0.20	0.25	0.32
250	**180**	**200**		0.13	0.16	0.21	0.26	0.33	0.42
220	**150**	**180**		0.13	0.16	0.21	0.26	0.33	0.42
180	**120**	**150**		0.13	0.16	0.21	0.26	0.33	0.42
140	**100**			0.09	0.11	0.14	0.17	0.21	0.27
120	**90**			0.11	0.14	0.17	0.22	0.28	0.35
200	**160**	**160**	**120**	0.14	0.18	0.25	0.32	0.41	0.53

The specified cutting values are guide values.
The optimum data for the respective machining task should be determined during the test or machining.