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Your technology partner for cost-effective machining

MEGA-Deep-Drill

MEGA-Deep-Drill

Efficient deep drilling up to 40xD

The new MEGA-Deep-Drill is a deep drill for highly efficient deep drilling applications on steel, cast-iron and aluminium materials. Due to its innovative geometrical and cutting material design, the deep drill is ideally adapted to high feed rates and maximum productivity in bore machining up to 40xD.

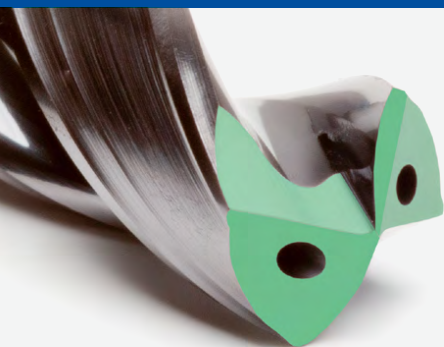
The spherical cutting edge and the optimised core diameter profile result in excellent cutting properties with maximum stability. The cooling channel diameters were enlarged by approx. 20% to ensure optimal cooling of the

main cutters and cutting edges as well as improved chip removal. The deep drill is suitable for emulsion and MQL on machining centres with a coolant pressure of 10–40 bar.

The four margin lands ensure exact boring accuracy and a very low bore pattern. The adapted guide length and the widened rear margin lands ensure maximum guiding accuracy even with inclined bore outlets. With its smooth surface, the innovative head coating enables maximum tool life and ensures smooth chip flow.



✓ HIGH WEAR RESISTANCE



Good cutting properties, short chips

- Spherical main cutter

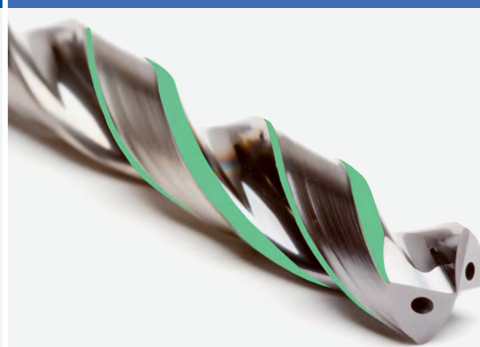
Maximum tool life

- Innovative cutting material

Maximum stability

- Perfectly adapted core diameter profile

⚙️ PROCESS RELIABILITY



Exact boring accuracy

- Thanks to four margin lands

Very low bore pattern

- Thanks to the larger circumference surface area of the rear chamfers

Maximum guiding accuracy even with angled bore outlets

- Ideal length of margin lands



Steel workpiece materials



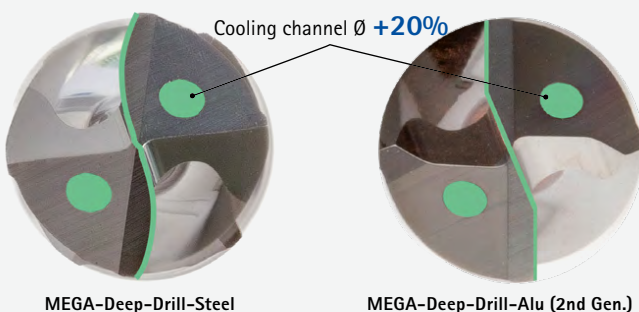
Cast-iron workpiece materials



Aluminium



MAXIMUM PRODUCTIVITY



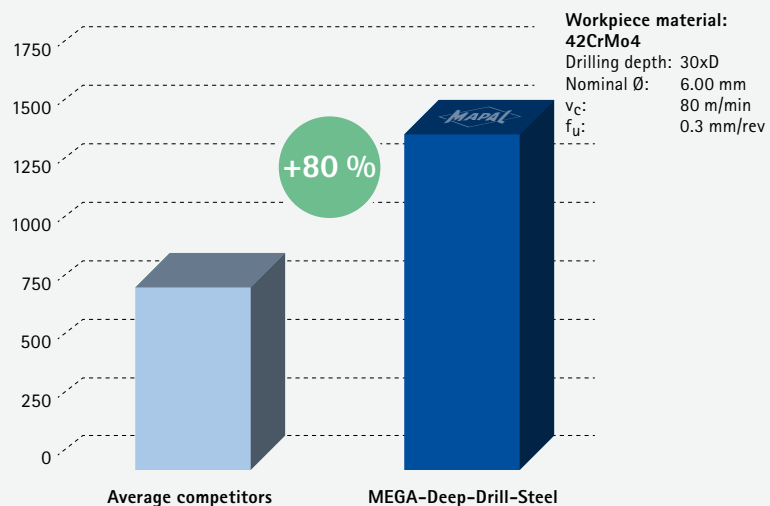
Good cutting properties and maximum feed rates

- Maximum cooling power
- Maximum cutting stability

Ideal chip removal

- Tightly rolled chips

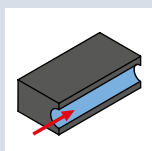
Maximum tool life according to the number of bores



PRODUCT OVERVIEW

High performance in steel, cast iron and aluminium

Application



Deep drilling

Product category



Expert Line: Specialist tools for select applications, maximum precision and productivity.

Bore tolerance

IT9

Maximum achievable bore tolerance $\geq IT$

Product portfolio

MEGA-Deep-Drill-Steel



Material suitability:

P **K**

Drilling depth:

15xD 20xD 25xD 30xD 40xD

» From page 6

MEGA-Deep-Drill-Alu (2. Gen)



Material suitability:

N

Drilling depth:

15xD 20xD 25xD 30xD 40xD

» From page 11

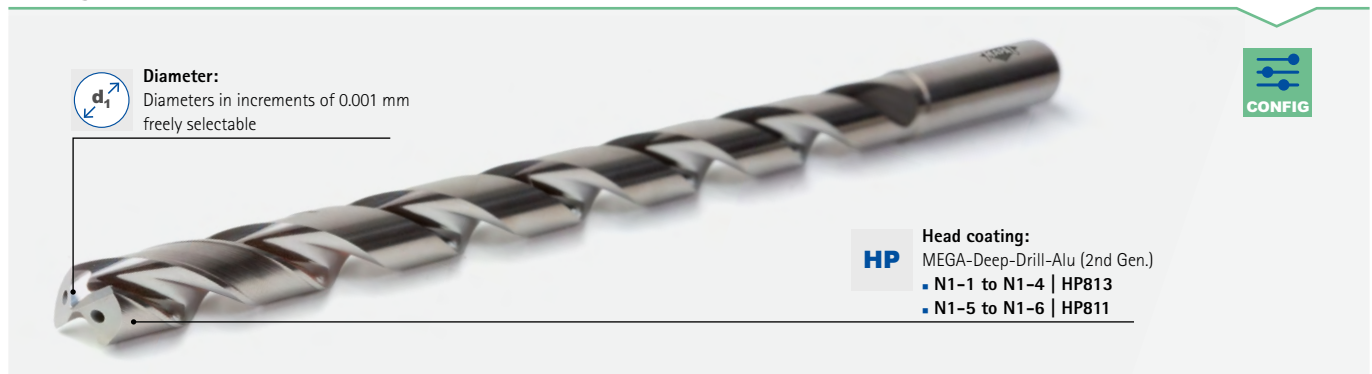
CONFIGURATION

Deep drill configuration – quick, simple and productive

Design your own tool, made to measure

- Do you require a different tool diameter?
- Customise your tool according to your needs.
- Simply choose a suitable series and the desired features.

Configurable features



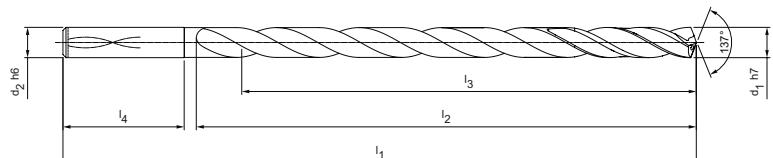
Dimensions of configurable MEGA-Deep-Drill series

Example: (1) MEGA-Deep-Drill-Steel SCD701 in 20xD | (2) bore diameter 4.950 mm

	d ₁ min.	d ₁ max.	d ₂ h6	Series															l ₄
				15xD			1 20xD			25xD			30xD			40xD			
				l ₁	l ₂	l ₃	l ₁	l ₂	l ₃	l ₁	l ₂	l ₃	l ₁	l ₂	l ₃	l ₁	l ₂	l ₃	
	3,000	3,499	4,00	90	58	52	108	76	70	125	93	87	143	111	105	178	146	140	28
	3,500	4,000	4,00	98	66	60	118	86	80	138	106	100	158	126	120	198	166	160	28
	4,001	4,500	5,00	107	75	68	129	97	90	152	120	113	174	142	135	219	187	180	28
2	4,501	5,000	5,00	115	83	75	140	108	100	165	133	125	190	158	150	240	208	200	28
	5,001	5,500	6,00	131	91	83	159	119	110	186	146	138	214	174	165	269	229	220	36
	5,501	6,000	6,00	139	99	90	169	129	120	199	159	150	229	189	180	289	249	240	36
	6,001	7,000	8,00	156	116	105	191	151	140	226	186	175	261	221	210	331	291	280	36
	7,001	8,000	8,00	172	132	120	212	172	160	252	212	200	292	252	240	372	332	320	36
	8,001	9,000	10,00	193	149	135	238	194	180	283	239	225	328	284	270	418	374	360	40
	9,001	10,000	10,00	209	165	150	259	215	200	309	265	250	359	315	300	-	-	-	40
	10,001	11,000	12,00	231	182	165	286	237	220	341	292	275	396	347	330	-	-	-	45
	11,001	12,000	12,00	247	198	180	307	258	240	367	318	300	427	378	360	-	-	-	45
	12,001	13,000	14,00	264	215	195	329	280	260	394	345	325	-	-	-	-	-	-	45
	13,001	14,000	14,00	280	231	210	350	301	280	420	371	350	-	-	-	-	-	-	45
	14,001	15,000	16,00	300	248	225	375	323	300	-	-	-	-	-	-	-	-	-	48
	15,001	16,000	16,00	316	264	240	396	344	320	-	-	-	-	-	-	-	-	-	48

Example:
SCD701-04950-2-3-137HA20-HP400

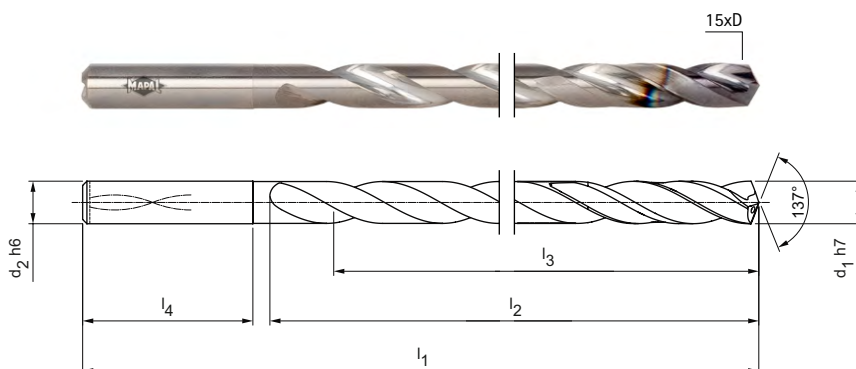
Tool diameter d₁ = 4.950 mm



MEGA-Deep-Drill-Steel

Solid carbide twist drill

SCD701 (15xD), internal coolant supply



Design:

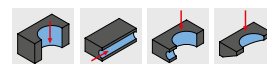
Drill diameter: 3.000 - 16.000 mm
 Shank form: HA
 Cutting material: HP400
 Number of cutting edges: 2
 Tip angle: 137°
 Helix angle: 30°



Configurable features:



Application:



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

Dimensions						Shank form HA	
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order no.
3,000	4	90	58	52,5	28	SCD701-03000-2-4-137HA15-HP400	31459705
3,500	4	98	66	60	28	SCD701-03500-2-4-137HA15-HP400	31459706
4,000	4	98	66	60	28	SCD701-04000-2-4-137HA15-HP400	31459707
4,500	5	107	75	67,5	28	SCD701-04500-2-4-137HA15-HP400	31459708
5,000	5	115	83	75	28	SCD701-05000-2-4-137HA15-HP400	31459709
5,500	6	131	91	82,5	36	SCD701-05500-2-4-137HA15-HP400	31459720
6,000	6	139	99	90	36	SCD701-06000-2-4-137HA15-HP400	31459721
7,000	8	156	116	105	36	SCD701-07000-2-4-137HA15-HP400	31459722
8,000	8	172	132	120	36	SCD701-08000-2-4-137HA15-HP400	31459723
8,900	10	193	149	135	40	SCD701-08900-2-4-137HA15-HP400	31501733
9,000	10	193	149	135	40	SCD701-09000-2-4-137HA15-HP400	31459724
9,500	10	209	165	150	40	SCD701-09500-2-4-137HA15-HP400	31459725
10,000	10	209	165	150	40	SCD701-10000-2-4-137HA15-HP400	31459726
11,000	12	231	182	165	45	SCD701-11000-2-4-137HA15-HP400	31459727
12,000	12	247	198	180	45	SCD701-12000-2-4-137HA15-HP400	31459728
14,000	14	280	231	210	45	SCD701-14000-2-4-137HA15-HP400	31459730

Recommendation for pilot drill:

Please use the **MEGA-Drill-Steel-Plus (SCD600, SCD601)** with the same nominal diameter for the pilot drill.

The point angle and diameter tolerances are matched for optimal functionality as well as for the interaction of pilot drill and deep drill.

Dimensions in mm.

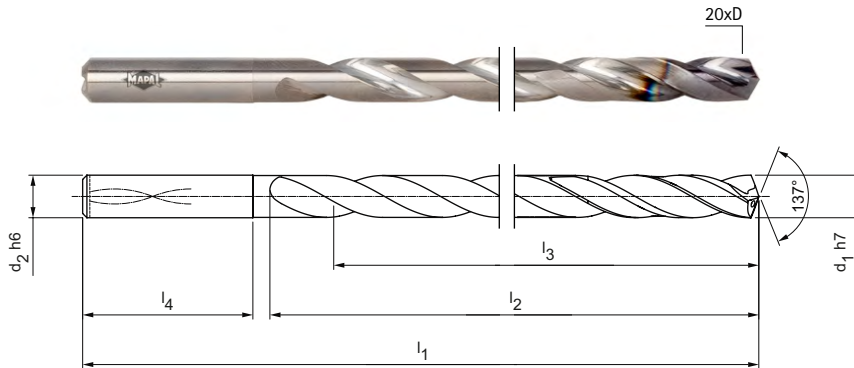
For cutting data recommendations, see end of chapter.

For recommended pilot drill, see page 18.

MEGA-Deep-Drill-Steel

Solid carbide twist drill

SCD701 (20xD), internal coolant supply



Design:

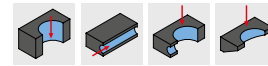
Drill diameter:	3.000 - 16.000 mm
Shank form:	HA
Cutting material:	HP400
Number of cutting edges:	2
Tip angle:	137°
Helix angle:	30°



Configurable features:



Application:



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

Dimensions						Shank form HA	
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order no.
3,000	4	108	76	70	28	SCD701-03000-2-4-137HA20-HP400	31459733
3,500	4	118	86	80	28	SCD701-03500-2-4-137HA20-HP400	31459734
4,000	4	118	86	80	28	SCD701-04000-2-4-137HA20-HP400	31459735
4,500	5	129	97	90	28	SCD701-04500-2-4-137HA20-HP400	31459736
5,000	5	140	108	100	28	SCD701-05000-2-4-137HA20-HP400	31459737
5,100	6	159	119	110	36	SCD701-05100-2-4-137HA20-HP400	31492475
5,500	6	159	119	110	36	SCD701-05500-2-4-137HA20-HP400	31459738
6,000	6	169	129	120	36	SCD701-06000-2-4-137HA20-HP400	31459739
6,500	8	191	151	140	36	SCD701-06500-2-4-137HA20-HP400	31459740
7,000	8	191	151	140	36	SCD701-07000-2-4-137HA20-HP400	31459741
8,000	8	212	172	160	36	SCD701-08000-2-4-137HA20-HP400	31459742
9,000	10	238	194	180	40	SCD701-09000-2-4-137HA20-HP400	31459743
10,000	10	259	215	200	40	SCD701-10000-2-4-137HA20-HP400	31459744
11,000	12	286	237	220	45	SCD701-11000-2-4-137HA20-HP400	31459745
12,000	12	307	258	240	45	SCD701-12000-2-4-137HA20-HP400	31459746
13,000	14	329	280	260	45	SCD701-13000-2-4-137HA20-HP400	31459747
14,000	14	350	301	280	45	SCD701-14000-2-4-137HA20-HP400	31459748

Recommendation for pilot drill:

Please use the **MEGA-Drill-Steel-Plus (SCD600, SCD601)** with the same nominal diameter for the pilot drill.

The point angle and diameter tolerances are matched for optimal functionality as well as for the interaction of pilot drill and deep drill.

Dimensions in mm.

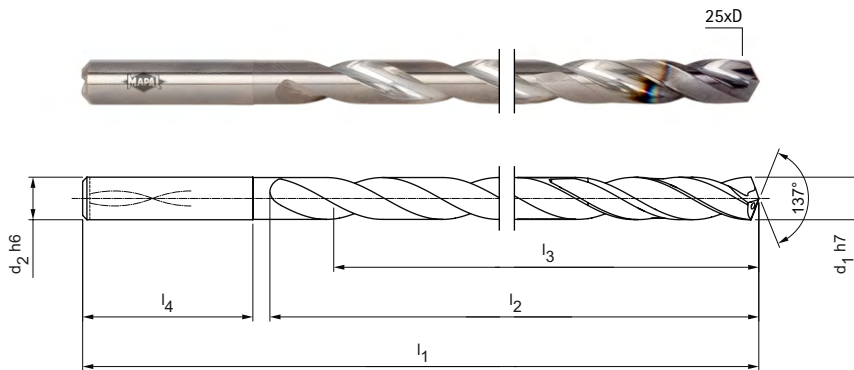
For cutting data recommendations, see end of chapter.

For recommended pilot drill, see page 18.

MEGA-Deep-Drill-Steel

Solid carbide twist drill

SCD701 (25xD), internal coolant supply



Design:

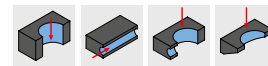
Drill diameter:	3.000 - 14.000 mm
Shank form:	HA
Cutting material:	HP400
Number of cutting edges:	2
Tip angle:	137°
Helix angle:	30°



Configurable features:



Application:



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

Dimensions						Shank form HA	
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order no.
3,000	4	125	93	87,5	28	SCD701-03000-2-4-137HA25-HP400	31459751
3,500	4	138	106	100	28	SCD701-03500-2-4-137HA25-HP400	31459752
4,000	4	138	106	100	28	SCD701-04000-2-4-137HA25-HP400	31459753
4,500	5	152	120	112,5	28	SCD701-04500-2-4-137HA25-HP400	31459754
5,000	5	165	133	125	28	SCD701-05000-2-4-137HA25-HP400	31459755
5,500	6	186	146	137,5	36	SCD701-05500-2-4-137HA25-HP400	31459756
6,000	6	199	159	150	36	SCD701-06000-2-4-137HA25-HP400	31459757
7,000	8	226	186	175	36	SCD701-07000-2-4-137HA25-HP400	31459758
8,000	8	252	212	200	36	SCD701-08000-2-4-137HA25-HP400	31459759
9,000	10	283	239	225	40	SCD701-09000-2-4-137HA25-HP400	31459760
10,000	10	309	265	250	40	SCD701-10000-2-4-137HA25-HP400	31459761
11,000	12	341	292	275	45	SCD701-11000-2-4-137HA25-HP400	31459762

Recommendation for pilot drill:

Please use the **MEGA-Drill-Steel-Plus (SCD600, SCD601)** with the same nominal diameter for the pilot drill.

The point angle and diameter tolerances are matched for optimal functionality as well as for the interaction of pilot drill and deep drill.

Dimensions in mm.

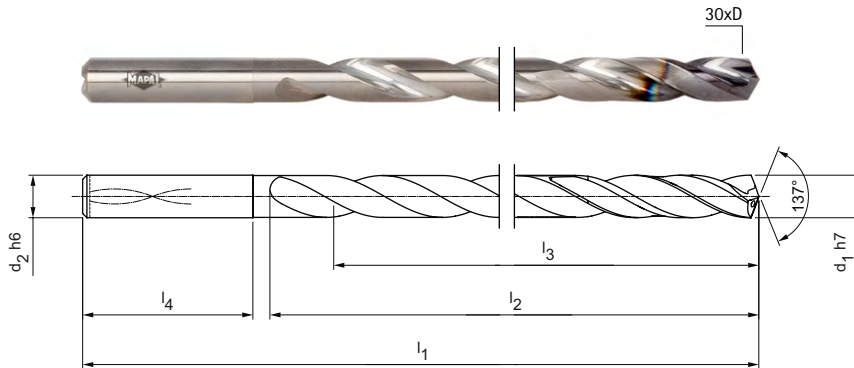
For cutting data recommendations, see end of chapter.

For recommended pilot drill, see page 18.

MEGA-Deep-Drill-Steel

Solid carbide twist drill

SCD701 (30xD), internal coolant supply



Design:

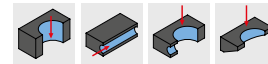
Drill diameter:	3.000 - 12.000 mm
Shank form:	HA
Cutting material:	HP400
Number of cutting edges:	2
Tip angle:	137°
Helix angle:	30°



Configurable features:



Application:



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

Dimensions						Shank form HA	
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order no.
3,000	4	143	111	105	28	SCD701-03000-2-4-137HA30-HP400	31459766
3,500	4	158	126	120	28	SCD701-03500-2-4-137HA30-HP400	31459767
4,000	4	158	126	120	28	SCD701-04000-2-4-137HA30-HP400	31459768
4,500	5	174	142	135	28	SCD701-04500-2-4-137HA30-HP400	31459769
5,000	5	190	158	150	28	SCD701-05000-2-4-137HA30-HP400	31459770
5,500	6	214	174	165	36	SCD701-05500-2-4-137HA30-HP400	31459771
6,000	6	229	189	180	36	SCD701-06000-2-4-137HA30-HP400	31459772
6,500	8	261	221	210	36	SCD701-06500-2-4-137HA30-HP400	31459773
7,000	8	261	221	210	36	SCD701-07000-2-4-137HA30-HP400	31459774
8,000	8	292	252	240	36	SCD701-08000-2-4-137HA30-HP400	31459775
9,000	10	328	284	270	40	SCD701-09000-2-4-137HA30-HP400	31459776
10,000	10	359	315	300	40	SCD701-10000-2-4-137HA30-HP400	31459777

Recommendation for pilot drill:

Please use the **MEGA-Drill-Steel-Plus (SCD600, SCD601)** with the same nominal diameter for the pilot drill.

The point angle and diameter tolerances are matched for optimal functionality as well as for the interaction of pilot drill and deep drill.

Dimensions in mm.

For cutting data recommendations, see end of chapter.

For recommended pilot drill, see page 18.

MEGA-Deep-Drill-Steel

Solid carbide twist drill
SCD701 (40xD), internal coolant supply

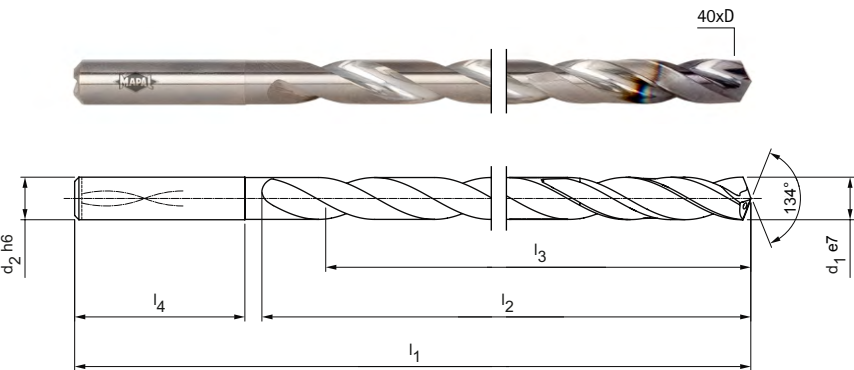
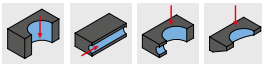
Design:
Drill diameter: 3.000 - 9.000 mm
Shank form: HA
Cutting material: HP400
Number of cutting edges: 2
Tip angle: 134°
Helix angle: 30°



Configurable features:



Application:



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

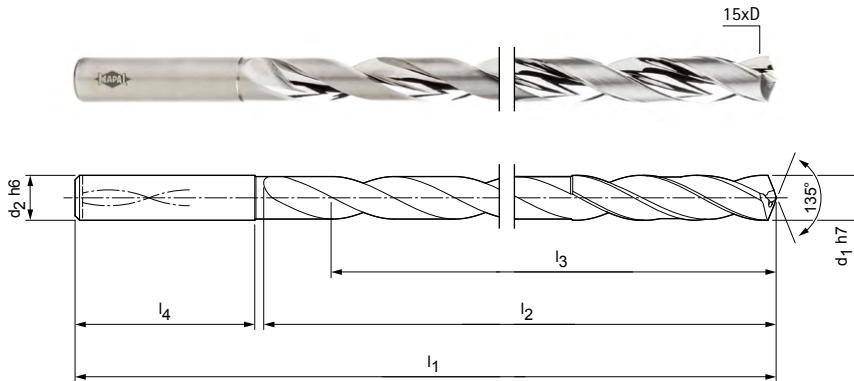
Dimensions						Shank form HA	
d ₁ e7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order no.
3,000	4	178	146	140	28	SCD701-03000-2-4-134HA40-HP400	31459780
3,500	4	198	166	160	28	SCD701-03500-2-4-134HA40-HP400	31459781
4,000	4	198	166	160	28	SCD701-04000-2-4-134HA40-HP400	31459782
4,500	5	219	187	180	28	SCD701-04500-2-4-134HA40-HP400	31459783
5,000	5	240	208	200	28	SCD701-05000-2-4-134HA40-HP400	31459784
6,000	6	289	249	240	36	SCD701-06000-2-4-134HA40-HP400	31459785
7,000	8	331	291	280	36	SCD701-07000-2-4-134HA40-HP400	31459786
8,000	8	372	332	320	36	SCD701-08000-2-4-134HA40-HP400	31459787

Recommendation for pilot drill:
Please use the **MEGA-Deep-Drill-Steel (SCD701 – 30xD)** with the same nominal diameter for the pilot drill.
The point angle and diameter tolerances are matched for optimal functionality as well as for the interaction of pilot drill and deep drill.

Dimensions in mm.
For cutting data recommendations, see end of chapter.
For recommended pilot drill, see page 18.

MEGA-Deep-Drill-Alu (2nd Gen.)

Solid carbide twist drill
SCD182 (15xD), internal coolant supply



Design:

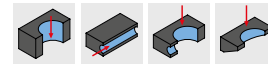
Drill diameter: 3.000 - 16.000 mm
Cutting material: HU318
Number of cutting edges: 2
Number of margin lands: 4
Tip angle: 135°
Helix angle: 30°



Configurable features:



Application:



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

Dimensions						Shank form HA	
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order no.
3,000	4	90	58	52	28	SCD182-03000-2-4-135HA15-HU318	31660444
3,500	4	98	66	60	28	SCD182-03500-2-4-135HA15-HU318	31660445
4,000	4	98	66	60	28	SCD182-04000-2-4-135HA15-HU318	31660446
4,500	5	107	75	68	28	SCD182-04500-2-4-135HA15-HU318	31660447
5,000	5	115	83	75	28	SCD182-05000-2-4-135HA15-HU318	31660448
5,500	6	131	91	83	36	SCD182-05500-2-4-135HA15-HU318	31660449
6,000	6	139	99	90	36	SCD182-06000-2-4-135HA15-HU318	31660510
7,000	8	156	116	105	36	SCD182-07000-2-4-135HA15-HU318	31660511
8,000	8	172	132	120	36	SCD182-08000-2-4-135HA15-HU318	31660512
9,000	10	193	149	135	40	SCD182-09000-2-4-135HA15-HU318	31660513
9,500	10	209	165	150	40	SCD182-09500-2-4-135HA15-HU318	31660514
10,000	10	209	165	150	40	SCD182-10000-2-4-135HA15-HU318	31660515
11,000	12	231	182	165	45	SCD182-11000-2-4-135HA15-HU318	31660516
12,000	12	247	198	180	45	SCD182-12000-2-4-135HA15-HU318	31660517
13,000	14	264	215	195	45	SCD182-13000-2-4-135HA15-HU318	31660518
14,000	14	280	231	210	45	SCD182-14000-2-4-135HA15-HU318	31660519
15,000	16	300	248	225	48	SCD182-15000-2-4-135HA15-HU318	31660520
16,000	16	316	264	240	48	SCD182-16000-2-4-135HA15-HU318	31660521

Recommendation for pilot drill:

For the pilot drill, please use the **MEGA-Drill-Alu (SCD131 - 3xD/5xD)**

Select nominal diameter that is **0.02 mm** larger.

The point angle and diameter tolerances are matched for optimal functionality as well as for the interaction of pilot drill and deep drill.

Dimensions in mm.

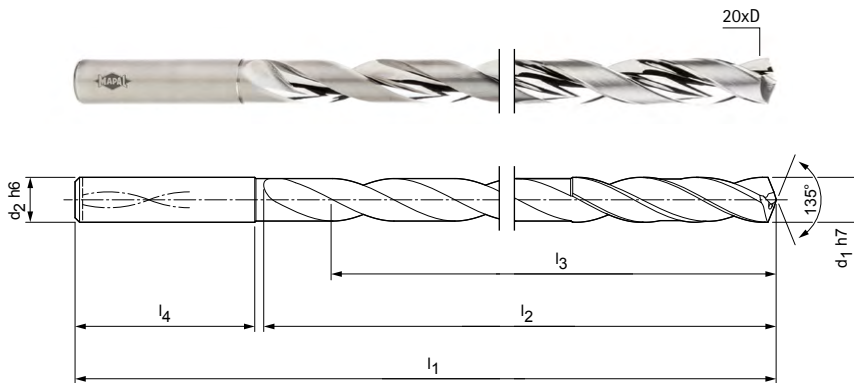
For cutting data recommendations, see end of chapter.

Special designs and other coatings available upon request.

MEGA-Deep-Drill-Alu (2nd Gen.)

Solid carbide twist drill

SCD182 (20xD), internal coolant supply



Design:

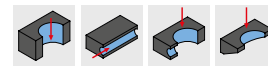
Drill diameter: 3.000 - 16.000 mm
 Cutting material: HU318
 Number of cutting edges: 2
 Number of margin lands: 4
 Tip angle: 135°
 Helix angle: 30°



Configurable features:



Application:



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

Dimensions						Shank form HA	
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order no.
3,000	4	108	76	70	28	SCD182-03000-2-4-135HA20-HU318	31660522
3,500	4	118	86	80	28	SCD182-03500-2-4-135HA20-HU318	31660523
4,000	4	118	86	80	28	SCD182-04000-2-4-135HA20-HU318	31660524
4,500	5	129	97	90	28	SCD182-04500-2-4-135HA20-HU318	31660525
5,000	5	140	108	100	28	SCD182-05000-2-4-135HA20-HU318	31660526
5,500	6	159	119	110	36	SCD182-05500-2-4-135HA20-HU318	31660527
6,000	6	169	129	120	36	SCD182-06000-2-4-135HA20-HU318	31660528
6,500	8	191	151	140	36	SCD182-06500-2-4-135HA20-HU318	31660529
7,000	8	191	151	140	36	SCD182-07000-2-4-135HA20-HU318	31660530
8,000	8	212	172	160	36	SCD182-08000-2-4-135HA20-HU318	31660531
9,000	10	238	194	180	40	SCD182-09000-2-4-135HA20-HU318	31660532
10,000	10	259	215	200	40	SCD182-10000-2-4-135HA20-HU318	31660533
11,000	12	286	237	220	45	SCD182-11000-2-4-135HA20-HU318	31660534
12,000	12	307	258	240	45	SCD182-12000-2-4-135HA20-HU318	31660535
13,000	14	329	280	260	45	SCD182-13000-2-4-135HA20-HU318	31660536
14,000	14	350	301	280	45	SCD182-14000-2-4-135HA20-HU318	31660537
15,000	16	375	323	300	48	SCD182-15000-2-4-135HA20-HU318	31660538
16,000	16	396	344	320	48	SCD182-16000-2-4-135HA20-HU318	31660539

Recommendation for pilot drill:

For the pilot drill, please use the **MEGA-Drill-Alu (SCD131 - 3xD/5xD)**

Select nominal diameter that is **0.02 mm** larger.

The point angle and diameter tolerances are matched for optimal functionality as well as for the interaction of pilot drill and deep drill.

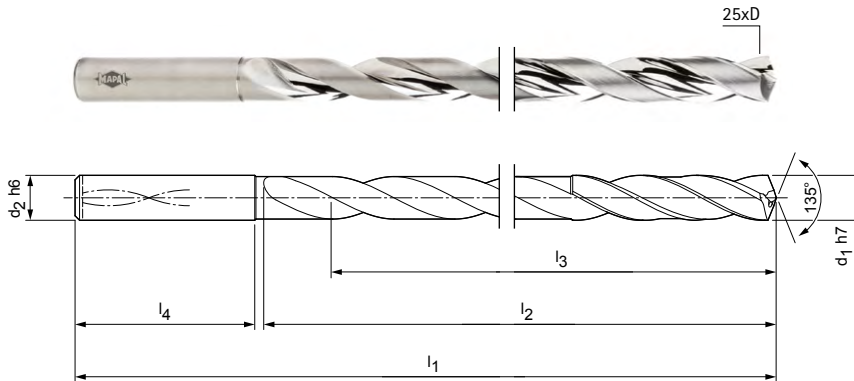
Dimensions in mm.

For cutting data recommendations, see end of chapter.

Special designs and other coatings available upon request.

MEGA-Deep-Drill-Alu (2nd Gen.)

Solid carbide twist drill
SCD182 (25xD), internal coolant supply



Design:

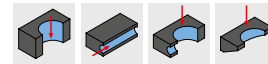
Drill diameter: 3.000 - 14.000 mm
Cutting material: HU318
Number of cutting edges: 2
Number of margin lands: 4
Tip angle: 135°
Helix angle: 30°



Configurable features:



Application:



P	1	2	3	4	5	M	1	2	3	K	1	2	3	4	5	N	1	2	3	4	5	S	1	2	3	4	H	1	2	3	C	1	2	3	4	5
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Dimensions						Shank form HA	
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order no.
3,000	4	125	93	87	28	SCD182-03000-2-4-135HA25-HU318	31660540
3,500	4	138	106	100	28	SCD182-03500-2-4-135HA25-HU318	31660541
4,000	4	138	106	100	28	SCD182-04000-2-4-135HA25-HU318	31660542
4,500	5	152	120	113	28	SCD182-04500-2-4-135HA25-HU318	31660543
5,000	5	165	133	125	28	SCD182-05000-2-4-135HA25-HU318	31660544
5,500	6	186	146	138	36	SCD182-05500-2-4-135HA25-HU318	31660545
6,000	6	199	159	150	36	SCD182-06000-2-4-135HA25-HU318	31660546
7,000	8	226	186	175	36	SCD182-07000-2-4-135HA25-HU318	31660547
8,000	8	252	212	200	36	SCD182-08000-2-4-135HA25-HU318	31660548
9,000	10	283	239	225	40	SCD182-09000-2-4-135HA25-HU318	31660549
10,000	10	309	265	250	40	SCD182-10000-2-4-135HA25-HU318	31660550
11,000	12	341	292	275	45	SCD182-11000-2-4-135HA25-HU318	31660551
12,000	12	367	318	300	45	SCD182-12000-2-4-135HA25-HU318	31660552
13,000	14	394	345	325	45	SCD182-13000-2-4-135HA25-HU318	31660553
14,000	14	420	371	350	45	SCD182-14000-2-4-135HA25-HU318	31660554

Recommendation for pilot drill:

For the pilot drill, please use the **MEGA-Drill-Alu (SCD131 - 3xD/5xD)**

Select nominal diameter that is **0.02 mm** larger.

The point angle and diameter tolerances are matched for optimal functionality as well as for the interaction of pilot drill and deep drill.

Dimensions in mm.

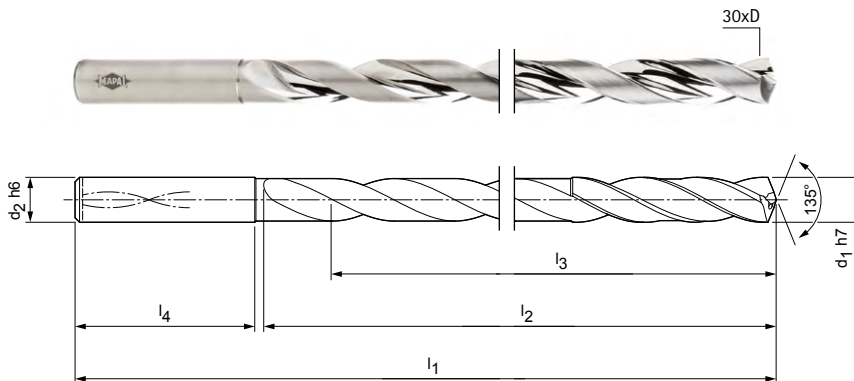
For cutting data recommendations, see end of chapter.

Special designs and other coatings available upon request.

MEGA-Deep-Drill-Alu (2nd Gen.)

Solid carbide twist drill

SCD182 (30xD), internal coolant supply



Design:

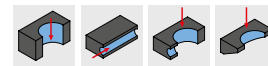
Drill diameter: 3.000 - 12.000 mm
 Cutting material: HU318
 Number of cutting edges: 2
 Number of margin lands: 4
 Tip angle: 135°
 Helix angle: 30°



Configurable features:



Application:



P	1	2	3	4	5	M	1	2	3	K	1	2	3	4	5	N	1	2	3	4	5	S	1	2	3	4	H	1	2	3	C	1	2	3	4	5
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Dimensions						Shank form HA	
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order no.
3,000	4	143	111	105	28	SCD182-03000-2-4-135HA30-HU318	31660555
3,500	4	158	126	120	28	SCD182-03500-2-4-135HA30-HU318	31660556
4,000	4	158	126	120	28	SCD182-04000-2-4-135HA30-HU318	31660557
4,500	5	174	142	135	28	SCD182-04500-2-4-135HA30-HU318	31660558
5,000	5	190	158	150	28	SCD182-05000-2-4-135HA30-HU318	31660559
5,500	6	214	174	165	36	SCD182-05500-2-4-135HA30-HU318	31660560
6,000	6	229	189	180	36	SCD182-06000-2-4-135HA30-HU318	31660562
6,500	8	261	221	210	36	SCD182-06500-2-4-135HA30-HU318	31660563
7,000	8	261	221	210	36	SCD182-07000-2-4-135HA30-HU318	31660564
8,000	8	292	252	240	36	SCD182-08000-2-4-135HA30-HU318	31660565
9,000	10	328	284	270	40	SCD182-09000-2-4-135HA30-HU318	31660566
10,000	10	359	315	300	40	SCD182-10000-2-4-135HA30-HU318	31660567
11,000	12	396	347	330	45	SCD182-11000-2-4-135HA30-HU318	31660568
12,000	12	427	378	360	45	SCD182-12000-2-4-135HA30-HU318	31660569

Recommendation for pilot drill:

For the pilot drill, please use the **MEGA-Drill-Alu (SCD131 - 3xD/5xD)**

Select nominal diameter that is **0.02 mm** larger.

The point angle and diameter tolerances are matched for optimal functionality as well as for the interaction of pilot drill and deep drill.

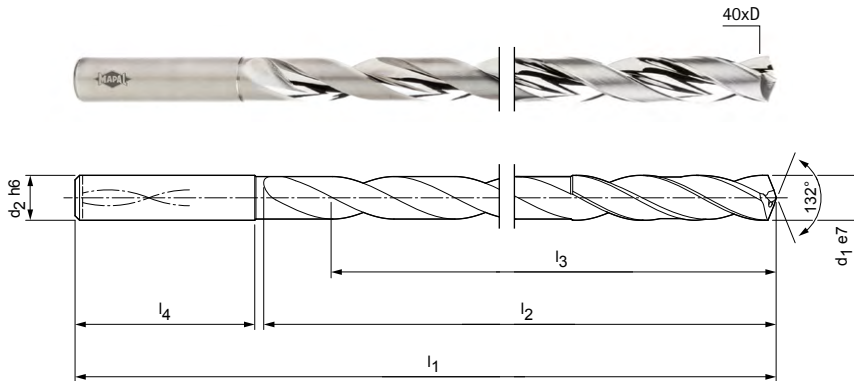
Dimensions in mm.

For cutting data recommendations, see end of chapter.

Special designs and other coatings available upon request.

MEGA-Deep-Drill-Alu (2nd Gen.)

Solid carbide twist drill
SCD182 (40xD), internal coolant supply



Design:

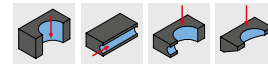
Drill diameter: 3.000 - 9.000 mm
Cutting material: HU318
Number of cutting edges: 2
Number of margin lands: 4
Tip angle: 132°
Helix angle: 30°



Configurable features:



Application:



P	1	2	3	4	5	M	1	2	3	K	1	2	3	4	5	N	1	2	3	4	5	S	1	2	3	4	H	1	2	3	C	1	2	3	4	5
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Dimensions						Shank form HA	
d ₁ e7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order no.
3,000	4	178	146	140	28	SCD182-03000-2-4-132HA40-HU318	31660570
3,500	4	198	166	160	28	SCD182-03500-2-4-132HA40-HU318	31660571
4,000	4	198	166	160	28	SCD182-04000-2-4-132HA40-HU318	31660572
4,500	5	219	187	180	28	SCD182-04500-2-4-132HA40-HU318	31660573
5,000	5	240	208	200	28	SCD182-05000-2-4-132HA40-HU318	31660574
6,000	6	289	249	240	36	SCD182-06000-2-4-132HA40-HU318	31660575
7,000	8	331	291	280	36	SCD182-07000-2-4-132HA40-HU318	31660576
8,000	8	372	332	320	36	SCD182-08000-2-4-132HA40-HU318	31660577
9,000	10	418	374	360	40	SCD182-09000-2-4-132HA40-HU318	31660578

Recommendation for pilot drill:

For the pilot drill, please use the **MEGA-Deep-Drill-Alu (2nd Gen.) (SCD182 – 30xD)**

Select nominal diameter that is **0.02 mm** larger.

The point angle and diameter tolerances are matched for optimal functionality as well as for the interaction of pilot drill and deep drill.

Dimensions in mm.

For cutting data recommendations, see end of chapter.

Special designs and other coatings available upon request.

Machining values for solid carbide drills

Feed and cutting speed

MEGA-Deep-Drill-Steel | SCD701

MMG*	Workpiece material	Strength/hardness [N/mm ²] [HRC]	
P	P1-1 Unalloyed steel ≤ 0.15% C, annealed	420	
	P1-2 Unalloyed steel ≤ 0.45% C, annealed	650	
	P1-3 Unalloyed steel ≤ 0.45% C, quenched and tempered	850	
	P1-4 Unalloyed steel ≤ 0.75% C, annealed	900	
	P1-5 Unalloyed steel ≤ 0.75% C, quenched and tempered	1,000	
	P2-1 Low-alloyed steel, annealed	600	
	P2-2 Low-alloyed steel, quenched and tempered	930	
	P2-3 Low-alloyed steel, quenched and tempered	1,000	
	P2-4 Low-alloyed steel, quenched and tempered	1,200	
	P3-1 High-alloyed steel and high-alloyed tool steel, annealed	680	
	P3-2 High-alloyed steel and high-alloyed tool steel, quenched and tempered	1,100	
	P3-3 High-alloyed steel and high-alloyed tool steel, quenched and tempered	1,250	
	P4-1 Bainitic steel, ultra-high-carbon steel, bainitic-quenched and tempered	1,650	
	P5-1 Stainless steel, ferritic / martensitic, quenched and tempered	680	
	P5-2 Stainless steel, martensitic, quenched and tempered	800	
	P5-3 Stainless steel, martensitic, precipitation-hardened	1,200	
K	K1-1 Grey cast iron, GJL, pearlitic / ferritic	200	
	K1-2 Grey cast iron, GJL, pearlitic	250	
	K1-3 Grey cast iron, GJL, pearlitic	350	
	K2-1 Spheroidal graphite cast iron, GJS, ferritic	400	
	K2-2 Spheroidal graphite cast iron, GJS, ferritic / pearlitic	500	
	K2-3 Spheroidal graphite cast iron, GJS, pearlitic	700	
	K2-4 Austempered ductile iron, ADI, austenitic / ferritic	1,400	
	K3-1 Compacted graphite cast iron, GJV, ferritic	400	
	K3-2 Compacted graphite cast iron, GJV, pearlitic	> 400	
	K4-1 Malleable cast iron, GJMW / GJMB, ferritic	400	
	K4-2 Malleable cast iron, GJMW / GJMB, pearlitic	600	
	K5-1 Austenitic cast iron, GJLA / GJSA, lamellar graphite	210	
	K5-2 Austenitic cast iron, GJLA / GJSA, spheroidal graphite	420	

MEGA-Deep-Drill-Alu (2nd Gen.) | SCD182

MMG*	Workpiece material	Strength/hardness [N/mm ²] [HRC]	
N	N1-1 Aluminium – wrought alloys, cannot be hardened	200	
	N1-2 Aluminium – wrought alloys, hardened	350	
	N1-3 Aluminium – wrought alloys, hardened	550	
	N1-4 Aluminium – cast alloys Si ≤ 7%, cannot be hardened		
	N1-5 Aluminium – cast alloys 7% > Si ≤ 12%, cannot be hardened	260	
	N1-6 Aluminium – cast alloys 7% > Si ≤ 12%, hardened	310	
	N1-7 Aluminium – cast alloys Si > 12%, heat resistant	450	
	N2-1 Copper and copper alloys Pb > 1% (free-machining alloy)	390	
	N2-2 Copper and copper alloys CuSn (bronze, electrolytic copper)	340	
	N2-3 Copper and copper alloys CuZn, CuSnZn (brass, gunmetal)	310	
	N2-4 Copper and copper alloys CuAl, CuNi (special alloys)	> 400	

* MAPAL machining groups
The specified cutting data are guide values.

	Cutting speed v_c [m/min]				Feed f [mm] for drill diameter [mm]					
	Internal cooling	External cooling	MQL	Air	3.00	4.00	5.50	7.50	10.50	16.00
	110		100		0.16	0.19	0.24	0.30	0.38	0.48
	100		90		0.17	0.20	0.26	0.32	0.40	0.51
	95		85		0.19	0.23	0.29	0.36	0.45	0.57
	90		80		0.19	0.23	0.29	0.36	0.45	0.57
	90		75		0.18	0.22	0.27	0.33	0.41	0.52
	100		85		0.19	0.23	0.29	0.36	0.45	0.57
	90		75		0.17	0.20	0.26	0.32	0.40	0.51
	80		70		0.16	0.19	0.24	0.29	0.36	0.45
	70		60		0.14	0.17	0.22	0.27	0.33	0.42
	75		65		0.17	0.20	0.26	0.32	0.40	0.51
	60		55		0.14	0.17	0.22	0.27	0.33	0.42
	60		50		0.12	0.14	0.18	0.21	0.26	0.32
	60		45		0.12	0.14	0.18	0.21	0.26	0.32
	100		85		0.11	0.14	0.17	0.21	0.27	0.34
	70		60		0.19	0.23	0.29	0.36	0.45	0.57
	60		50		0.11	0.14	0.17	0.21	0.27	0.34
	160		120	85	0.24	0.31	0.41	0.53	0.67	0.87
	140		100	75	0.23	0.30	0.39	0.50	0.64	0.84
	120		85		0.21	0.28	0.37	0.48	0.61	0.80
	160		120	100	0.22	0.27	0.35	0.45	0.57	0.74
	120		90		0.21	0.26	0.33	0.42	0.53	0.69
	100		75		0.20	0.24	0.31	0.39	0.49	0.63
	60		50		0.14	0.17	0.22	0.27	0.33	0.42
	90		80		0.21	0.26	0.34	0.42	0.53	0.68
	80		70		0.18	0.22	0.28	0.34	0.43	0.54
	120		85	65	0.21	0.28	0.37	0.48	0.61	0.80
	100		75		0.22	0.27	0.35	0.45	0.57	0.74
	90		70		0.22	0.27	0.33	0.40	0.50	0.63
	55		45		0.23	0.25	0.27	0.30	0.35	0.41

	Cutting speed v_c [m/min]				Feed f [mm] for drill diameter [mm]					
	Internal cooling	External cooling	MQL	Air	3.00	4.00	5.50	7.50	10.50	16.00
	240		200		0.20	0.25	0.31	0.39	0.49	0.62
	200		160		0.25	0.31	0.40	0.50	0.63	0.81
	160		145		0.25	0.31	0.40	0.50	0.63	0.81
	240		200		0.25	0.31	0.40	0.50	0.63	0.81
	200		160		0.25	0.31	0.40	0.50	0.63	0.81
	175		145		0.25	0.31	0.40	0.50	0.63	0.81
	145		120		0.25	0.31	0.40	0.50	0.63	0.81
	125				0.18	0.22	0.27	0.34	0.42	0.54
	110				0.22	0.27	0.35	0.44	0.55	0.70
	180		145	110	0.24	0.31	0.41	0.53	0.68	0.89
	125		110		0.12	0.15	0.19	0.24	0.30	0.38

The optimum data for the respective machining task should be determined during the test or machining.

Bold text: Best suited | Normal text: Suitable in some situations

Deep drilling in three steps

1 Making a pilot bore

P K Steel

MEGA-Drill-Steel-Plus

[SCD600, SCD601]

For general drilling conditions



MEGA-Step-Drill-Steel-Plus

[SCD590, SCD591]

For general drilling conditions
incl. 90° countersink



MEGA-Speed-Drill-Steel

[SCD621]

For general drilling conditions
Select nominal diameter that is 0.02 mm larger



MEGA-180°-Drill

[SCD231]

For difficult drilling conditions



N Aluminium

MEGA-Drill-Alu

[SCD131] 3xD, 5xD

For general drilling conditions
Select nominal diameter that is 0.02 mm larger



MEGA-180°-Drill-Alu

[SCD241]

For difficult drilling conditions
Select nominal diameter that is 0.02 mm larger



2 Deep drilling up to 30xD

Example pilot tool selection:

Pilot tool; MEGA-Speed-Drill-Steel, nominal diameter 5.02 mm

Subsequent tool; MEGA-Deep-Drill-Steel, nominal diameter 5.00 mm

Entry into the pilot bore:

- Enter at max. 300 rpm and $v_f = 1,000$ mm/min
- Without coolant – drill up to 1 mm before the bottom of the pilot bore
- Switch on coolant → cooling lubricant = 10–40 bar/MQL
- Spot drilling with specified cutting data according to table

Info:

Further method for spot drilling with the MEGA-Deep-Drill-Steel: Spot drilling with 50% feed, linear acceleration to 100% feed up to drilling depth of 4xD

- Deep drilling up to 30xD in one go, without chip removal cycles

Running out:

- Run out at max. 300 rpm and double the feed ($2x v_f$)
- Switch off coolant prior to bore exit

3 Deep drilling up to 40xD

Entry into the 30xD bore:

- Enter at max. 300 rpm and $v_f = 1,000$ mm/min
- Without coolant – up to 1 mm before the bottom of the 30xD bore
- Switch on coolant → cooling lubricant = 10–40 bar/MQL
- Spot drilling with specified cutting data according to table

Info:

Further method for spot drilling with the MEGA-Deep-Drill-Steel: Spot drilling with 50% feed, linear acceleration to 100% feed up to drilling depth of 32xD

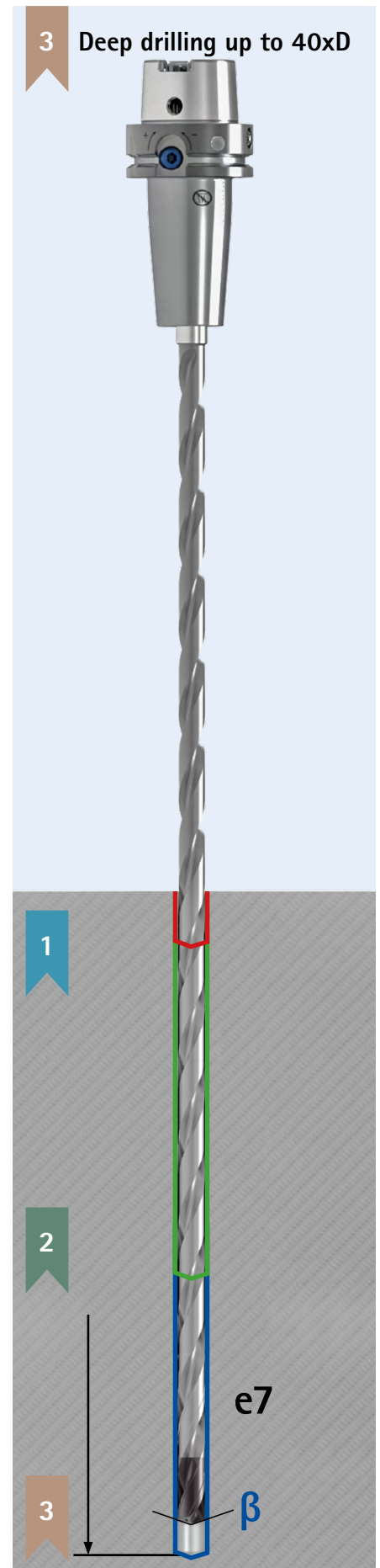
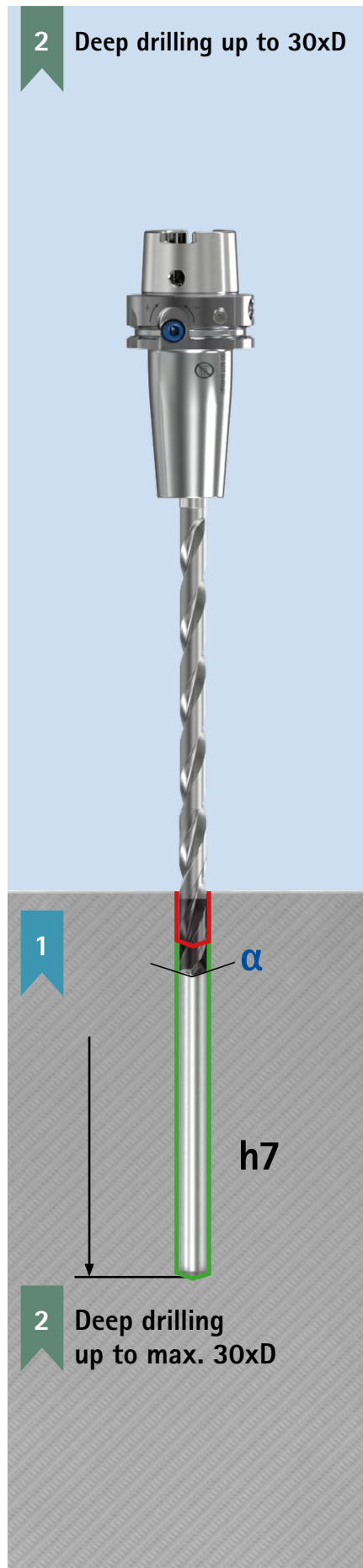
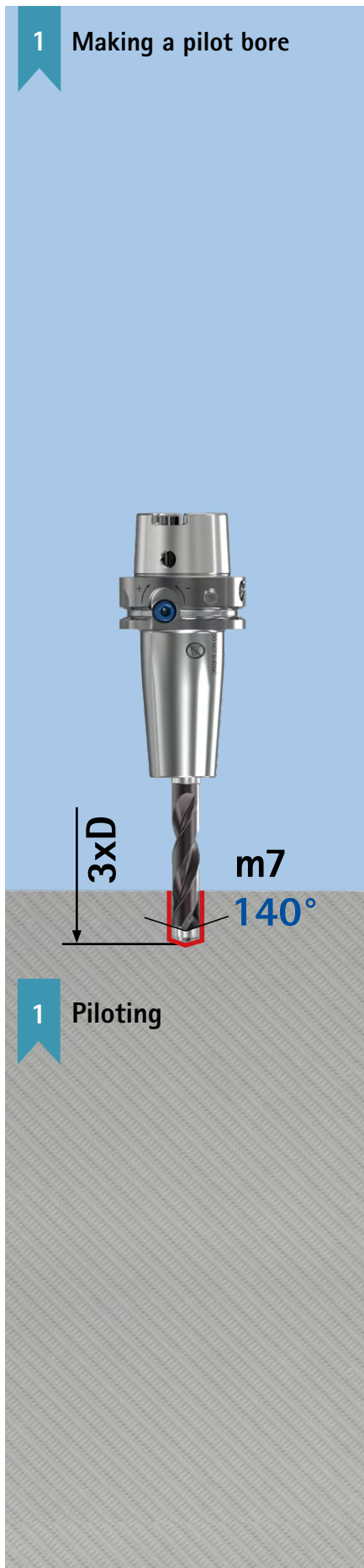
- Deep drilling up to 40xD in one go, without chip removal cycles

Running out:

- Run out at max. 300 rpm and double the feed ($2x v_f$)
- Switch off coolant prior to bore exit

Selecting the right pilot drill

- The nominal diameter of the pilot drill must match the nominal diameter of the MEGA-Deep-Drill-Steel.
- The point angle and diameter tolerances are matched for optimal functionality as well as for the interaction of pilot drill and deep drill.





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MILLING

CLAMPING

TURNING

ACTUATING

SETTING | MEASURING | DISPENSING

SERVICES

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