

Your technology partner for cost-effective machining

# MEGA-Deep-Drill-Steel

# MEGA-Deep-Drill-Steel

## Efficient deep drilling up to 40xD

The new MEGA-Deep-Drill-Steel is a deep drill for highly efficient deep drilling applications on steel and cast-iron 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 convex 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 runout. The adapted guide length and the widened rear margin lands ensure maximum guiding accuracy even with inclined bore outlets. With its smooth surface, the HiPIMS head coating enables maximum tool life and ensures smooth chip flow.



### ✓ HIGH WEAR RESISTANCE



#### Good cutting properties, short chips

- Convex cutting edge shape

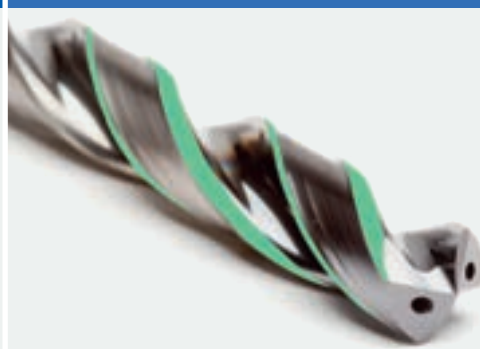
#### Maximum tool life

- Innovative cutting material

#### Maximum stability

- Perfectly adapted core diameter profile

### ⚙️ PROCESS RELIABILITY



#### Exact boring accuracy

- Thanks to four margin lands

#### Very low bore runout

- Thanks to the larger circumference surface area of the rear margin lands

#### Maximum guiding accuracy even with inclined bore outlets

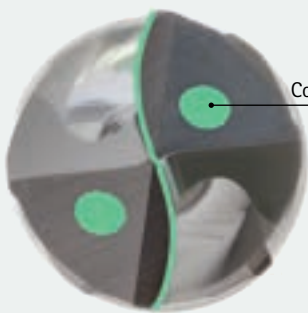
- Ideal length of margin lands

**P** Steel workpiece materials

**K** Cast-iron workpiece materials



**MAXIMUM PRODUCTIVITY**



Cooling channel Ø **+20%**

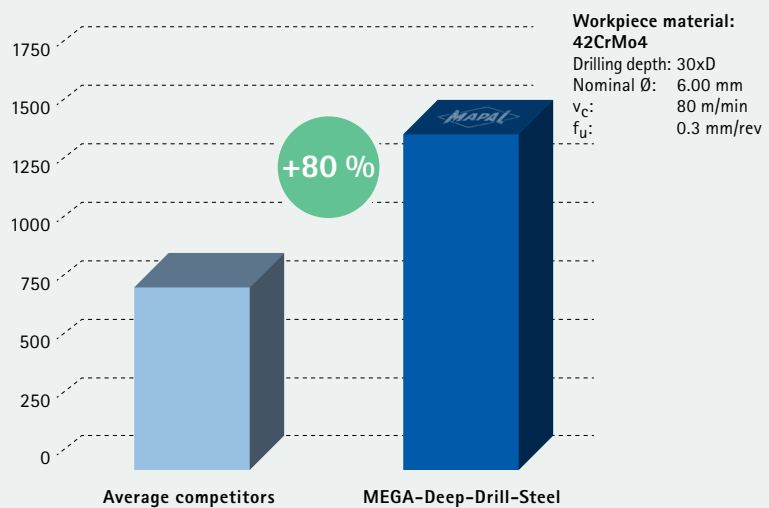
**Good cutting properties and maximum feed rates**

- Thanks to spherical main cutter
- Maximum cooling capacity
- Maximum cutting stability

**Ideal chip removal**

- Tightly rolled chips

**Maximum tool life according to the number of bores**



# Deep drilling in three steps

## 1 Making a pilot bore

### 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



#### Info:

Select nominal  $\varnothing$  that is 0.02 mm larger.

#### Example:

Pilot tool: MEGA-Speed-Drill-Steel,  
nominal  $\varnothing$  5.02 mm

Subsequent tool: MEGA-Deep-Drill-Steel,  
nominal  $\varnothing$  5.00 mm

### MEGA-180°-Drill [SCD231]

For difficult drilling conditions



## 2 Deep drilling up to 30xD

### 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 shot, without chip removal cycles**

### Running out:

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

## 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

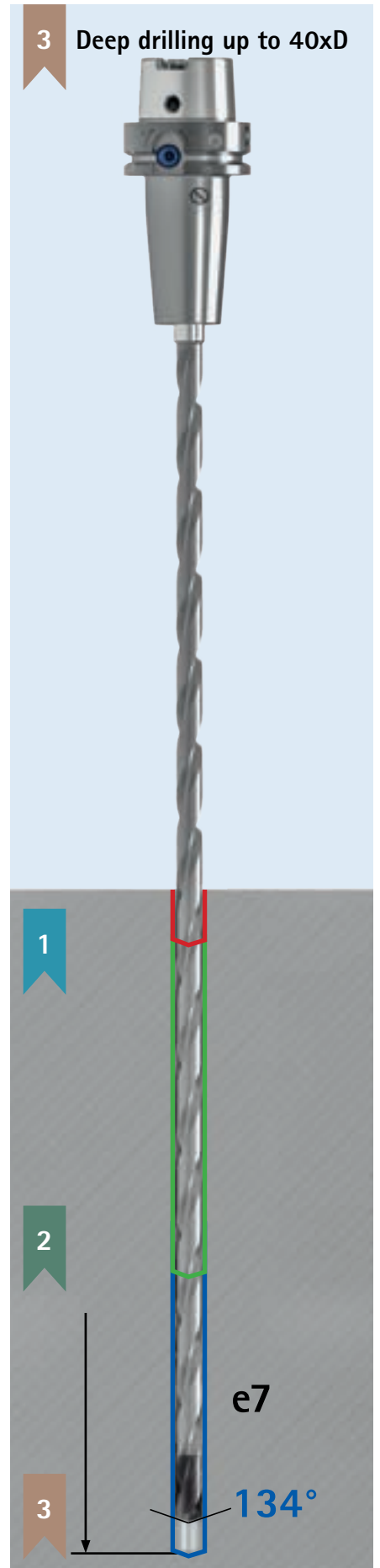
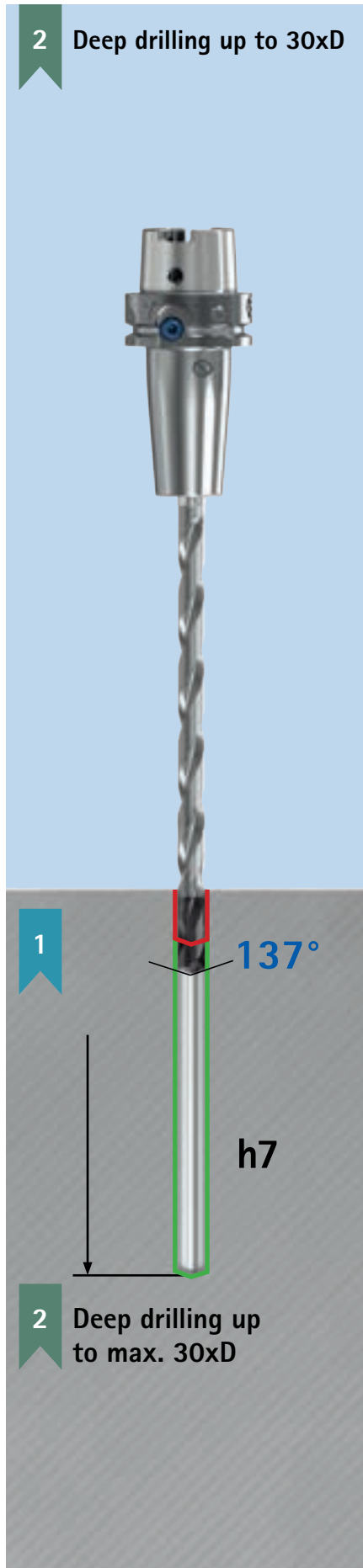
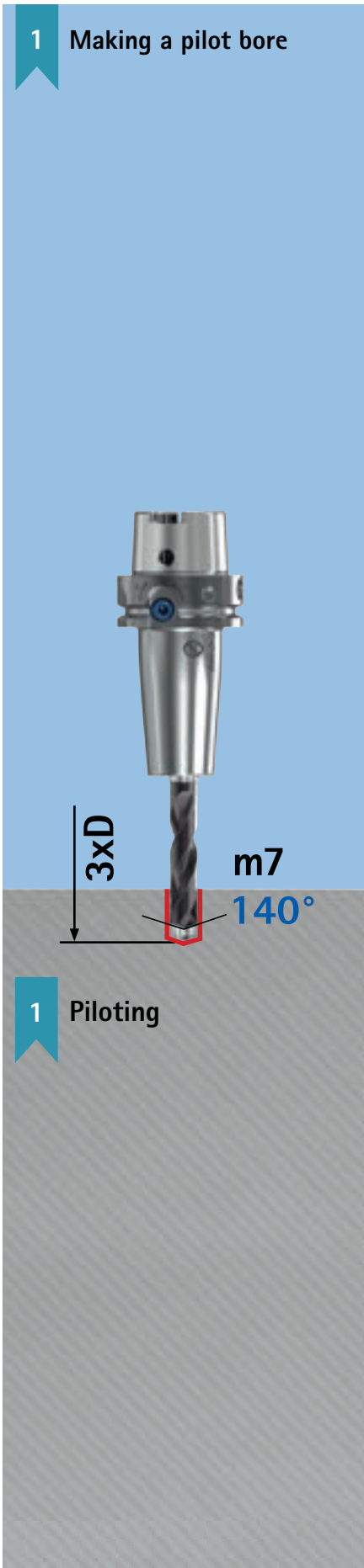
- **Deep drilling up to 40xD in one shot, without chip removal cycles**

### Running out:

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

### Selecting the right pilot drill

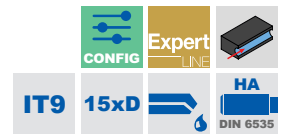
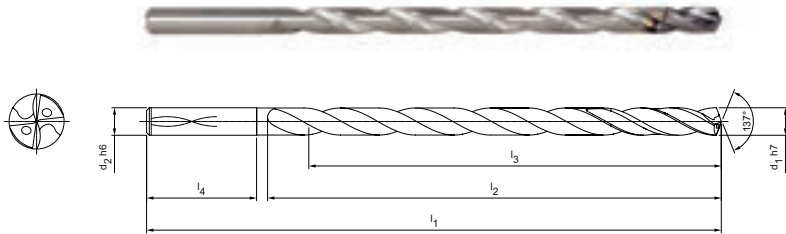
- The nominal diameter of the pilot drill must match the nominal diameter of the MEGA-Deep-Drill-Steel
- The point angle and diameter tolerances are matched for optimal functionality as well as for the interaction of pilot drill and deep drill



# MEGA-Deep-Drill-Steel

Solid carbide twist drill  
SCD701 (15xD), internal coolant supply

**Design:**  
 Drill diameter: 3.00 - 16.00 mm  
 Bore tolerance: IT9 (available)  
 Shank form: HA  
 Cutting material: HP400  
 Number of cutting edges: 2  
 Tip angle: 137°  
 Helix angle: 30°  
 Special features: Head coating



**Preferred series available from stock**

Dimensions						Shank form HA	
d <sub>1</sub> h7	d <sub>2</sub> h6	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	Specification	Order no.
3,00	4,00	90	58	52	28	SCD701-0300-2-4-137HA15-HP400	31459705
3,50	4,00	98	66	60	28	SCD701-0350-2-4-137HA15-HP400	31459706
4,00	4,00	98	66	60	28	SCD701-0400-2-4-137HA15-HP400	31459707
4,50	5,00	107	75	68	28	SCD701-0450-2-4-137HA15-HP400	31459708
5,00	5,00	115	83	75	28	SCD701-0500-2-4-137HA15-HP400	31459709
5,50	6,00	131	91	83	36	SCD701-0550-2-4-137HA15-HP400	31459720
6,00	6,00	139	99	90	36	SCD701-0600-2-4-137HA15-HP400	31459721
7,00	8,00	156	116	105	36	SCD701-0700-2-4-137HA15-HP400	31459722
8,00	8,00	172	132	120	36	SCD701-0800-2-4-137HA15-HP400	31459723
9,00	10,00	193	149	135	40	SCD701-0900-2-4-137HA15-HP400	31459724
9,50	10,00	209	165	150	40	SCD701-0950-2-4-137HA15-HP400	31459725
10,00	10,00	209	165	150	40	SCD701-1000-2-4-137HA15-HP400	31459726
11,00	12,00	231	182	165	45	SCD701-1100-2-4-137HA15-HP400	31459727
12,00	12,00	247	198	180	45	SCD701-1200-2-4-137HA15-HP400	31459728
13,00	14,00	264	215	195	45	SCD701-1300-2-4-137HA15-HP400	31459729
14,00	14,00	280	231	210	45	SCD701-1400-2-4-137HA15-HP400	31459730
15,00	16,00	300	248	225	48	SCD701-1500-2-4-137HA15-HP400	31459731
16,00	16,00	316	264	240	48	SCD701-1600-2-4-137HA15-HP400	31459732

**Configurable features**

**Diameter:**  
Diameter in increments of 0.01 mm freely selectable

**Specification:**  
SCD701-[diameter]-2-4-137HA15-HP400

**Example:**  
SCD701-0735-2-4-137HA15-HP400  
 Tool diameter d<sub>1</sub> = 7.35 mm

Dimensions in mm.  
 For recommended pilot drill, see page 4  
 For cutting data recommendation, see page 11.

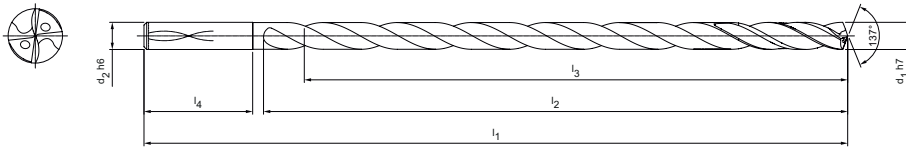
**Dimensions of configurable series h7**

d <sub>1</sub> min.	d <sub>1</sub> max.	d <sub>2</sub> h6	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>
3,00	3,49	4,00	90	58	52	28
3,50	4,00	4,00	98	66	60	28
4,01	4,50	5,00	107	75	68	28
4,51	5,00	5,00	115	83	75	28
5,01	5,50	6,00	131	91	83	36
5,51	6,00	6,00	139	99	90	36
6,01	7,00	8,00	156	116	105	36
7,01	8,00	8,00	172	132	120	36
8,01	9,00	10,00	193	149	135	40
9,01	10,00	10,00	209	165	150	40
10,01	11,00	12,00	231	182	165	45
11,01	12,00	12,00	247	198	180	45
12,01	13,00	14,00	264	215	195	45
13,01	14,00	14,00	280	231	210	45
14,01	15,00	16,00	300	248	225	48
15,01	16,00	16,00	316	264	240	48

# MEGA-Deep-Drill-Steel

Solid carbide twist drill  
SCD701 (20xD), internal coolant supply

**Design:**  
 Drill diameter: 3.00 - 16.00 mm  
 Bore tolerance: IT9 (available)  
 Shank form: HA  
 Cutting material: HP400  
 Number of cutting edges: 2  
 Tip angle: 137°  
 Helix angle: 30°  
 Special features: Head coating



**Preferred series available from stock**

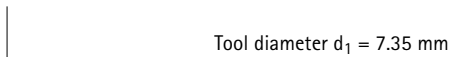
Dimensions						Shank form HA	
d <sub>1</sub> h7	d <sub>2</sub> h6	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	Specification	Order no.
3,00	4,00	108	76	70	28	SCD701-0300-2-4-137HA20-HP400	31459733
3,50	4,00	118	86	80	28	SCD701-0350-2-4-137HA20-HP400	31459734
4,00	4,00	118	86	80	28	SCD701-0400-2-4-137HA20-HP400	31459735
4,50	5,00	129	97	90	28	SCD701-0450-2-4-137HA20-HP400	31459736
5,00	5,00	140	108	100	28	SCD701-0500-2-4-137HA20-HP400	31459737
5,50	6,00	159	119	110	36	SCD701-0550-2-4-137HA20-HP400	31459738
6,00	6,00	169	129	120	36	SCD701-0600-2-4-137HA20-HP400	31459739
6,50	8,00	191	151	140	36	SCD701-0650-2-4-137HA20-HP400	31459740
7,00	8,00	191	151	140	36	SCD701-0700-2-4-137HA20-HP400	31459741
8,00	8,00	212	172	160	36	SCD701-0800-2-4-137HA20-HP400	31459742
9,00	10,00	238	194	180	40	SCD701-0900-2-4-137HA20-HP400	31459743
10,00	10,00	259	215	200	40	SCD701-1000-2-4-137HA20-HP400	31459744
11,00	12,00	286	237	220	45	SCD701-1100-2-4-137HA20-HP400	31459745
12,00	12,00	307	258	240	45	SCD701-1200-2-4-137HA20-HP400	31459746
13,00	14,00	329	280	260	45	SCD701-1300-2-4-137HA20-HP400	31459747
14,00	14,00	350	301	280	45	SCD701-1400-2-4-137HA20-HP400	31459748
15,00	16,00	375	323	300	48	SCD701-1500-2-4-137HA20-HP400	31459749
16,00	16,00	396	344	320	48	SCD701-1600-2-4-137HA20-HP400	31459750

**Configurable features**

**Diameter:**  
Diameter in increments of 0.01 mm freely selectable

**Specification:**  
SCD701-[diameter]-2-4-137HA20-HP400

**Example:**  
SCD701-0735-2-4-137HA20-HP400



Dimensions in mm.  
 For recommended pilot drill, see page 4  
 For cutting data recommendation, see page 11.

**Dimensions of configurable series h7**

d <sub>1</sub> min.	d <sub>1</sub> max.	d <sub>2</sub> h6	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>
3,00	3,49	4,00	108	76	70	28
3,50	4,00	4,00	118	86	80	28
4,01	4,50	5,00	129	97	90	28
4,51	5,00	5,00	140	108	100	28
5,01	5,50	6,00	159	119	110	36
5,51	6,00	6,00	169	129	120	36
6,01	7,00	8,00	191	151	140	36
7,01	8,00	8,00	212	172	160	36
8,01	9,00	10,00	238	194	180	40
9,01	10,00	10,00	259	215	200	40
10,01	11,00	12,00	286	237	220	45
11,01	12,00	12,00	307	258	240	45
12,01	13,00	14,00	329	280	260	45
13,01	14,00	14,00	350	301	280	45
14,01	15,00	16,00	375	323	300	48
15,01	16,00	16,00	396	344	320	48

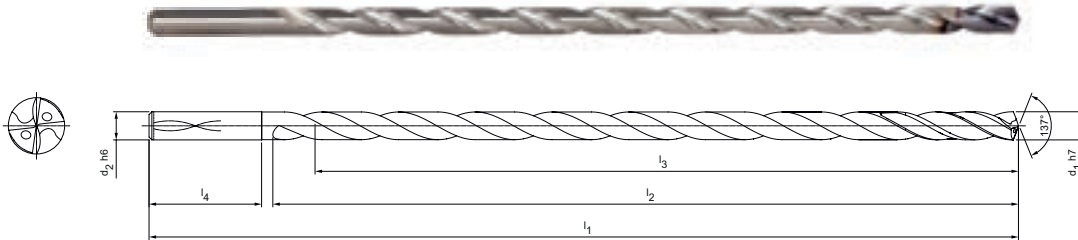
# MEGA-Deep-Drill-Steel

Solid carbide twist drill

SCD701 (25xD), internal coolant supply

## Design:

Drill diameter: 3.00 - 14.00 mm  
 Bore tolerance: IT9 (available)  
 Shank form: HA  
 Cutting material: HP400  
 Number of cutting edges: 2  
 Tip angle: 137°  
 Helix angle: 30°  
 Special features: Head coating



## Preferred series available from stock

Dimensions						Shank form HA	
d <sub>1</sub> h7	d <sub>2</sub> h6	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	Specification	Order no.
3,00	4,00	125	93	87	28	SCD701-0300-2-4-137HA25-HP400	31459751
3,50	4,00	138	106	100	28	SCD701-0350-2-4-137HA25-HP400	31459752
4,00	4,00	138	106	100	28	SCD701-0400-2-4-137HA25-HP400	31459753
4,50	5,00	152	120	113	28	SCD701-0450-2-4-137HA25-HP400	31459754
5,00	5,00	165	133	125	28	SCD701-0500-2-4-137HA25-HP400	31459755
5,50	6,00	186	146	137	36	SCD701-0550-2-4-137HA25-HP400	31459756
6,00	6,00	199	159	150	36	SCD701-0600-2-4-137HA25-HP400	31459757
7,00	8,00	226	186	175	36	SCD701-0700-2-4-137HA25-HP400	31459758
8,00	8,00	252	212	200	36	SCD701-0800-2-4-137HA25-HP400	31459759
9,00	10,00	283	239	225	40	SCD701-0900-2-4-137HA25-HP400	31459760
10,00	10,00	309	265	250	40	SCD701-1000-2-4-137HA25-HP400	31459761
11,00	12,00	341	292	275	45	SCD701-1100-2-4-137HA25-HP400	31459762
12,00	12,00	367	318	300	45	SCD701-1200-2-4-137HA25-HP400	31459763
13,00	14,00	394	345	325	45	SCD701-1300-2-4-137HA25-HP400	31459764
14,00	14,00	420	371	350	45	SCD701-1400-2-4-137HA25-HP400	31459765

## Configurable features



**Diameter:**  
Diameter in increments of 0.01 mm freely selectable



**Specification:**  
SCD701-[diameter]-2-4-137HA25-HP400

**Example:**  
SCD701-0735-2-4-137HA25-HP400

Tool diameter d<sub>1</sub> = 7.35 mm

## Dimensions of configurable series h7

d <sub>1</sub> min.	d <sub>1</sub> max.	d <sub>2</sub> h6	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>
3,00	3,49	4,00	125	93	87	28
3,50	4,00	4,00	138	106	100	28
4,01	4,50	5,00	152	120	113	28
4,51	5,00	5,00	165	133	125	28
5,01	5,50	6,00	186	146	138	36
5,51	6,00	6,00	199	159	150	36
6,01	7,00	8,00	226	186	175	36
7,01	8,00	8,00	252	212	200	36
8,01	9,00	10,00	283	239	225	40
9,01	10,00	10,00	309	265	250	40
10,01	11,00	12,00	341	292	275	45
11,01	12,00	12,00	367	318	300	45
12,01	13,00	14,00	394	345	325	45
13,01	14,00	14,00	420	371	350	45

Dimensions in mm.

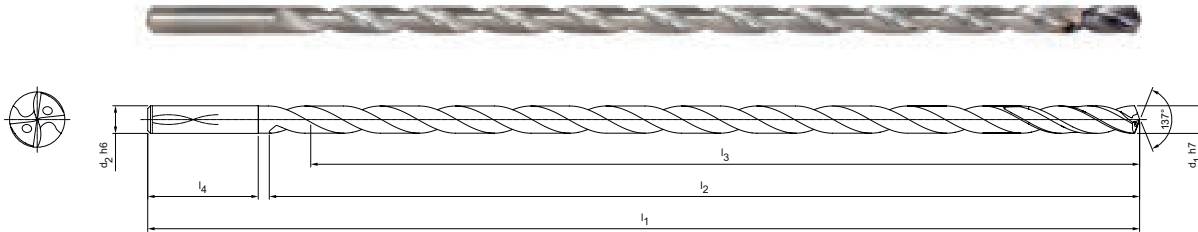
For recommended pilot drill, see page 4

For cutting data recommendation, see page 11.

# MEGA-Deep-Drill-Steel

Solid carbide twist drill  
SCD701 (30xD), internal coolant supply

**Design:**  
 Drill diameter: 3.00 - 12.00 mm  
 Bore tolerance: IT9 (available)  
 Shank form: HA  
 Cutting material: HP400  
 Number of cutting edges: 2  
 Tip angle: 137°  
 Helix angle: 30°  
 Special features: Head coating



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**Preferred series available from stock**

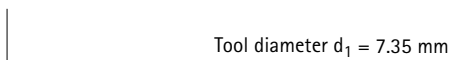
Dimensions						Shank form HA	
d <sub>1</sub> h7	d <sub>2</sub> h6	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	Specification	Order no.
3,00	4,00	143	111	105	28	SCD701-0300-2-4-137HA30-HP400	31459766
3,50	4,00	158	126	120	28	SCD701-0350-2-4-137HA30-HP400	31459767
4,00	4,00	158	126	120	28	SCD701-0400-2-4-137HA30-HP400	31459768
4,50	5,00	174	142	135	28	SCD701-0450-2-4-137HA30-HP400	31459769
5,00	5,00	190	158	150	28	SCD701-0500-2-4-137HA30-HP400	31459770
5,50	6,00	214	174	165	36	SCD701-0550-2-4-137HA30-HP400	31459771
6,00	6,00	229	189	180	36	SCD701-0600-2-4-137HA30-HP400	31459772
6,50	8,00	261	221	210	36	SCD701-0650-2-4-137HA30-HP400	31459773
7,00	8,00	261	221	210	36	SCD701-0700-2-4-137HA30-HP400	31459774
8,00	8,00	292	252	240	36	SCD701-0800-2-4-137HA30-HP400	31459775
9,00	10,00	328	284	270	40	SCD701-0900-2-4-137HA30-HP400	31459776
10,00	10,00	359	315	300	40	SCD701-1000-2-4-137HA30-HP400	31459777
11,00	12,00	396	347	330	45	SCD701-1100-2-4-137HA30-HP400	31459778
12,00	12,00	427	378	360	45	SCD701-1200-2-4-137HA30-HP400	31459779

**Configurable features**

**Diameter:**  
Diameter in increments of 0.01 mm freely selectable

**Specification:**  
SCD701-[diameter]-2-4-137HA30-HP400

**Example:**  
SCD701-0735-2-4-137HA30-HP400



**Dimensions of configurable series h7**

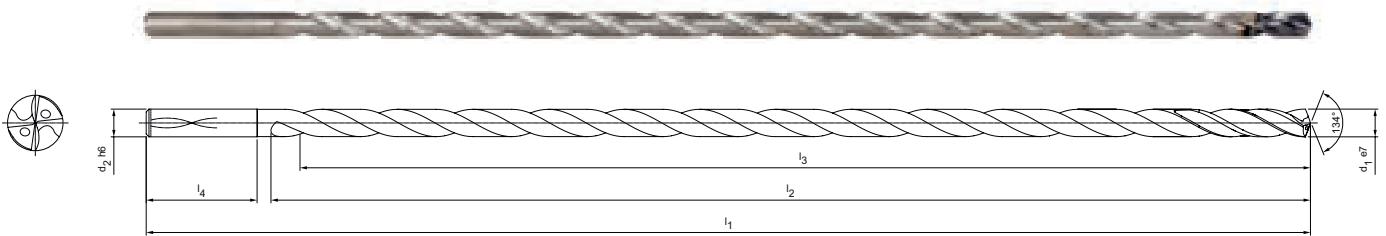
d <sub>1</sub> min.	d <sub>1</sub> max.	d <sub>2</sub> h6	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>
3,00	3,49	4,00	143	111	105	28
3,50	4,00	4,00	158	126	120	28
4,01	4,50	5,00	174	142	135	28
4,51	5,00	5,00	190	158	150	28
5,01	5,50	6,00	214	174	165	36
5,51	6,00	6,00	229	189	180	36
6,01	7,00	8,00	261	221	210	36
7,01	8,00	8,00	292	252	240	36
8,01	9,00	10,00	328	284	270	40
9,01	10,00	10,00	359	315	300	40
10,01	11,00	12,00	396	347	330	45
11,01	12,00	12,00	427	378	360	45

Dimensions in mm.  
 For recommended pilot drill, see page 4  
 For cutting data recommendation, see page 11.

# MEGA-Deep-Drill-Steel

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

**Design:**  
 Drill diameter: 3.00 - 9.00 mm  
 Bore tolerance: IT9 (available)  
 Shank form: HA  
 Cutting material: HP400  
 Number of cutting edges: 2  
 Tip angle: 134°  
 Helix angle: 30°  
 Special features: Head coating



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**Preferred series available from stock**

Dimensions						Shank form HA	
d <sub>1</sub> e7	d <sub>2</sub> h6	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	Specification	Order no.
3,00	4,00	178	146	140	28	SCD701-0300-2-4-134HA40-HP400	31459780
3,50	4,00	198	166	160	28	SCD701-0350-2-4-134HA40-HP400	31459781
4,00	4,00	198	166	160	28	SCD701-0400-2-4-134HA40-HP400	31459782
4,50	5,00	219	187	180	28	SCD701-0450-2-4-134HA40-HP400	31459783
5,00	5,00	240	208	200	28	SCD701-0500-2-4-134HA40-HP400	31459784
6,00	6,00	289	249	240	36	SCD701-0600-2-4-134HA40-HP400	31459785
7,00	8,00	331	291	280	36	SCD701-0700-2-4-134HA40-HP400	31459786
8,00	8,00	372	332	320	36	SCD701-0800-2-4-134HA40-HP400	31459787
9,00	10,00	418	374	360	40	SCD701-0900-2-4-134HA40-HP400	31459788

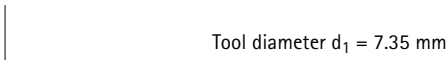
**Configurable features**

**Diameter:**  
Diameter in increments of 0.01 mm freely selectable

**Specification:**  
SCD701-[diameter]-2-4-134HA40-HP400

**Example:**

SCD701-0735-2-4-134HA40-HP400



**Dimensions of configurable series e7**

d <sub>1</sub> min.	d <sub>1</sub> max.	d <sub>2</sub> h6	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>
3,00	3,49	4,00	178	146	140	28
3,50	4,00	4,00	198	166	160	28
4,01	4,50	5,00	219	187	180	28
4,51	5,00	5,00	240	208	200	28
5,01	5,50	6,00	269	229	220	36
5,51	6,00	6,00	289	249	240	36
6,01	7,00	8,00	331	291	280	36
7,01	8,00	8,00	372	332	320	36
8,01	9,00	10,00	418	374	360	40

Dimensions in mm.

For recommended pilot drill, see page 4

For cutting data recommendation, see page 11.

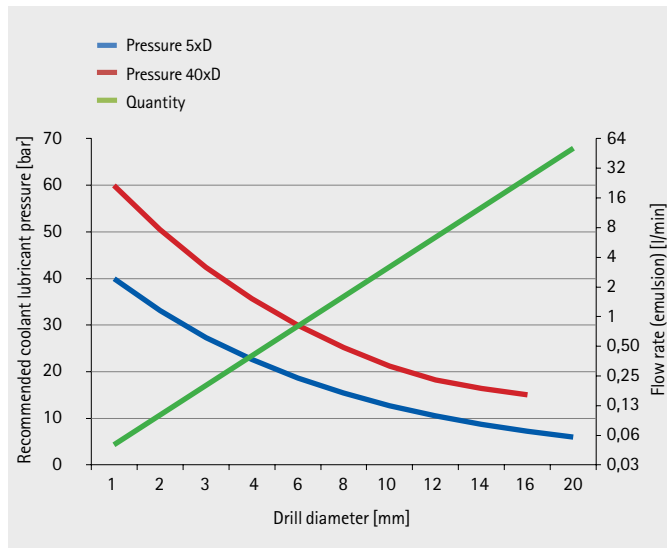
# Cutting data recommendations and technical application notes for deep drills

Feed and cutting speed

## MEGA-Deep-Drill-Steel | SCD701

MMG*	Workpiece material	Strength/hardness [N/mm <sup>2</sup> ] [HRC]	Cutting speed v <sub>c</sub> [m/min]		Feed f [mm] for drill diameter						
			Internal cooling	MQL	3.00	4.00	6.00	8.00	12.00	16.00	
P	P1.1	Structural, machining, case hardened and tempering steels, unalloyed	< 700	100	90	0.16	0.19	0.24	0.30	0.40	0.48
	P1.2	Structural, machining, case hardened and tempering steels, unalloyed	< 1,200	90	75	0.20	0.24	0.31	0.38	0.48	0.60
	P2.1	Nitriding, hardening and tempering steels, alloyed	< 900	100	85	0.19	0.23	0.29	0.36	0.46	0.57
	P2.2	Nitriding, hardening and tempering steels, alloyed	< 1,400	70	60	0.16	0.19	0.24	0.29	0.39	0.45
	P3.1	Tool, bearing, spring and high-speed steels**	< 800	75	65	0.17	0.20	0.26	0.32	0.42	0.51
	P3.2	Tool, bearing, spring and high-speed steels**	< 1,000	60	55	0.14	0.17	0.22	0.27	0.35	0.42
	P3.3	Tool, bearing, spring and high-speed steels**	< 1,500	60	50	0.12	0.14	0.18	0.21	0.28	0.32
	P5.1	Cast steel		100	85	0.19	0.23	0.29	0.36	0.46	0.57
K	K1.1	Cast iron with lamellar graphite (grey cast iron), GJL	< 300	120	85	0.21	0.28	0.37	0.48	0.62	0.80
	K2.1	Cast iron with spheroidal graphite, GJS	< 500	160	120	0.22	0.27	0.35	0.45	0.58	0.74
	K2.2	Cast iron with spheroidal graphite, GJS	≤ 800	100	75	0.20	0.24	0.31	0.39	0.52	0.63
	K2.3	Cast iron with spheroidal graphite, GJS	> 800	60	50	0.14	0.17	0.22	0.27	0.35	0.42
	K3.1	Cast iron with vermicular graphite, GJV; malleable cast iron, GJM	< 500	90	80	0.21	0.26	0.34	0.42	0.55	0.68
	K3.2	Cast iron with vermicular graphite, GJV; malleable cast iron, GJM	> 500	80	70	0.18	0.22	0.28	0.34	0.45	0.54

### Reference values for coolant pressure and quantity



### System pressures for MQL for deep drills

MQL systems	Supply pressure
<b>One-channel systems</b>	<b>up to 16 bar</b>
Recommended supply pressure	5-6 bar
High pressure for Deep drilling < nominal Ø 12 mm	8-10 bar
<b>Two-channel systems</b>	<b>up to 10 bar</b>
Recommended supply pressure	5-6 bar
High pressure for Deep drilling < nominal Ø 6 mm	8-10 bar

\* MAPAL machining groups

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

The specified cutting data are guide values.

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



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