

SC drill – NC tapping device 142°

General machining

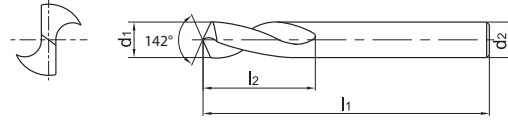
1143SC142



– Factory standard



External coolant



Article	*	Dimensions [mm]				Grade
		d <sub>1</sub> (h6)	d <sub>2</sub> (h6)	l <sub>1</sub>	l <sub>2</sub>	KDG303
1143SC142-0500		5	5	62	10	●
1143SC142-0600		6	6	66	15	●
1143SC142-0800		8	8	79	17	●
1143SC142-1000		10	10	89	20	●
1143SC142-1200		12	12	102	25	●
1143SC142-1400		14	14	107	30	●
1143SC142-1600		16	16	115	35	●
1143SC142-2000		20	20	131	42	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓	✓		

✓ Very suitable

✓ Suitable

A

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## Solid carbide drills

Material group	Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed $v_c$ [m/min]								
					SL-Drill		SL-Drill		SP-Drill		ST-Drill		
					12-15xD		20-30xD		3xD		3-5xD		
					KDG 303		KDG 303		KDG 303		KDG 303		
					Coolant								
					Int.	f-group	Int.	f-group	Int.	f-group	Int.	f-group	
P Unalloyed steel	approx. 0,15 % C	annealed	125	1	130	7	95	7	165	8	150	8	
	approx. 0,45 % C	annealed	190	2	110	7	80	7	145	8	130	8	
	approx. 0,45 % C	tempered	250	3	100	5	70	5	135	6	120	6	
	approx. 0,75 % C	annealed	270	4	85	5	60	5	125	6	110	6	
	approx. 0,75 % C	tempered	300	5	75	5	55	5	110	6	100	6	
P Low-alloyed steel		annealed	180	6	110	7	80	7	145	8	130	8	
		tempered	275	7	85	5	60	5	125	6	110	6	
		tempered	300	8	75	5	55	5	110	6	100	6	
		tempered	350	9	65	5	50	5	100	6	90	6	
P High-alloyed steel and high-alloyed tool steel		annealed	200	10	100	7	70	7	135	8	120	8	
		hardened and tempered	325	11	75	5	55	5	110	6	100	6	
M Stainless steel	ferritic/martensitic	annealed	200	12	60	4	55	4	90	5	80	5	
	martensitic	tempered	240	13	35	4	30	4	65	5	55	5	
	austenitic	quench hardened	180	14	40	4	35	4	70	5	60	5	
	austenitic-ferritic		230	15	35	4	35	4	55	5	50	5	
K Grey cast iron	perlitic/ferritic		180	16	125	7	90	7	150	8			
	perlitic (martensitic)		260	17	100	7	70	7	125	8			
K Cast iron with spheroidal graphite	ferritic		160	18	110	7	80	7	135	8			
	perlitic		250	19	70	7	50	7	90	8			
K Malleable cast iron	ferritic		130	20	120	7	85	7	145	8			
	perlitic		230	21	70	7	50	7	90	8			
N Aluminium wrought alloys	cannot be hardened		60	22	150	8	105	8	170	8			
	hardenable	hardened	100	23	150	8	105	8	170	8			
	Cast aluminium alloys	$\leq 12\%$ Si, cannot be hardened		75	24	150	8	105	8	170	8		
		$\leq 12\%$ Si, hardenable	hardened	90	25	150	8	105	8	170	8		
		$> 12\%$ Si, cannot be hardened		130	26	150	8	105	8	170	8		
N Copper and copper alloys (bronze/brass)	machining steel, PB > 1%		110	27	150	8	105	8	170	8			
	CuZn, CuSnZn		90	28	150	8	105	8	170	8			
	CuSn, Pb-free copper, electrolytic copper		100	29	150	8	105	8	170	8			
S Heat-resistant alloys	Fe-based alloys	annealed	200	30	30	4	20	4	30	5	30	5	
		hardened	280	31	35	4	25	4	35	5	35	5	
	Ni or Co bass	annealed	250	32	35	4	25	4	35	5	35	5	
		hardened	350	33	15	4	10	4	15	5	15	5	
		cast	320	34	15	4	10	4	15	5	15	5	
S Titanium alloys	pure titanium		R <sub>m</sub> 400	35	30	4	20	4	30	5	30	5	
	$\alpha$ and $\beta$ alloys	hardened	R <sub>m</sub> 1050	36	30	4	20	4	30	5	30	5	
H Hardened steel		hardened and tempered	55 HRC	37									
		hardened and tempered	60 HRC	38									
	Hard cast iron	cast	400	39									
H Hardened cast iron		hardened and tempered	55 HRC	40									
X Non-metallic materials	Thermoplasts			41									
	Thermosetting plastics			42									
	Plastic, glass-fibre reinforced GFRP			43									
	Plastic, carbon fibre reinforced CFRP			44									
	Graphite			45									
	Wood			46									

Note: The given cutting values are guide values, which were determined under ideal conditions.  
 The values have to be adapted in individual cases.  
 With hole depths of 5xD adjust the cutting data accordingly to the application.  
 f-group = feed rate recommendations on page C148.  
 For examples of material for cutting tool groups view page D11.



## 1 5 3 6 SU 05 (C) – 0850 (S)

1

2

3

4

5

6

7

8

9

A

Turning

Type	
Code	Description
1	Forets

1

Shank type	
Code	Description
1	Straight shank
2	Square shank DIN 10
3	Double flattened straight shank DIN 1809
5	Straight shank DIN 6535 HA
6	Weldon shank DIN 6535 HB
7	Whistle Notch shank DIN 6535 HE
9	Morse taper shank

2

B

Milling

Drill type	
Code	Description
0	Twist drill
3	Universal twist drill
4	NC tapping device
5	Step drill
6	Three-lips drill
7	Straight flute drill
8	Deep hole drill

3

Tool length	
Code	Description
1	DIN 338
2	DIN 1897
3	QJ/ZZQ(TO)01.001.002
4	DIN 6537 K
5	DIN 6539
6	DIN 6537 L
7	Factory standard ZCC-C
8	Factory standard ZCC-D
9	Factory standard ZCC-E

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C

Drilling

Application	
Code	Description
UD	Twist drills for tough materials
GD	Twist drills for high feeds
SU	Twist drill for general machining
SUK	Twist drill for cast iron
SL	Twist drill for deep hole drilling
SLK	Deep hole drill for cast iron
SP	Pilot drill
SH	Twist drill for hardened materials
SC	Twist drill for non-ferrous metals and cast iron
PA	Three-lips drill for non-ferrous metals and cast iron
PC	Straight flute drill for non-ferrous metals and cast iron

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D

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L/D relation		Angle	
Drill		NC tapping device	
Code	Description	Code	Description
03	3xD	90	90°
05	5xD	120	120°
08	8xD		
10	10xD		
12	12xD		
15	15xD		
20	20xD		
30	30xD		

With inner cooling

**6**

**7**

Bore diameter [mm]	
Code	Description
0200	2,0
0850	8,5
1800	18,0
...	

**8**

Shank diameter [mm]	
Code	Description
S	4,0

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