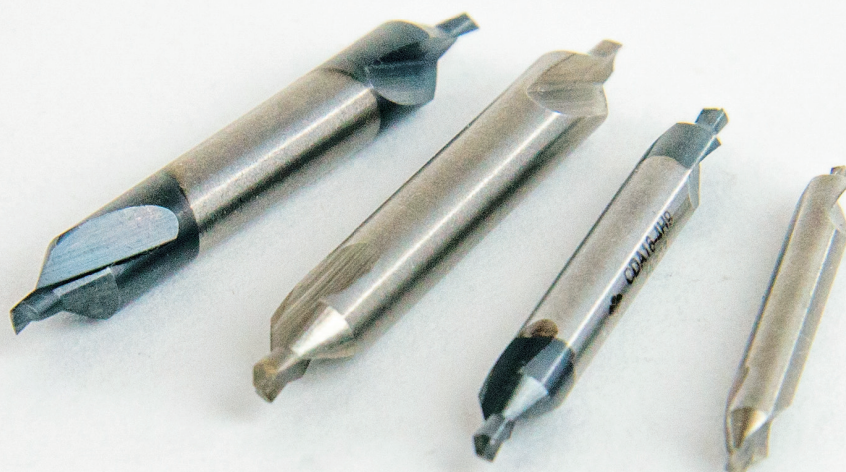


# HSS-E center drills

Center hole according to DIN332, form A



– EN –



ZCC Cutting Tools Europe GmbH

your Partner | your Value

# HSS-E center drills

Center hole according to DIN332, form A

## YOUR BENEFITS

- Best value for your money
- Consistent production results with high fracture toughness
- Universal tool for use with a range of materials

### Technical specifications

- Center drill DIN 333, form A
- Center point: 120°
- Countersink angle: 60°
- Coated HSS-E **HG23** and uncoated HSS-E **HD20**

### Ordering information

- Common sizes from Ø1-4 mm in assortment
- Available in sets of 10
- Now available from stock

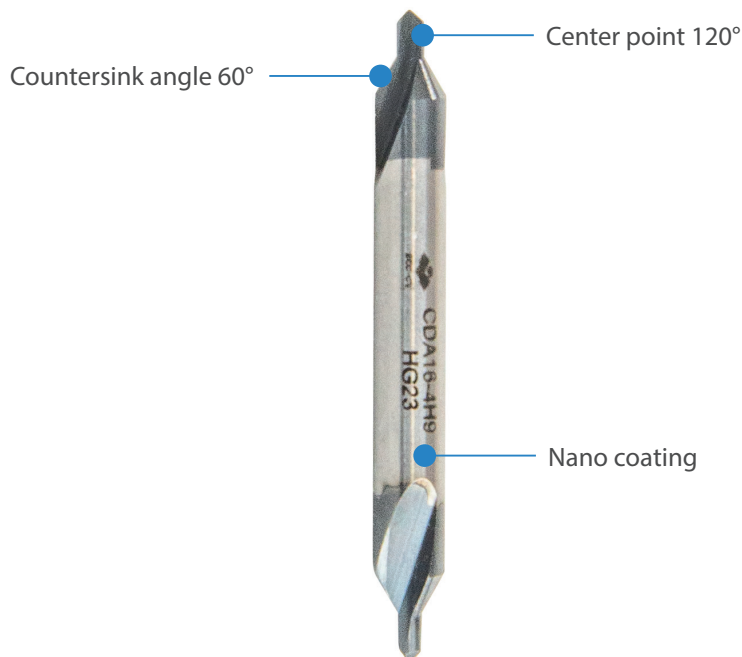


Fig.: CDA16-4H9-HG23

**CD**

**A**

**2**

**–**

**5**

**H9**

**HG23**

1

2

3

4

5

6

Type	
Code	Description
CD	Center drills DIN 333

1

Shank type	
Code	Description
A	Form A
R	Form B
5	Straight shank DIN 6535 HA
9	Conical shank
4	DIN 374
6	DIN 376
7	DIN 371
3	DIN 5156

2

Diameter d [mm]
--------------------

3

Shank diameter D [mm]
--------------------------

4

Shank tolerance
-----------------

5

Grade	
Code	Description
HG23	Coated
HD20	Uncoated

6

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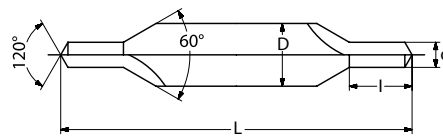
# HSS-E center drills

## HSS-E center drills

DIN 333, Form A

### CDA\*\*

- Shank type: DIN 333
- Form A
- Countersink angle 60°



Article	Dimensions [mm]				Grade	
	d	D	L	l	HG23	HD20
CDA1-315H9	1	3,15	31,5	1,3	●	●
CDA16-4H9	1,6	4	35,5	2	●	●
CDA2-5H9	2	5	40	2,5	●	●
CDA25-63H9	2,5	6,3	45	3,1	●	●
CDA315-8H9	3,15	8	50	3,9	●	●
CDA4-10H9	4	10	56	5	●	●

● Ex stock ○ On demand

\* With internal cooling

### Application field

P	M	K	N	S	H
✓	✓	✓	✓	✓	

✓ Very suitable

✓ Suitable

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**HSS machine taps**

Material group	Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed $v_c$ [m/min]				
					Uncoated		Coated		
					TiAlN				
					$v_c$ [m/min]	f [mm]	$v_c$ [m/min]	f [mm]	
					$\varnothing 1-4$ [mm]		$\varnothing 1-4$ [mm]		
<b>P</b>	Unalloyed steel	approx. 0,15 % C	annealed	125	1	55	0,04-0,15	75	0,05-0,18
		approx. 0,45 % C	annealed	190	2	50	0,04-0,15	70	0,05-0,18
		approx. 0,45 % C	tempered	250	3	48	0,04-0,15	70	0,05-0,18
		approx. 0,75 % C	annealed	270	4	45	0,04-0,15	65	0,05-0,18
		approx. 0,75 % C	tempered	300	5	42	0,04-0,15	50	0,05-0,18
	Low-alloyed steel		annealed	180	6	53	0,04-0,15	70	0,05-0,18
			tempered	275	7	45	0,04-0,15	60	0,05-0,18
			tempered	300	8	42	0,04-0,15	50	0,05-0,18
			tempered	350	9	40	0,04-0,15	45	0,05-0,18
	High-alloyed steel and high-alloyed tool steel		annealed	200	10	50	0,04-0,15	42	0,05-0,18
			hardened and tempered	325	11	30	0,04-0,15	35	0,05-0,18
<b>M</b>	Stainless steel	ferritic/martensitic	annealed	200	12	22	0,03-0,05	25	0,03-0,06
		martensitic	tempered	240	13	22	0,03-0,05	25	0,03-0,06
		austenitic	quench hardened	180	14	22	0,03-0,05	25	0,03-0,06
		austenitic-ferritic		230	15	22	0,03-0,05	25	0,03-0,06
<b>K</b>	Grey cast iron	perlitic/ferritic		180	16	50	0,028-0,13	85	0,03-0,17
		perlitic (martensitic)		260	17	42	0,028-0,13	80	0,03-0,17
	Cast iron with spheroidal graphite	ferritic		160	18	60	0,028-0,13	90	0,03-0,17
		perlitic		250	19	42	0,028-0,13	75	0,03-0,17
	Malleable cast iron	ferritic		130	20	55	0,028-0,13	75	0,03-0,17
		perlitic		230	21	40	0,028-0,13	65	0,03-0,17
<b>N</b>	Aluminium wrought alloys	cannot be hardened		60	22	130	0,01-0,11	130	0,012-0,13
		hardenable	hardened	100	23	130	0,01-0,11	130	0,012-0,13
	Cast aluminium alloys	$\leq 12\%$ Si, cannot be hardened		75	24	115	0,01-0,11	115	0,012-0,13
		$\leq 12\%$ Si, hardenable	hardened	90	25	100	0,01-0,11	100	0,012-0,13
		$> 12\%$ Si, cannot be hardened		130	26	80	0,01-0,11	80	0,012-0,13
	Copper and copper alloys (bronze/brass)	machining steel, PB > 1%		110	27	85	0,01-0,11	85	0,012-0,13
		CuZn, CuSnZn		90	28	100	0,01-0,11	100	0,012-0,13
		CuSn, Pb-free copper, electrolytic copper		100	29	90	0,01-0,11	90	0,012-0,13
<b>S</b>	Heat-resistant alloys	Fe-based alloys	annealed	200	30	30	0,004-0,03	38	0,004-0,03
			hardened	280	31	15	0,004-0,03	19	0,004-0,03
		Ni or Co bass	annealed	250	32	27	0,004-0,03	32	0,004-0,03
			hardened	350	33	16	0,004-0,03	20	0,004-0,03
			cast	320	34	15	0,004-0,03	15	0,004-0,03
	Titanium alloys	pure titanium		R <sub>m</sub> 400	35				
$\alpha$ and $\beta$ alloys		hardened	R <sub>m</sub> 1050	36					
<b>H</b>	Hardened steel		hardened and tempered	55 HRC	37				
			hardened and tempered	60 HRC	38				
	Hard cast iron		cast	400	39				
	Hardened cast iron		hardened and tempered	55 HRC	40				
<b>X</b>	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.

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