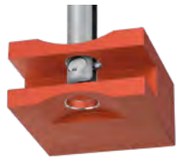
COFA

A stroke of genius for deburring even and uneven bore edges. Proven a thousand times over.

The advantages – Your benefit



Inaccessible bore edges are reliably machined without turning the workpiece, even when working with challenging materials.

The carbide blades are coated in accordance with material requirements and guarantee a long service life.

Uniform deburring of bore edges regardless of the height of the machining plane. This is particularly important for cast parts and parts with tolerance deviations.

The tool follows uneven edges and uneven bore edges sloped up to 30° and ensures clean deburring.

THE RANGE

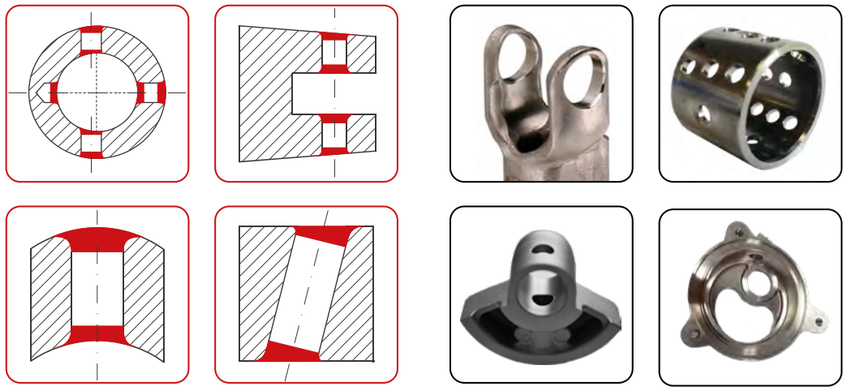
Standard version

Cassette tools
For installation in holder/combination tools for machining large bore diameters

Bore Ø range mm	Max. deburring size mm	Working length mm	Series	Catalogue page	Bore Ø range mm	Deburring capacity max. mm	Series	Catalogue page
Ø2.0–3.1	0.10	15.3	COFA C2	22	-	-	-	-
Ø3.0–4.1	0.15	20.8	COFA C3	24	-	-	-	-
Ø4.0–5.0	0.25	28.0	COFA 4M	26	-	-	-	-
Ø5.0–6.0	0.35	32.6	COFA 5M	28	-	-	-	-
Ø6.0–8.4	0.70	48.0	COFA C6	30	-	-	-	-
Ø8.0–12.4	0.90	61.0	COFA C8	32	> Ø10.0	0.70	C6 Cas.	40
Ø12.0–26.0	1.40	70.0	COFA C12	34	> Ø14.0	0.90	C8 Cas.	40
					> Ø20.0	1.40	C12 Cas.	40

For deburring cross bores: see **X-BORES** on page 222. **COFA-X:** see page 46.
For **thread series**: Page 38.
If the required tool is not included in the standard range above, our **INDIVIDUAL** range often has a possible solution. If required, we can also develop custom solutions that are fully tailored to your application.

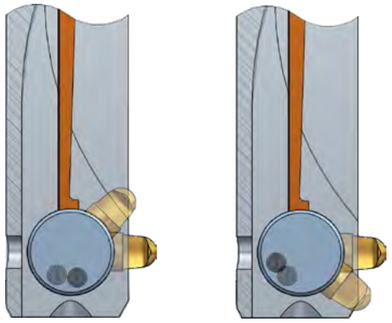
FIELD OF APPLICATION

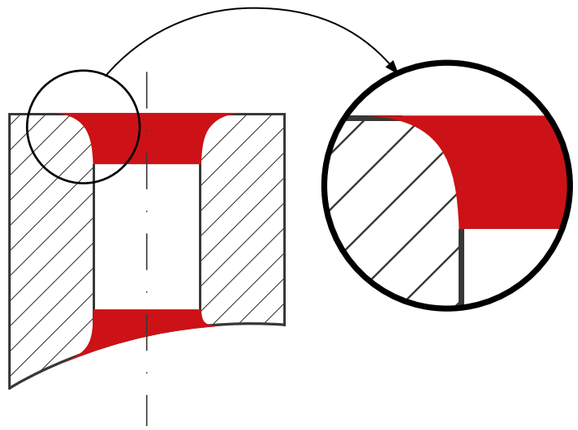


OPERATING PRINCIPLE

The COFA blade is spring-loaded in the tool body. This means that the cutting edge also follows uneven bore edges. The cutting edge removes the burr along with the burr root without creating a secondary burr. The blade pivots into the tool body as it enters the bore.

The result is a bore edge deburred with a radius form.

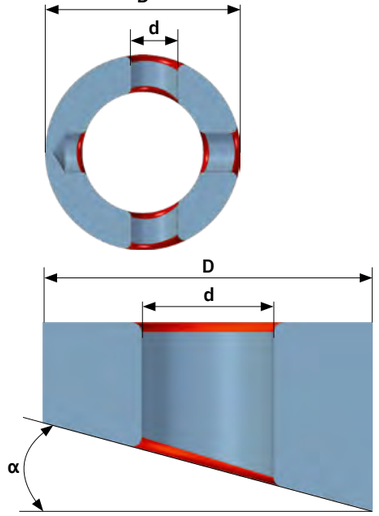




MAXIMUM UNEVENNESS

COFA is designed for machining uneven bore edges. The standard blade can reliably deburr uneven edges up to α ≤18°. This corresponds to a diameter ratio (d:D) of 0.5.

The range also includes blades with a clearance angle of up to 30° for greater unevenness. For larger irregularities, tools and blades from the INDIVIDUAL range, e.g. COFA-X, are used.



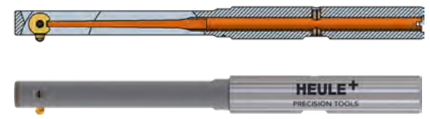
Calculation of cant angle

With the HEULE Tool Selector, you can easily calculate the angle of unevenness and at the same time determine the correct tool and blade.

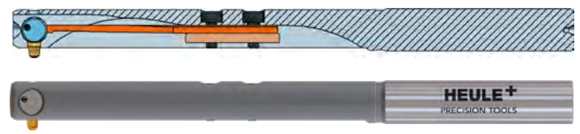
heule.com/en/tool-selector/cofa

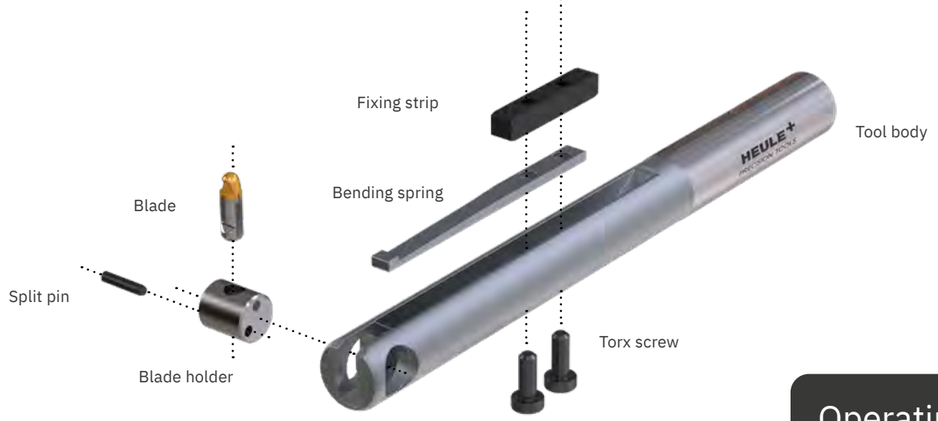
TOOL DESIGN

Simple, robust, reliable. The COFA tool family is made up of two types. In the **COFA C2/C3** and **4M/5M**, the blade is held directly in the tool body by a split pin.



With the **COFA C6** to **C12**, a separate blade is retained and guided by a solid blade holder.



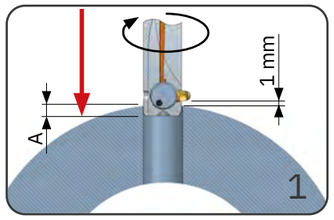


Operating instructions

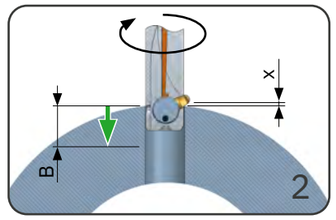
> Blade change
> Spring change

heule.com > Service > Media & download centre

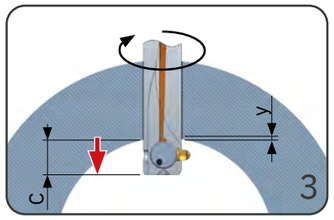
COFA PROCESS STEPS



- Rapid traverse to pos. **A** or 1.0 mm distance
- Spindle rotation clockwise
- External coolant on



- Working feed to **B +** x



- Rapid traverse to **C** + y (blade fold-out position)
- Dwell time 1 sec.

Example

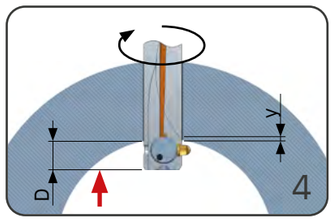
```
G0 Z+15.6
S800 M3
M8
```

```
G1 Z+8.5[1] F160
```

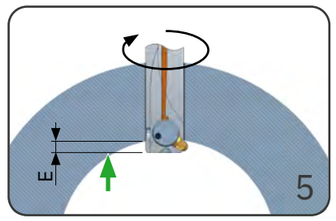
[1] 8.5=17.5-8.0-1.0

```
G0 Z+1.25[2]
G4 X1
```

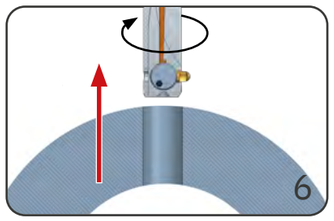
[2] 1.25=11.0-8.1-1.65



- Rapid traverse to **D** + y



- Working feed to **E**



- Rapid traverse out of the workpiece (outer edge + 2.0 mm)

```
G0 Z+3.25[3]
```

[3] 3.25=11.0-6.1-1.65

```
G1 Z+11.0[4]
```

[4] 11.0=11.0-0.0

```
G0 Z+19.50
```

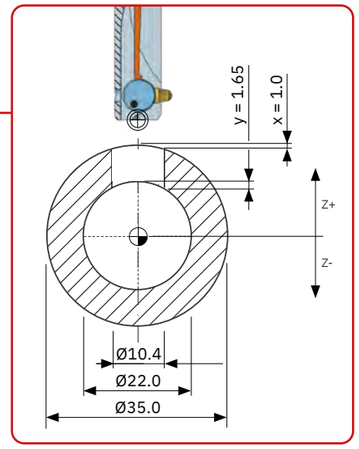
PROGRAMMING DIMENSION TABLE

Tool	A	B	C	D	E
COFA C2	1.7	4.5	4.5	4.3	1.5
COFA C3	2.5	6.0	6.0	5.5	2.0
COFA 4M	2.0	5.5	5.5	5.3	1.8
COFA 5M	2.8	7.0	6.9	6.4	2.2
COFA C6 Medium	1.1	6.3	6.5	4.9	-0.3
COFA C6 Large	1.1	6.8	6.8	4.9	-0.8
COFA C8 Medium	1.9	8.0	8.1	6.1	0
COFA C8 Large	1.9	8.8	8.5	6.1	-0.4
COFA C12 Medium	3.4	11.6	11.6	8.6	0.4
COFA C12 Large	3.4	13.0	12.5	8.6	-1.0

Important!

Watch out for uneven edges! If the bore edges are uneven, the unevenness must be taken into account in traverse distances. In the case of very uneven edges, we recommend traversing out of the bore when the spindle is stopped after machining has been completed.

APPLICATION AND PROGRAMMING EXAMPLE



Application data

Workpiece:	Outside Ø 35.0 mm / inside Ø 22.0 mm
Bore Ø:	Ø10.4 mm
Material:	P3 / steel C45
Machining:	both bore edges
Unevenness y:	Angle 15.9°

Tool and blade selection

Tool:	COFA C8/10.4/H
Blade:	C8-M-0006-T, medium, forward and backward cutting
Deburring Ø:	11.6 mm max.
Outside Ø:	Ø D2 = 13.2 mm (note interfering edge / inside Ø)

Cutting data

Cutting speed Vc:	20–60 m/min.
Working feed fz:	0.1–0.3 mm/rev

CUTTING DATA

	Description	Tensile str.	Hardness		Spring	C2–C3			COFA4M–C12		
		RM /MPA	(HB)	(HRC)		Vc	fz	B*	Vc	fz	B*
P0	Low-carbon steel, long-chipping, C <0.25%	<530	<125	–	H	20–60	0.05–0.15	A	20–60	0.1–0.3	T
P1	Low-carbon steel, short-chipping, C <0.25%	<530	<125	–	H	20–60	0.05–0.15	A	20–60	0.1–0.3	T
P2	Steel with carbon content C >0.25%	>530	<220	<25	H	20–60	0.05–0.15	A	20–60	0.1–0.3	T
P3	Alloy steel and tool steel, C >0.25%	600–850	<330	<35	H	20–60	0.05–0.15	A	20–60	0.1–0.3	T
P4	Alloy steel and tool steel, C >0.25%	850–1400	340–450	35–48	S	20–40	0.05–0.15	A	20–40	0.1–0.3	T
P5	Ferritic, martensitic and stainless PH steel	600–900	<330	<35	S	15–30	0.05–0.15	A	15–30	0.1–0.3	T
P6	High-strength ferritic, martensitic and PH stainless steel	900–1350	350–450	35–48	Z	15–30	0.05–0.15	A	15–30	0.1–0.3	T
M1	Austenitic stainless steel	<600	130–200	–	Z	10–20	0.05–0.15	A	10–20	0.1–0.3	T
M2	High-strength austenitic stainless steel	600–800	150–230	<25	Z1	10–20	0.05–0.15	A	10–20	0.1–0.3	T
M3	Duplex stainless steel	<800	135–275	<30	Z1	15–30	0.05–0.15	A	15–30	0.1–0.3	T
K1	Cast iron	125–500	120–290	<32	H	30–80	0.05–0.15	A	30–80	0.1–0.3	T
K2	Ductile cast iron up to medium strength	<600	130–260	<28	H	30–80	0.05–0.15	A	30–80	0.1–0.3	T
K3	High-strength cast iron and bainitic cast iron	>600	180–350	<43	H	30–80	0.05–0.15	D	30–80	0.1–0.3	T
N1	Wrought aluminium alloys	–	–	–	W	30–70	0.05–0.15	D	30–70	0.1–0.3	D
N2	Aluminium alloys with low Si content	–	–	–	W	30–70	0.05–0.15	D	30–70	0.1–0.3	D
N3	Aluminium alloys with high Si content	–	–	–	W	30–70	0.05–0.15	D	30–70	0.1–0.3	D
N4	Copper, brass and zinc base	–	–	–	W	30–70	0.05–0.15	D	30–70	0.1–0.3	D
S1	Iron-based heat-resistant alloys	500–1200	160–260	25–48	Z	15–30	0.05–0.15	A	15–30	0.1–0.3	T
S2	Cobalt-based heat-resistant alloys	1000–1450	250–450	25–48	Z	10–20	0.05–0.15	A	10–20	0.1–0.3	T
S3	Nickel-based heat-resistant alloys	600–1700	160–450	<48	Z	10–20	0.05–0.15	A	10–20	0.1–0.3	T
S4	Titanium and titanium alloys	900–1600	300–400	33–48	Z	10–20	0.05–0.15	A	10–20	0.1–0.3	T

* coating for blades

The cutting data listed are guide values! They depend on the amount of the unevenness of the bore edges (e.g. high slope > low cutting value).
For materials that are difficult to machine or uneven bore edges, we recommend applying cutting speeds that are at the lower end of the range.

Selecting the correct COFA tool

TOOL SELECTOR

The HEULE Tool Selector is the quickest and easiest way to find the right tool.

Send your search result along with your application data to your HEULE representative. They will check the application and offer you options if required.

If your search produces no results, please contact HEULE with your application data anyway. We also develop customised solutions and are happy to advise you.

TOOL TABLES

The right tool is primarily determined by the bore diameter to be machined. This table also shows the deburring diameter and the tool diameter.

The tool tables cover the standard range. The tool part numbers highlighted in green are available from stock.

In addition, COFA offers a selection of various blades and spring strengths to effectively cover the requirements based on the bore geometry, burr thickness and workpiece material.

If the standard does not fit your needs, please do not hesitate to contact your HEULE representative for advice, either using the enquiry form (www.heule.com > contact) or by telephone.

Tool Selector

> Step-by-step guide to find the right solution

heule.com/en/tool-selector/cofa

Tool Selector

Still have questions?

> HEULE Consulting and Support

heule.com/en/contact

CONFIGURING COFA TOOLS

1. Select tool incl. standard blade

Select the appropriate tool for the bore diameter and desired deburring size from the tool table.
Example: C6/8.0

Optional
2. Spring customisation

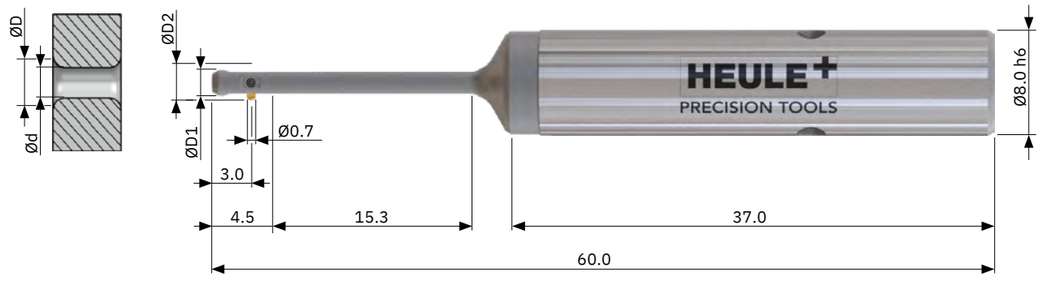
If the standard spring H is not suitable for your material, select a suitable spring from the cutting data table on page 19 and adjust the tool part number.
Example: C8/8.0/S

Optional
3. Blade customisation

If the standard blade is not suitable or you are not ordering any blades, add "OM" to the tool part number.
Example: C8/8.0/S-OM

Select the appropriate blade from the blade table and order it with the tool.
Example: C6-M-0006-D

COFA C2 Ø2.0 mm to 3.1 mm



Tool

Standard tool **with** C2-M-0006-A blade pre-mounted
- If you do not require a blade or require a different blade, order the tool with the suffix "-OM" (e.g.: C2/2.0/H-OM) and the blade separately.
- The Tool Selector calculates the blade clearance angle required for bore edges that are uneven.
- With spring type H for steel grades according to Cutting Data Table S. 19
- With cylindrical shank

Your bore Ø d	max. deburring Ø D	Working length	Tool Ø D1	Maximum Ø D2	Tool Part no.
2.0	2.2	15.3	1.95	2.7	C2/2.0/**H**
2.1	2.3	15.3	2.05	2.8	C2/2.1/H
2.2	2.4	15.3	2.15	2.9	C2/2.2/H
2.3	2.5	15.3	2.25	3.0	C2/2.3/H
2.4	2.6	15.3	2.35	3.1	C2/2.4/H
2.5	2.7	15.3	2.45	3.2	C2/2.5/H
2.6	2.8	15.3	2.55	3.3	C2/2.6/H
2.7	2.9	15.3	2.65	3.4	C2/2.7/H
2.8	3.0	15.3	2.75	3.5	C2/2.8/H
2.9	3.1	15.3	2.85	3.6	C2/2.9/H
3.0	3.2	15.3	2.95	3.7	C2/3.0/H
3.1	3.3	15.3	3.05	3.8	C2/3.1/H

Parts in stock highlighted in green

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Tool Selector –
Product selection made easy
heule.com/en/tool-selector/cofa

COFA

COFA C2 Ø2.0 mm to 3.1 mm

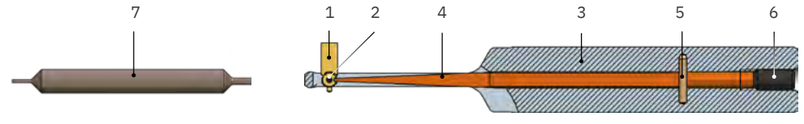
Blades

Clearance angle	Part no. forward and backward cutting		Part no. backward cutting only	
	Coating A for steel, titanium, Inconel	Coating D for aluminium	Coating A for steel, titanium, Inconel	Coating D for aluminium
10°	C2-M-0007-A	C2-M-0007-D	C2-M-0017-A	C2-M-0017-D
20°	**C2-M-0006-A**	C2-M-0006-D	C2-M-0016-A	C2-M-0016-D
25°	C2-M-0008-A	C2-M-0008-D	C2-M-0018-A	C2-M-0018-D
30°	C2-M-0009-A	C2-M-0009-D	C2-M-0019-A	C2-M-0019-D

Bending spring

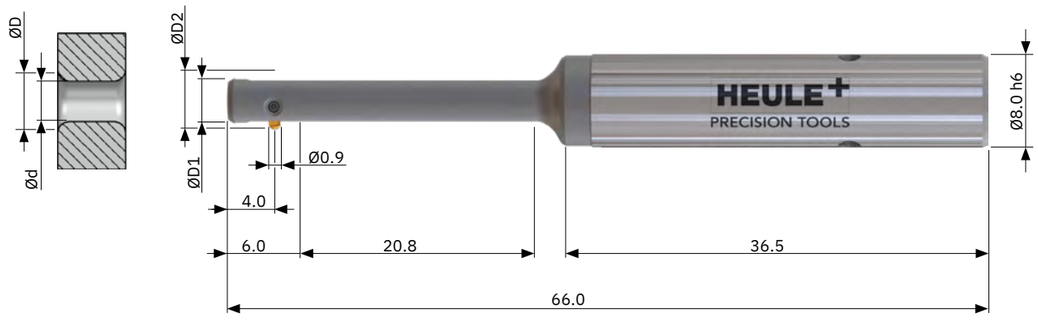
Index	Spring load	Part no.	Application
W2	soft (softer than W1)	C2-E-0011	In the cutting data table on page 19 you will find the spring loads suitable for the various workpiece materials.
W1	soft (softer than W)	C2-E-0012	
W	soft	C2-E-0013	
H	**hard**	**C2-E-0014**	
S	very hard	C2-E-0015	
Z	extra hard	C2-E-0016	
Z1	extra hard (harder than Z)	C2-E-0017	

Spare parts



Item	Description	Part no.
1	COFA C2 blade	see above
2	Split pin diameter 0.7x1.7	C2-E-0002
3	Tool body	upon request
4	Bending spring	see above
5	Cylinder pin diameter 1.0m6x6	GH-H-S-1017
6	Threaded pin M2.5x5	GH-H-S-0135
7	Assembly pin	C2-V-0001
	Allen key for item 6	GH-H-S-2106

COFA C3 Ø3.0 mm to 4.1 mm



Tool

Standard tool **with** C3-M-0006-A blade pre-mounted
- If you do not require a blade or require a different blade, order the tool with the suffix "-OM" (e.g.: C3/3.0/H-OM) and the blade separately.
- The Tool Selector calculates the blade clearance angle required for bore edges that are uneven.
- With spring type H for steel grades according to Cutting Data Table S. 19
- With cylindrical shank

Your bore Ø d	max. deburring Ø D	Working length	Tool Ø D1	Maximum Ø D2	Tool Part no.
3.0	3.3	20.8	2.95	4.0	C3/3.0/**H**
3.1	3.4	20.8	3.05	4.1	C3/3.1/H
3.2	3.5	20.8	3.15	4.2	C3/3.2/H
3.3	3.6	20.8	3.25	4.3	C3/3.3/H
3.4	3.7	20.8	3.35	4.4	C3/3.4/H
3.5	3.8	20.8	3.45	4.5	C3/3.5/H
3.6	3.9	20.8	3.55	4.6	C3/3.6/H
3.7	4.0	20.8	3.65	4.7	C3/3.7/H
3.8	4.1	20.8	3.75	4.8	C3/3.8/H
3.9	4.2	20.8	3.85	4.9	C3/3.9/H
4.0	4.3	20.8	3.95	5.0	C3/4.0/H
4.1	4.4	20.8	4.05	5.1	C3/4.1/H

Parts in stock highlighted in green

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Tool Selector –
Product selection made easy
heule.com/en/tool-selector/cofa

COFA

COFA C3 Ø3.0 mm to 4.1 mm

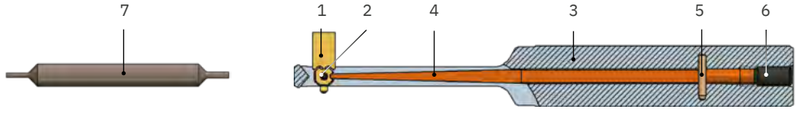
Blades

Clearance angle	Part no. forward and backward cutting		Part no. backward cutting only	
	Coating A for steel, titanium, Inconel	Coating D for aluminium	Coating A for steel, titanium, Inconel	Coating D for aluminium
10°	C3-M-0007-A	C3-M-0007-D	C3-M-0017-A	C3-M-0017-D
20°	**C3-M-0006-A**	C3-M-0006-D	C3-M-0016-A	C3-M-0016-D
25°	C3-M-0008-A	C3-M-0008-D	C3-M-0018-A	C3-M-0018-D
30°	C3-M-0009-A	C3-M-0009-D	C3-M-0019-A	C3-M-0019-D

Bending spring

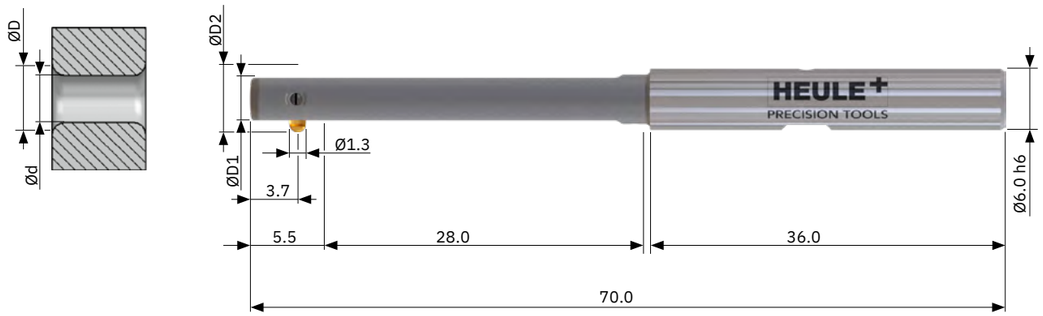
Index	Spring load	Part no.	Application
W2	soft (softer than W1)	C3-E-0011	In the cutting data table on page 19 you will find the spring loads suitable for the various workpiece materials.
W1	soft (softer than W)	C3-E-0012	
W	soft	C3-E-0013	
H	**hard**	**C3-E-0014**	
S	very hard	C3-E-0015	
Z	extra hard	C3-E-0016	
Z1	extra hard (harder than Z)	C3-E-0017	

Spare parts



Item	Description	Part no.
1	COFA C3 blade	see above
2	Split pin diameter 1.0x2.7	C3-E-0002
3	Tool body	upon request
4	Bending spring	see above
5	Cylinder pin diameter 1.0m6x6	GH-H-S-1017
6	Threaded pin M2.5x5	GH-H-S-0135
7	Assembly pin	C3-V-0001
	Allen key for item 6	GH-H-S-2106

COFA4M Ø4.0 mm to 5.1 mm



Tool

Standard tool **with** GH-C-M-0504 blade pre-mounted
- If you do not require a blade or require a different blade, order the tool with the suffix "-OM" (e.g.: COFA4M/4.0/H-OM) and the blade separately.
- The Tool Selector calculates the blade clearance angle required for bore edges that are uneven.
- With spring type H for steel grades according to Cutting Data Table S. 19
- With cylindrical shank

Your bore Ø d	max. deburring Ø D	Working length	Tool Ø D1	Maximum Ø D2	Tool Part no.
4.0–4.1	4.5	28.0	3.9	5.2	COFA4M/4.0/**H**
4.1–4.2	4.6	28.0	4.0	5.3	COFA4M/4.1/H
4.2–4.3	4.7	28.0	4.1	5.4	COFA4M/4.2/H
4.3–4.4	4.8	28.0	4.2	5.5	COFA4M/4.3/H
4.4–4.5	4.9	28.0	4.3	5.6	COFA4M/4.4/H
4.5–4.6	5.0	28.0	4.4	5.7	COFA4M/4.5/H
4.6–4.7	5.1	28.0	4.5	5.8	COFA4M/4.6/H
4.7–4.8	5.2	28.0	4.6	5.9	COFA4M/4.7/H
4.8–4.9	5.3	28.0	4.7	6.0	COFA4M/4.8/H
4.9–5.0	5.4	28.0	4.8	6.1	COFA4M/4.9/H
5.0–5.1	5.5	28.0	4.9	6.2	COFA4M/5.0/H

Parts in stock highlighted in green

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COFA4M Ø4.0 mm to 5.1 mm

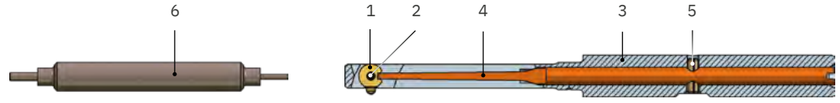
Blades

Clearance angle	Part no. forward and backward cutting		Part no. backward cutting only	
	Coating T for steel, titanium, Inconel	Coating D for aluminium	Coating T for steel, titanium, Inconel	Coating D for aluminium
10°	GH-C-M-0704	GH-C-M-0784	GH-C-M-0814	GH-C-M-0894
20°	**GH-C-M-0504**	GH-C-M-0584	GH-C-M-0914	GH-C-M-0994
25°	GH-C-M-0161	–	GH-C-M-0181	–
30°	GH-C-M-0148	–	GH-C-M-0182	–

Bending spring

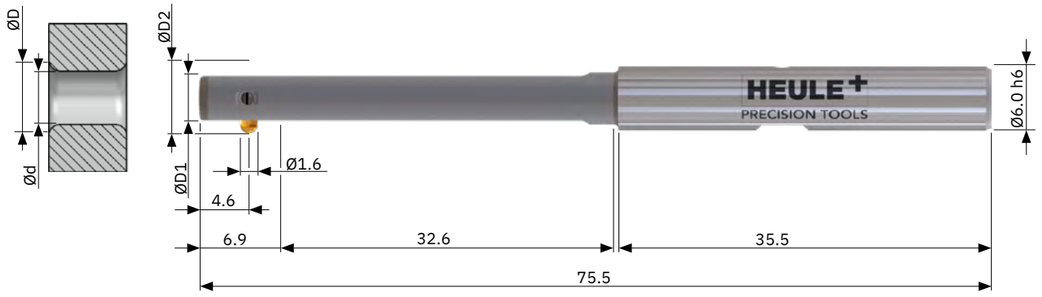
Index	Spring load	Part no.	Application
W2	soft (softer than W1)	GH-C-E-0341	In the cutting data table on page 19 you will find the spring loads suitable for the various workpiece materials.
W1	soft (softer than W)	GH-C-E-0340	
W	soft	GH-C-E-0342	
H	**hard**	GH-C-E-0343	
S	very hard	GH-C-E-0344	
Z	extra hard	GH-C-E-0345	
Z1	extra hard (harder than Z)	GH-C-E-0346	
Z2	extra hard (harder than Z1)	GH-C-E-0347	
Z3	extra hard (harder than Z2)	GH-C-E-0348	

Spare parts



Item	Description	Part no.
1	COFA 4M blade	see above
2	Split pin diameter 1.0x3.8	GH-C-E-0819
3	Tool body	upon request
4	Bending spring	see above
5	Roll pin diameter 1.5x5.0	GH-H-S-0902
6	Assembly pin	GH-C-V-0206

COFA5M Ø5.0 mm to 6.1 mm



Tool

Standard tool **with** GH-C-M-0505 blade pre-mounted
- If you do not require a blade or require a different blade, order the tool with the suffix "-OM" (e.g.: COFA5M/5.0/H-OM) and the blade separately.
- The Tool Selector calculates the blade clearance angle required for bore edges that are uneven.
- With spring type H for steel grades according to Cutting Data Table S. 19
- With cylindrical shank

Your bore Ø d	max. deburring Ø D	Working length	Tool Ø D1	Maximum Ø D2	Tool Part no.
5.0–5.1	5.7	32.6	4.9	6.6	COFA5M/5.0/**H**
5.1–5.2	5.8	32.6	5.0	6.7	COFA5M/5.1/H
5.2–5.3	5.9	32.6	5.1	6.8	COFA5M/5.2/H
5.3–5.4	6.0	32.6	5.2	6.9	COFA5M/5.3/H
5.4–5.5	6.1	32.6	5.3	7.0	COFA5M/5.4/H
5.5–5.6	6.2	32.6	5.4	7.1	COFA5M/5.5/H
5.6–5.7	6.3	32.6	5.5	7.2	COFA5M/5.6/H
5.7–5.8	6.4	32.6	5.6	7.3	COFA5M/5.7/H
5.8–5.9	6.5	32.6	5.7	7.4	COFA5M/5.8/H
5.9–5.0	6.6	32.6	5.8	7.5	COFA5M/5.9/H
6.0–6.1	6.7	32.6	5.9	7.6	COFA5M/6.0/H

Parts in stock highlighted in green

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COFA5M Ø5.0 mm to 6.1 mm

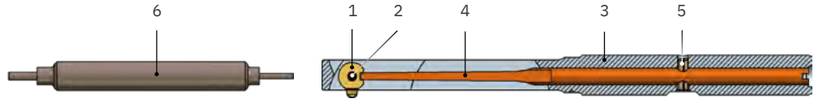
Blades

Clearance angle	Part no. forward and backward cutting		Part no. backward cutting only	
	Coating T for steel, titanium, Inconel	Coating D for aluminium	Coating T for steel, titanium, Inconel	Coating D for aluminium
10°	GH-C-M-0705	GH-C-M-0785	GH-C-M-0815	GH-C-M-0895
20°	**GH-C-M-0505**	GH-C-M-0585	GH-C-M-0915	GH-C-M-0995
25°	GH-C-M-0163	–	GH-C-M-0183	–
30°	GH-C-M-0150	–	GH-C-M-0184	–

Bending spring

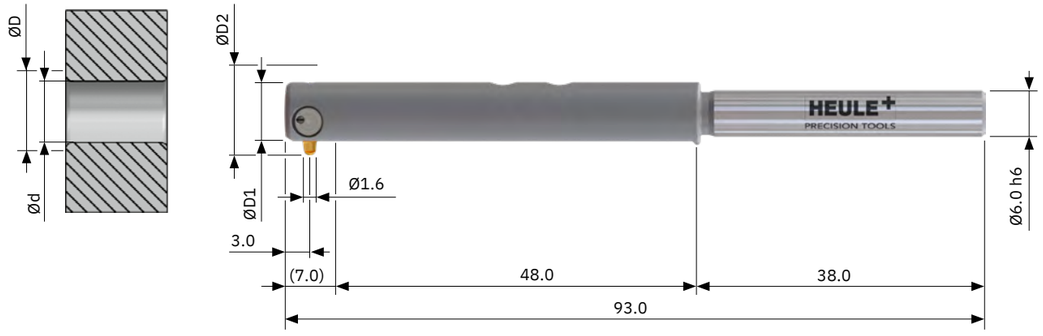
Index	Spring load	Part no.	Application
W2	soft (softer than W1)	GH-C-E-0351	In the cutting data table on page 19 you will find the spring loads suitable for the various workpiece materials.
W1	soft (softer than W)	GH-C-E-0350	
W	soft	GH-C-E-0352	
H	**hard**	GH-C-E-0353	
S	very hard	GH-C-E-0354	
Z	extra hard	GH-C-E-0355	
Z1	extra hard (harder than Z)	GH-C-E-0356	
Z2	extra hard (harder than Z1)	GH-C-E-0357	
Z3	extra hard (harder than Z2)	GH-C-E-0358	

Spare parts



Item	Description	Part no.
1	COFA 5M blade	see above
2	Split pin diameter 1.2x4.8	GH-C-E-0820
3	Tool body	upon request
4	Bending spring	see above
5	Roll pin diameter 1.5x5.0	GH-H-S-0902
6	Assembly pin	GH-C-V-0211

COFA C6 Ø6.0 mm to 8.4 mm



Tool

Standard tool **with** C6-M-0006-T blade pre-mounted
- If you do not require a blade or require a different blade, order the tool with the suffix "-OM" (e.g.: C6/6.0/H-OM) and the blade separately.
- The Tool Selector calculates the blade clearance angle required for bore edges that are uneven.
- With spring type H for steel grades according to Cutting Data Table S. 19
- With cylindrical shank. Optional, but not from stock: Weldon > suffix "-HB", Whistle Notch > suffix "-HE"

Your bore Ø d	max. deburring Ø D Medium/Large	Working length NL	Tool Ø D1	Maximum Ø D2 Medium/Large	Tool Part no.
6.0	7.0 / 7.4	48.0	5.8	8.3 / 8.7	C6/6.0/**H**
6.2	7.2 / 7.6	48.0	6.0	8.5 / 8.9	C6/6.2/H
6.4	7.4 / 7.8	48.0	6.2	8.7 / 9.1	C6/6.4/H
6.6	7.6 / 8.0	48.0	6.4	8.9 / 9.3	C6/6.6/H
6.8	7.8 / 8.2	48.0	6.6	9.1 /9.5	C6/6.8/H
7.0	8.0 / 8.4	48.0	6.8	9.3 / 9.7	C6/7.0/H
7.2	8.2 / 8.6	48.0	7.0	9.5 / 9.9	C6/7.2/H
7.4	8.4 / 8.8	48.0	7.2	9.7 / 10.1	C6/7.4/H
7.6	8.6 / 9.0	48.0	7.4	9.9 / 10.3	C6/7.6/H
7.8	8.8 / 9.2	48.0	7.6	10.1 / 10.5	C6/7.8/H
8.0	9.0 / 9.4	48.0	7.8	10.3 / 10.7	C6/8.0/H
8.2	9.2 / 9.6	48.0	8.0	10.5 / 10.9	C6/8.2/H
8.4	9.4 / 9.8	48.0	8.2	10.7 / 11.1	C6/8.4/H

Parts in stock highlighted in green

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COFA

COFA C6 Ø6.0 mm to 8.4 mm

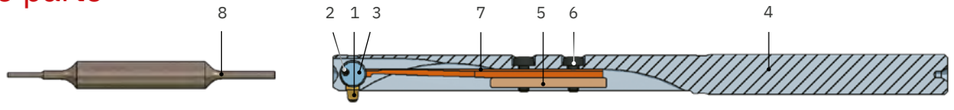
Blades

Clearance angle	Medium Part no. forward and backward cutting		Medium Part no. backward cutting only	
	Coating T for steel, titanium, Inconel	Coating D for aluminium	Coating T for steel, titanium, Inconel	Coating D for aluminium
10°	C6-M-0007-T	C6-M-0007-D	C6-M-0027-T	C6-M-0027-D
20°	**C6-M-0006-T**	C6-M-0006-D	C6-M-0026-T	C6-M-0026-D
25°	C6-M-0008-T	C6-M-0008-D	C6-M-0028-T	C6-M-0028-D
30°	C6-M-0009-T	C6-M-0009-D	C6-M-0029-T	C6-M-0029-D
	Large Part no. forward and backward cutting		**Large** Part no. backward cutting only	
10°	C6-M-0002-T	C6-M-0002-D	C6-M-0022-T	C6-M-0022-D
20°	C6-M-0001-T	C6-M-0001-D	C6-M-0021-T	C6-M-0021-D
25°	C6-M-0003-T	C6-M-0003-D	C6-M-0023-T	C6-M-0023-D
30°	C6-M-0004-T	C6-M-0004-D	C6-M-0024-T	C6-M-0024-D

Bending spring

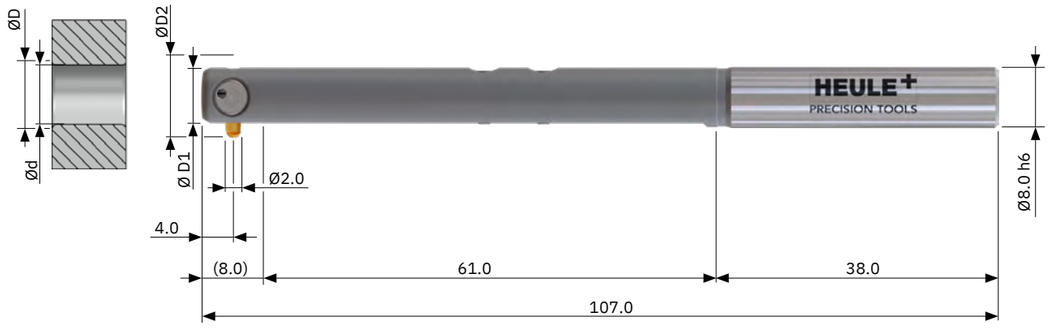
Index	Spring load	Part no.	Application
W2	soft (softer than W1)	C6-E-0006	In the cutting data table on page 19 you will find the spring loads suitable for the various workpiece materials.
W1	soft (softer than W)	C6-E-0007	
W	soft	C6-E-0008	
H	**hard**	C6-E-0009	
S	very hard	C6-E-0010	
Z	extra hard	C6-E-0011	
Z1	extra hard (harder than Z)	C6-E-0012	
Z2	extra hard (harder than Z1)	C6-E-0013	
Z3	extra hard (harder than Z2)	C6-E-0014	

Spare parts



Item	Description	Part no.
1	COFA C6 blade	see above
2	Roll pin diameter 1.0x8.0	C6-E-0003
3	Blade holder	C6-E-0001
4	Tool body	upon request
5	Fixing strip	GH-C-E-0812
6	Torx screw T5 / Allen key	GH-H-S-0803 / GH-H-S-2020
7	Bending spring	see above
8	Assembly pin	C6-V-0006

COFA C8 Ø8.0 mm to 12.4 mm



Tool

Standard tool **with** C8-M-0006-T blade pre-mounted
- If you do not require a blade or require a different blade, order the tool with the suffix "-OM" (e.g.: C8/8.0/H-OM) and the blade separately.
- The Tool Selector calculates the blade clearance angle required for bore edges that are uneven.
- With spring type H for steel grades according to Cutting Data Table S. 19
- With cylindrical shank. Optional, but not from stock: Weldon > suffix "-HB", Whistle Notch > suffix "-HE"

Your bore Ø d	max. deburring Ø D Medium/Large	Working length NL	Tool Ø D1	Maximum Ø D2 Medium/Large	Tool Part no.
8.0	9.2 / 9.8	61.0	7.8	10.8 / 11.4	C8/8.0/**H**
8.2	9.4 / 10.0	61.0	8.0	11.0 / 11.6	C8/8.2/H
8.4	9.6 / 10.2	61.0	8.2	11.2 / 11.8	C8/8.4/H
8.6	9.8 / 10.4	61.0	8.4	11.4 / 12.0	C8/8.6/H
8.8	10.0 / 10.6	61.0	8.6	11.6 / 12.2	C8/8.8/H
9.0	10.2 / 10.8	61.0	8.8	11.8 / 12.4	C8/9.0/H
9.2	10.4 / 11.0	61.0	9.0	12.0 / 12.6	C8/9.2/H
9.4	10.6 / 11.2	61.0	9.2	12.2 / 12.8	C8/9.4/H
9.6	10.8 / 11.4	61.0	9.4	12.4 / 13.0	C8/9.6/H
9.8	11.0 / 11.6	61.0	9.6	12.6 / 13.2	C8/9.8/H
10.0	11.2 / 11.8	61.0	9.8	12.8 / 13.4	C8/10.0/H
10.2	11.4 / 12.0	61.0	10.0	13.0 / 13.6	C8/10.2/H
10.4	11.6 / 12.2	61.0	10.2	13.2 / 13.8	C8/10.4/H
10.6	11.8 / 12.4	61.0	10.4	13.4 / 14.0	C8/10.6/H
10.8	12.0 / 12.6	61.0	10.6	13.6 / 14.2	C8/10.8/H
11.0	12.2 / 12.8	61.0	10.8	13.8 / 14.4	C8/11.0/H
11.2	12.4 / 13.0	61.0	11.0	14.0 / 14.6	C8/11.2/H
11.4	12.6 / 13.2	61.0	11.2	14.2 / 14.8	C8/11.4/H
11.6	12.8 / 13.4	61.0	11.4	14.4 / 15.0	C8/11.6/H
11.8	13.0 / 13.6	61.0	11.6	14.6 / 15.2	C8/11.8/H
12.0	13.2 / 13.8	61.0	11.8	14.8 / 15.4	C8/12.0/H
12.2	13.4 / 14.0	61.0	12.0	15.0 / 15.6	C8/12.2/H
12.4	13.6 / 14.2	61.0	12.2	15.2 / 15.8	C8/12.4/H

Parts in stock highlighted in green

COFA

COFA C8 Ø8.0 mm to 12.4 mm

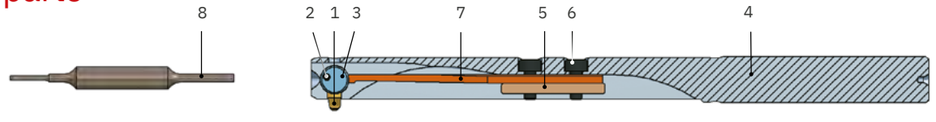
Blades

Clearance angle	Medium Part no. forward and backward cutting		Medium Part no. backward cutting only	
	Coating T for steel, titanium, Inconel	Coating D for aluminium	Coating T for steel, titanium, Inconel	Coating D for aluminium
10°	C8-M-0007-T	C8-M-0007-D	C8-M-0027-T	C8-M-0027-D
20°	**C8-M-0006-T**	C8-M-0006-D	C8-M-0026-T	C8-M-0026-D
25°	C8-M-0008-T	C8-M-0008-D	C8-M-0028-T	C8-M-0028-D
30°	C8-M-0009-T	C8-M-0009-D	C8-M-0029-T	C8-M-0029-D
	Large Part no. forward and backward cutting		**Large** Part no. backward cutting only	
10°	C8-M-0002-T	C8-M-0002-D	C8-M-0022-T	C8-M-0022-D
20°	C8-M-0001-T	C8-M-0001-D	C8-M-0021-T	C8-M-0021-D
25°	C8-M-0003-T	C8-M-0003-D	C8-M-0023-T	C8-M-0023-D
30°	C8-M-0004-T	C8-M-0004-D	C8-M-0024-T	C8-M-0024-D

Bending spring

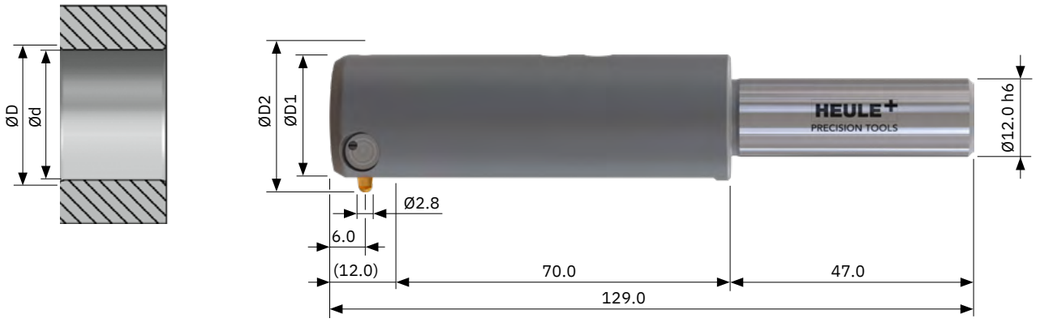
Index	Spring load	Part no.	Application
W2	soft (softer than W1)	C8-E-0006	In the cutting data table on page 19 you will find the spring loads suitable for the various workpiece materials.
W1	soft (softer than W)	C8-E-0007	
W	soft	C8-E-0008	
H	**hard**	C8-E-0009	
S	very hard	C8-E-0010	
Z	extra hard	C8-E-0011	
Z1	extra hard (harder than Z)	C8-E-0012	
Z2	extra hard (harder than Z1)	C8-E-0013	
Z3	extra hard (harder than Z2)	C8-E-0014	

Spare parts



Item	Description	Part no.
1	COFA C8 blade	see above
2	Split pin diameter 1.2x10.0	C8-E-0003
3	Blade holder	C8-E-0001
4	Tool body	upon request
5	Terminal strip	GH-C-E-0808
6	Cylinder screw M2x5.0 / Allen key	GH-H-S-0517 / GH-H-S-2105
7	Bending spring	see above
8	Assembly pin	C8-V-0005

COFA C12 Ø12.0 mm to 19.5 mm



Tool

Standard tool **with** C12-M-0006-T blade pre-mounted
- If you do not require a blade or require a different blade, order the tool with the suffix "-OM" (e.g.: C12/12.0/H-OM) and the blade separately.
- The Tool Selector calculates the blade clearance angle required for bore edges that are uneven.
- With spring type H for steel grades according to Cutting Data Table S. 19
- With cylindrical shank. Optional, but not from stock: Weldon > suffix "-HB", Whistle Notch > suffix "-HE"

Your bore Ø d	max. deburring Ø D Medium/Large	Working length NL	Tool Ø D1	Maximum Ø D2 Medium/Large	Tool Part no.
12.0	13.6 / 14.8	70.0	11.8	15.7 / 17.0	C12/12.0/**H**
12.5	14.1 / 15.3	70.0	12.3	16.2 / 17.5	C12/12.5/H
13.0	14.6 / 15.8	70.0	12.8	16.7 / 18.0	C12/13.0/H
13.5	15.1 / 16.3	70.0	13.3	17.2 / 18.5	C12/13.5/H
14.0	15.6 / 16.8	70.0	13.8	17.7 / 19.0	C12/14.0/H
14.5	16.1 / 17.3	70.0	14.3	18.2 / 19.5	C12/14.5/H
15.0	16.6 / 17.8	70.0	14.8	18.7 / 20.0	C12/15.0/H
15.5	17.1 / 18.3	70.0	15.3	19.2 / 20.5	C12/15.5/H
16.0	17.6 / 18.8	70.0	15.8	19.7 / 21.0	C12/16.0/H
16.5	18.1 / 19.3	70.0	16.3	20.2 / 21.5	C12/16.5/H
17.0	18.6 / 19.8	70.0	16.8	20.7 / 22.0	C12/17.0/H
17.5	19.1 / 20.3	70.0	17.3	21.2 / 22.5	C12/17.5/H
18.0	19.6 / 20.8	70.0	17.8	21.7 / 23.0	C12/18.0/H
18.5	20.1 / 21.3	70.0	18.3	22.2 / 23.5	C12/18.5/H
19.0	20.6 / 21.8	70.0	18.8	22.7 / 24.0	C12/19.0/H
19.5	21.1 / 22.3	70.0	19.3	23.2 / 24.5	C12/19.5/H

Parts in stock highlighted in green

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COFA

COFA C12 Ø12.0 mm to 19.5 mm

Blades

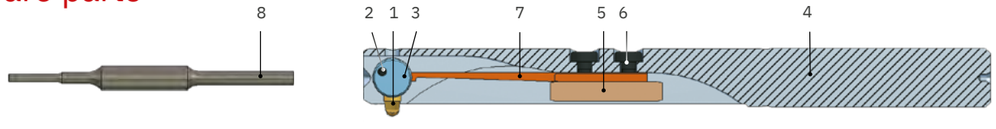
Clearance angle	Medium Part no. forward and backward cutting: Coating T for steel, titanium, Inconel	Medium Part no. forward and backward cutting: Coating D for aluminium	Medium Part no. backward cutting only: Coating T for steel, titanium, Inconel	Medium Part no. backward cutting only: Coating D for aluminium
10°	C12-M-0007-T	C12-M-0007-D	C12-M-0027-T	C12-M-0027-D
20°	**C12-M-0006-T**	C12-M-0006-D	C12-M-0026-T	C12-M-0026-D
25°	C12-M-0008-T	C12-M-0008-D	C12-M-0028-T	C12-M-0028-D
30°	C12-M-0009-T	C12-M-0009-D	C12-M-0029-T	C12-M-0029-D

	Large Part no. forward and backward cutting		Large Part no. backward cutting only	
10°	C12-M-0002-T	C12-M-0002-D	C12-M-0022-T	C12-M-0022-D
20°	C12-M-0001-T	C12-M-0001-D	C12-M-0021-T	C12-M-0021-D
25°	C12-M-0003-T	C12-M-0003-D	C12-M-0023-T	C12-M-0023-D
30°	C12-M-0004-T	C12-M-0004-D	C12-M-0024-T	C12-M-0024-D

Bending spring

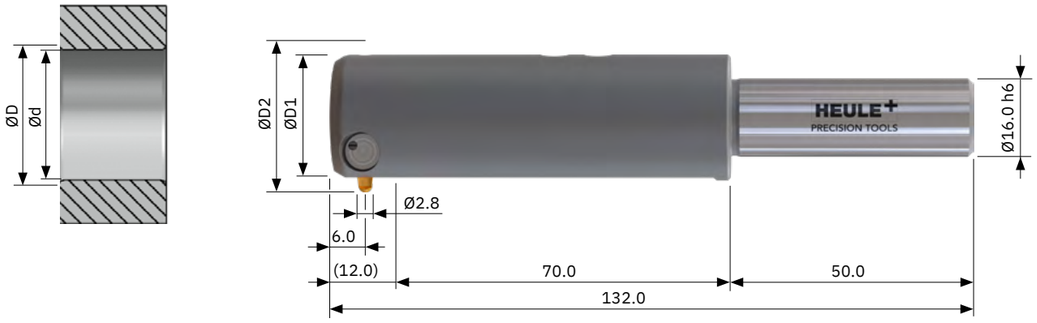
Index	Spring load	Part no.	Application
W2	soft (softer than W1)	C12-E-0006	In the cutting data table on page 19 you will find the spring loads suitable for the various workpiece materials.
W1	soft (softer than W)	C12-E-0007	
W	soft	C12-E-0008	
H	**hard**	C12-E-0009	
S	very hard	C12-E-0010	
Z	extra hard	C12-E-0011	
Z1	extra hard (harder than Z)	C12-E-0012	
Z2	extra hard (harder than Z1)	C12-E-0013	
Z3	extra hard (harder than Z2)	C12-E-0014	

Spare parts



Item	Description	Part no.
1	COFA C12 blade	see above
2	Split pin diameter 1.8x15.0	C12-E-0003
3	Blade holder	C12-E-0001
4	Tool body	upon request
5	Terminal strip	GH-C-E-0800
6	Cylinder screw M3x8.0 / Allen key	GH-H-S-0530 / GH-H-S-2102
7	Bending spring	see above
8	Assembly pin	C12-V-0005

COFA C12 Ø20.0 mm to 26.0 mm



Tool

Standard tool **with** C12-M-0006-T blade pre-mounted
- If you do not require a blade or require a different blade, order the tool with the suffix "-OM" (e.g.: C12/20.0/H-OM) and the blade separately.
- The Tool Selector calculates the blade clearance angle required for bore edges that are uneven.
- With spring type H for steel grades according to Cutting Data Table S. 19
- With cylindrical shank. Optional, but not from stock: Weldon > suffix "-HB", Whistle Notch > suffix "-HE"

Your bore Ø d	max. deburring Ø D Medium/Large	Working length NL	Tool Ø D1	Maximum Ø D2 Medium/Large	Tool Part no.
20.0	21.6 / 22.8	70.0	19.8	23.7 / 25.0	C12/20.0/**H**
20.5	22.1 / 23.3	70.0	20.3	24.2 / 25.5	C12/20.5/H
21.0	22.6 / 23.8	70.0	20.8	24.7 / 26.0	C12/21.0/H
21.5	23.1 / 24.3	70.0	21.3	25.2 / 26.5	C12/21.5/H
22.0	23.6 / 24.8	70.0	21.8	25.7 / 27.0	C12/22.0/H
22.5	24.1 / 25.3	70.0	22.3	26.2 / 27.5	C12/22.5/H
23.0	24.6 / 25.8	70.0	22.8	26.7 / 28.0	C12/23.0/H
23.5	25.1 / 26.3	70.0	23.3	27.2 / 28.5	C12/23.5/H
24.0	25.6 / 26.8	70.0	23.8	27.7 / 29.0	C12/24.0/H
24.5	26.1 / 27.3	70.0	24.3	28.2 / 29.5	C12/24.5/H
25.0	26.6 / 27.8	70.0	24.8	28.7 / 30.0	C12/25.0/H
25.5	27.1 / 28.3	70.0	25.3	29.2 / 30.5	C12/25.5/H
26.0	27.6 / 28.8	70.0	25.8	29.7 / 31.0	C12/26.0/H
>26.0	see cassette solutions page 40				

Parts in stock highlighted in green

Programming
Page 19

Cutting data and spring selection
Page 19

Tool Selector –
Product selection made easy
heule.com/en/tool-selector/cofa

COFA

COFA C12 Ø20.0 mm to 26.0 mm

Blades

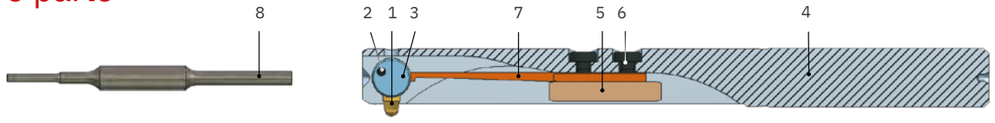
Clearance angle	Medium Part no. forward and backward cutting: Coating T for steel, titanium, Inconel	Medium Part no. forward and backward cutting: Coating D for aluminium	Medium Part no. backward cutting only: Coating T for steel, titanium, Inconel	Medium Part no. backward cutting only: Coating D for aluminium
10°	C12-M-0007-T	C12-M-0007-D	C12-M-0027-T	C12-M-0027-D
20°	**C12-M-0006-T**	C12-M-0006-D	C12-M-0026-T	C12-M-0026-D
25°	C12-M-0008-T	C12-M-0008-D	C12-M-0028-T	C12-M-0028-D
30°	C12-M-0009-T	C12-M-0009-D	C12-M-0029-T	C12-M-0029-D

	Large Part no. forward and backward cutting		Large Part no. backward cutting only	
10°	C12-M-0002-T	C12-M-0002-D	C12-M-0022-T	C12-M-0022-D
20°	C12-M-0001-T	C12-M-0001-D	C12-M-0021-T	C12-M-0021-D
25°	C12-M-0003-T	C12-M-0003-D	C12-M-0023-T	C12-M-0023-D
30°	C12-M-0004-T	C12-M-0004-D	C12-M-0024-T	C12-M-0024-D

Bending spring

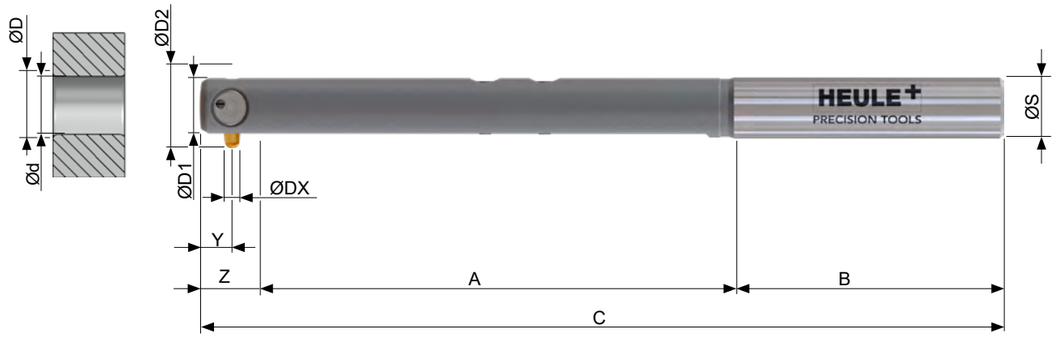
Index	Spring load	Part no.	Application
W2	soft (softer than W1)	C12-E-0006	In the cutting data table on page 19 you will find the spring strengths suitable for the various workpiece materials.
W1	soft (softer than W)	C12-E-0007	
W	soft	C12-E-0008	
H	**hard**	C12-E-0009	
S	very hard	C12-E-0010	
Z	extra hard	C12-E-0011	
Z1	extra hard (harder than Z)	C12-E-0012	
Z2	extra hard (harder than Z1)	C12-E-0013	
Z3	extra hard (harder than Z2)	C12-E-0014	

Spare parts



Item	Description	Part no.
1	COFA C12 blade	see above
2	Split pin diameter 1.8x15.0	C12-E-0003
3	Blade holder	C12-E-0001
4	Tool body	upon request
5	Terminal strip	GH-C-E-0800
6	Cylinder screw M3x8.0 / Allen key	GH-H-S-0530 / GH-H-S-2102
7	Bending spring	see above
8	Assembly pin	C12-V-0005

COFA thread series M8 to M20



Tool

The COFA thread series tool is specially designed for deburring threaded holes and is used after drilling the hole and before tapping. The deburring dimensions correspond to DIN 13-1 (ISO 68). The tools are only recommended for applications with uneven edges to a limited extent, because they impact the deburring diameter.

Tools **with**:
- Standard blade, forward and backward cutting, conditionally suitable for high-strength materials. If you do not require a blade or require a different blade, order the tool with the suffix "-OM" (e.g: C6/M8/H-OM) and the blade separately.
- Standard spring type H for steel grades according to Cutting Data Table S. 19
- With cylindrical shank. Optional, but not from stock: Weldon > suffix "-HB", Whistle Notch > suffix "-HE"

Thread size	Bore Ø d	Deburring Ø D max.	Tool Ø D1	Maximum Ø D2	Shank Ø S	Tool Part no.
M8	6.8	8.2	6.5	9.5	6.0 h6	C6/M8/**H**
M10	8.5	10.4	8.2	12.0	8.0 h6	C8/M10/H
M12	10.2	12.1	9.9	13.7	8.0 h6	C8/M12/H
M16	14.0	16.6	13.7	18.8	12.0 h6	C12/M16/H
M20	17.5	20.3	17.1	22.5	12.0 h6	C12/M20/H

Parts in stock highlighted in green

Dimension table

Thread size	A	B	C	Ø DX	Y	Z
M8	48.2	38.0	93.0	1.6	3.0	6.8
M10	61.0	38.0	107.5	2.0	4.0	8.5
M12	61.0	38.0	107.5	2.0	4.0	8.5
M16	69.2	47.0	128.7	2.8	6.0	12.5
M20	69.2	47.0	128.7	2.8	6.0	12.5

COFA

COFA thread series M8 to M20

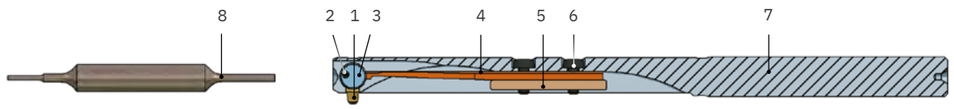
Blades

	Part no. forward and backward cutting		Part no. backward cutting only	
	Coating T for steel, titanium, Inconel	Coating D for aluminium	Coating T for steel, titanium, Inconel	Coating D for aluminium
M8	C6-M-0001-T	C6-M-0001-D	C6-M-0021-T	C6-M-0021-D
M10	C8-M-0001-T	C8-M-0001-D	C8-M-0021-T	C8-M-0021-D
M12	C8-M-0001-T	C8-M-0001-D	C8-M-0021-T	C8-M-0021-D
M16	C12-M-0001-T	C12-M-0001-D	C12-M-0021-T	C12-M-0021-D
M20	C12-M-0001-T	C12-M-0001-D	C12-M-0021-T	C12-M-0021-D

Bending spring

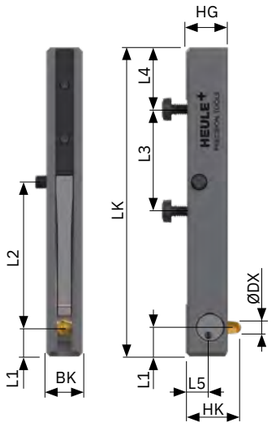
Index	Spring load	Part no. M8	Part no. M10/M12	Part no. M16/M20	Application
W2	soft (softer than W1)	C6-E-0006	C8-E-0006	C12-E-0006	In the cutting data table on page 19 you will find the spring loads suitable for the various work piece materials.
W1	soft (softer than W)	C6-E-0007	C8-E-0007	C12-E-0007	
W	soft	C6-E-0008	C8-E-0008	C12-E-0008	
H	**hard**	C6-E-0009	C8-E-0009	C12-E-0009	
S	very hard	C6-E-0010	C8-E-0010	C12-E-0010	
Z	extra hard	C6-E-0011	C8-E-0011	C12-E-0011	
Z1	extra hard (harder than Z)	C6-E-0012	C8-E-0012	C12-E-0012	
Z2	extra hard (harder than Z1)	C6-E-0013	C8-E-0013	C12-E-0013	
Z3	extra hard (harder than Z2)	C6-E-0014	C8-E-0014	C12-E-0014	

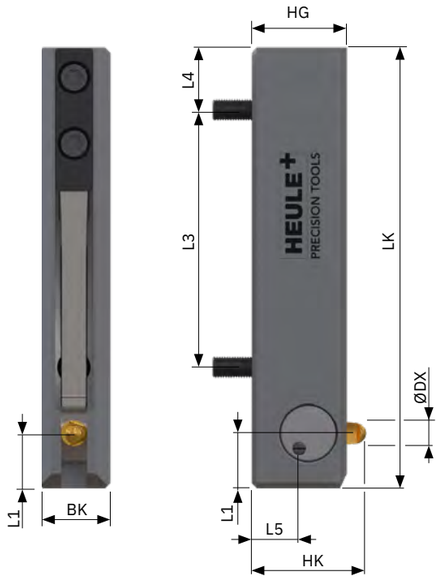
Spare parts



Item	Description	M8	M10/M12	M16/M20
1	Blade	see above	see above	see above
2	Split pin	C6-E-0003	C8-E-0003	C12-E-0003
3	Blade holder	C6-E-0001	C8-E-0001	C12-E-0001
4	Bending spring	see above	see above	see above
5	Terminal strip	GH-C-E-0812	GH-C-E-0808	GH-C-E-0800
6	Cylinder screw Allen key	GH-H-S-0803 GH-H-S-2006	GH-H-S-0517 GH-H-S-2105	GH-H-S-0530 GH-H-S-2102
7	Tool body	C6-G-0030	Ø8.4: C8-G-0030 Ø10.1: C8-G-0031	Ø13.9: C12-G-0031 Ø17.3: C12-G-0032
8	Assembly pin	C6-V-0006	C8-V-0005	C12-V-0005

COFA cassette systems C6, C8 and C12





Tool

The COFA cassette is used for installation in combination tools and cassette holders. The required cassette holder can be ordered from HEULE or manufactured by the customer according to the specifications on page 42.

Standard tool **without** blades
- The blades must always be ordered separately.
- With standard spring type H for steel grades according to Cutting Data Table on page 19

Cassette size	from bore Ø d	Deburring size max.	Tool w/o blade Part no.
C6	10.0	0.7	C6-O-0900/H
C8	14.0	0.9	C8-O-0900/H
C12	20.0	1.4	C12-O-0900/H

Parts in stock highlighted in green

Dimensions	BK	HG	LK	HK Blade M	HK Blade L	ØDX	L1	L2	L3	L4	L5
C6	5.0	5.8	42.5	7.6	7.8	Ø1.6	4.0	20.0	14.0	8.5	3.3
C8	8.0	8.5	51.5	10.6	11.0	Ø2.0	4.0	-	29.6	9.5	5.2
C12	10.0	13.0	60.0	15.6	16.2	Ø2.8	7.5	-	35.0	8.5	7.7

COFA

COFA cassette systems C6, C8 and C12

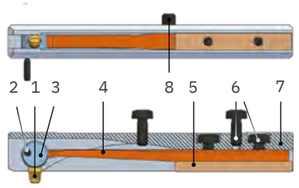
Blades

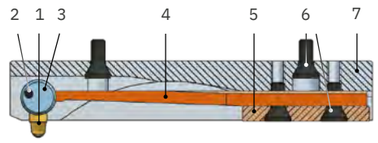
	Part no. forward and backward cutting		Part no. backward cutting only	
	Coating T for steel, titanium, Inconel	Coating D for aluminium	Coating T for steel, titanium, Inconel	Coating D for aluminium
C6	see page 31	see page 31	see page 31	see page 31
C8	see page 33	see page 33	see page 33	see page 33
C12	see page 35	see page 35	see page 35	see page 35

Bending spring

Index	Spring load	Part no. C6	Part no. C8	Part no. C12	Application
W2	soft (softer than W1)	C6-E-0006	C8-E-0006	C12-E-0006	In the cutting data table on page 19 you will find the spring loads suitable for the various workpiece materials.
W1	soft (softer than W)	C6-E-0007	C8-E-0007	C12-E-0007	
W	soft	C6-E-0008	C8-E-0008	C12-E-0008	
H	**hard**	C6-E-0009	C8-E-0009	C12-E-0009	
S	very hard	C6-E-0010	C8-E-0010	C12-E-0010	
Z	extra hard	C6-E-0011	C8-E-0011	C12-E-0011	
Z1	extra hard (harder than Z)	C6-E-0012	C8-E-0012	C12-E-0012	
Z2	extra hard (harder than Z1)	C6-E-0013	C8-E-0013	C12-E-0013	
Z3	extra hard (harder than Z2)	C6-E-0014	C8-E-0014	C12-E-0014	

Spare parts



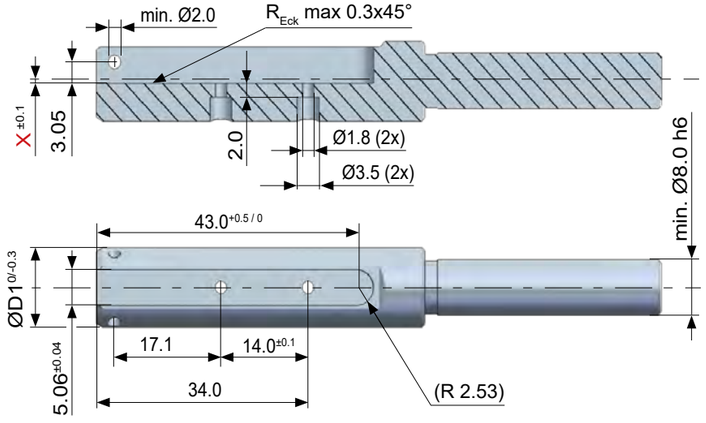


Item	Description	C6	C8	C12
1	COFA blade	see above	see above	see above
2	Split pin	C6-E-0003	C8-E-0003	C12-E-0003
3	Blade holder	C6-E-0001	C8-E-0001	C12-E-0001
4	Bending spring	see above	see above	see above
5	Terminal strip	GH-C-E-0812	C8-E-0800	C12-E-0800
6	Cylinder screw	GH-H-S-0803	GH-H-S-0050	GH-H-S-0012
7	Tool body	C6-G-0900	C8-G-0900	C12-G-0900
8	Set screw M2x2	GH-H-S-0137	–	–
	Assembly pin	C6-V-0006	C8-V-0005	C12-V-0005

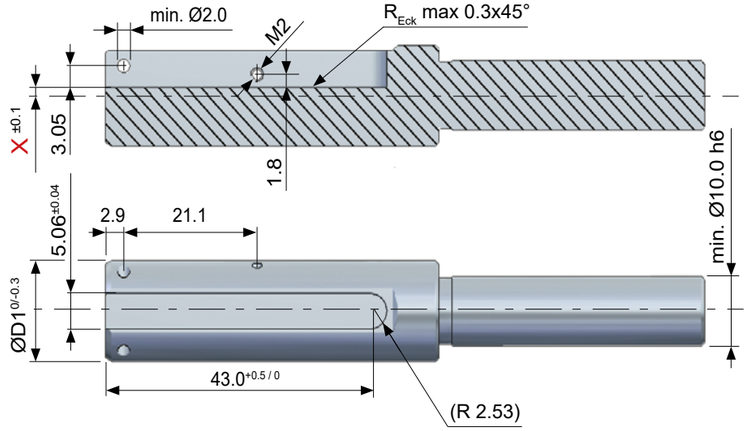
COFA cassette systems C6 and C8/C12

INSTALLATION INSTRUCTIONS

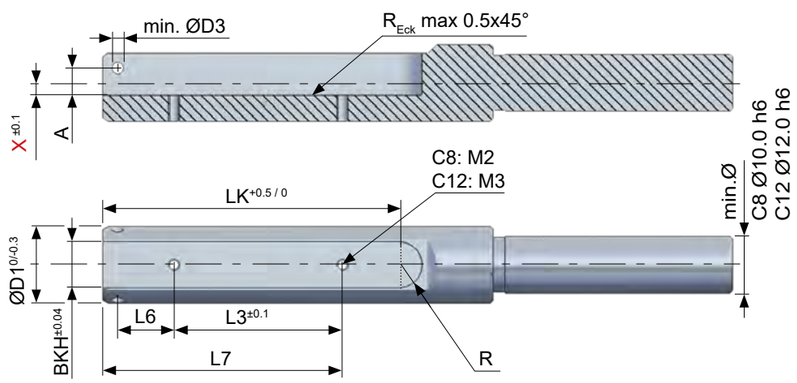
C6
Ø10.0–14.99



C6
>Ø15.0



C8
C12



COFA cassette systems C6 and C8/C12

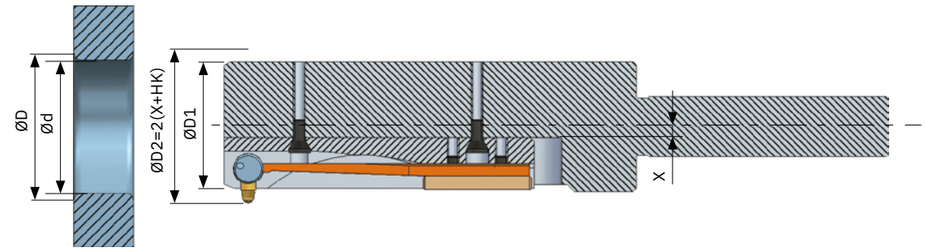
Limits

	C6		C8		C12	
from bore Ø	Ø10.0		Ø14.0		Ø20.0	
Blades	Medium	Large	Medium	Large	Medium	Large
max. Ø D	Ød + 1.0	Ød + 1.4	Ød + 1.2	Ød + 1.8	Ød + 1.6	Ød + 2.8
max. Ø D1	Ød - 0.5		Ød - 0.5		Ød - 0.5	

Cassette holder dimension table

	BKH	LK	D3	L3	L6	L7	X	A	R
C6	see drawings page 42						Must be calculated for each application. See formula below		
C8	8.06	52.0	2.0	29.6	9.85	42.1		4.70	4.03
C12	10.06	61.0	3.0	35.0	11.1	51.5		6.45	5.03

Calculating dimension X



Formula for calculating dimension X

C6:	X = Ø d/2 - 6.3 + adjustment*
C8:	X = Ø d/2 - 9.2 + adjustment*
C12:	X = Ø d/2 - 13.7 + adjustment*

* Adjustment for desired deburring size: TARGET minus ACTUAL

Calculation example for cassette system C6

Given:
Bore diameter: 12.5 mm / deburring diameter D: 13.7 mm
→ required deburring size (13.7 - 12.5)/2) = 0.6 mm (= TARGET)
→ L-blade deburring size: 0.7 mm (= ACTUAL)
Desired X
X = Ø d / 2 - 6.3 + (correction for blade deburring size)
X = (12.5 mm / 2) - 6.3 mm + (TARGET - ACTUAL)
X = 6.25 mm - 6.3 mm + (0.6 mm - 0.7 mm)
X = -0.05 mm + (-0.1 mm)
X = -0.15 mm

COFA Assembly Aid for Blade Change

Type	Part no.
COFA C2 / C3	C3-V-0002

Type	Part no.
COFA4M / COFA5M	GH-C-V-0541

Type	Part no.
COFA C6	C6-V-0008
COFA C8	C8-V-0007
COFA C12	C12-V-0018

COFA FAQ

Question	Causes	Remedy
Highly irregular deburring	• Cutting speed too high	• Reduce cutting speed considerably, leave working feed unchanged
	• Ratio of cross bore to bore diameter (d:D) is greater than 0.5	• Ratio is too high for the tool, solution with COFA not possible. Alternative-ly, check machining with COFA-X
	• Selected tool too large	• Use a tool with a smaller diameter (e.g. instead of C12/diameter 15.0 >C12/diameter 14.5)
Vibration, chatter marks	• Cutting speed too high	• Reduce cutting speed
	• Working feed too low	• Increase working feed
	• Spring too soft	• Install harder spring (spring index), existing tool can be converted
Deburr too large	• Tool/blade used is too large	• Use a tool with a smaller diameter (e.g. instead of C12/diameter 15.0 >C12/diameter 14.5) or a smaller blade if applicable
Deburr incomplete	• Spring too soft	• Install harder spring (spring index), existing tool can be converted
	• Clearance angle on blade too small	• Alternative blade
Secondary burr formation	• Spring too hard	• Install softer spring
No deburring	• Tool dirty, blade cannot move freely	• Clean tool
	• Blade worn out	• Replace blade
No deburring on the back of the bore	• Dimension C too short for the blade to fold out due to burr height	• Increase dimension C by burr height
	• Switchover time of the machine from rapid traverse forwards to rapid traverse backwards too fast or distance too short for the blade to fold out	• Provide a short dwell time or increase dimension C if space is available