



Superior Clamping and Gripping



## Product Information

Random orbit sander A0V

# Compliant. Compact. Flexible.

## Pneumatic random orbit sander

Pneumatic random orbit sander with axial compensation for grinding and polishing of workpiece surfaces

### Field of application

Automated grinding and polishing of workpiece surfaces with a constant, adjustable contact pressure for reproducible quality.



### Advantages – Your benefits

**Compensation can be adjusted by means of a double-action pneumatic cylinder** for a constant contact pressure independent of the orientation of the tool

**Optional media change system** for automated exchange of grinding or polishing wheels

**Optional connection for suction** for reduced contamination and susceptibility to faults

**Flexibility in axial direction** for a simplified robot programming

**Use of proven, adhesive grinding and polishing wheels** for simplified automation of manual grinding and polishing tasks

**Simple exchange of wear parts** for maximum system availability and minimum spare parts requirements



Sizes  
Quantity: 1



Idle speed max.  
10000 1/min



Max. extension  
compensation force  
66.7 N



Max. retraction  
compensation force  
33.3 N

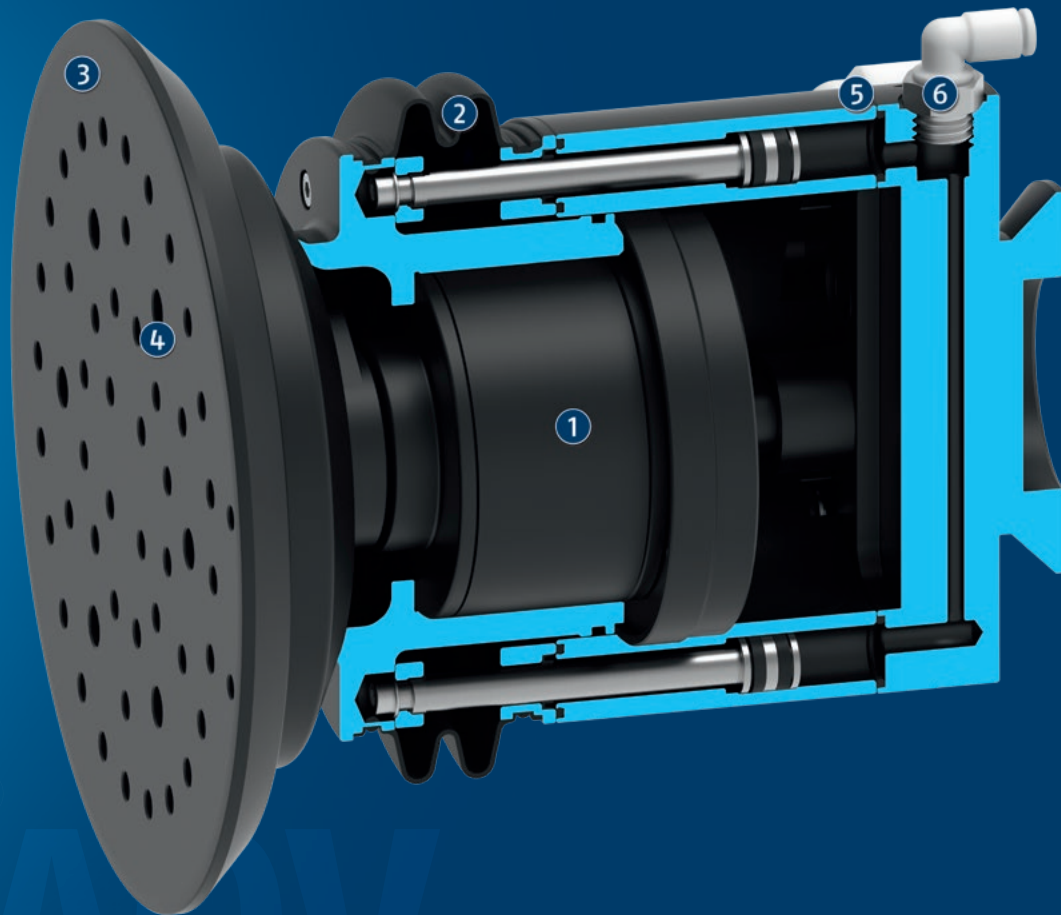


Compensation Z  
12.7 mm

## Functional description

The random orbit sander is driven by a vane-type air motor. The motor is driven by filtered and oiled air. The motor is axially and flexibly mounted to compensate for tolerances on the workpiece surface and to ensure a constant contact force during the grinding or polishing process. The contact force can be controlled separately in

two directions (retracting and extending) via two air connections, so that a variable contact pressure can be achieved. The random orbit sander can be used with two different sanding pad diameters and can be optionally equipped with a connection for an extraction system.



- ① **Rotating piston air engine**  
for a high torque and a short stopping time
- ② **Dust cover**  
protects the bearing against contamination
- ③ **Grinding pad**  
for adhesive grinding or polishing wheels
- ④ **Bore holes**  
for extraction of grinding and polishing dust
- ⑤ **Air connection**  
for the supply of the motor
- ⑥ **Air connection**  
for adjusting the contact pressure to the workpiece

# AOV

Random orbit sander

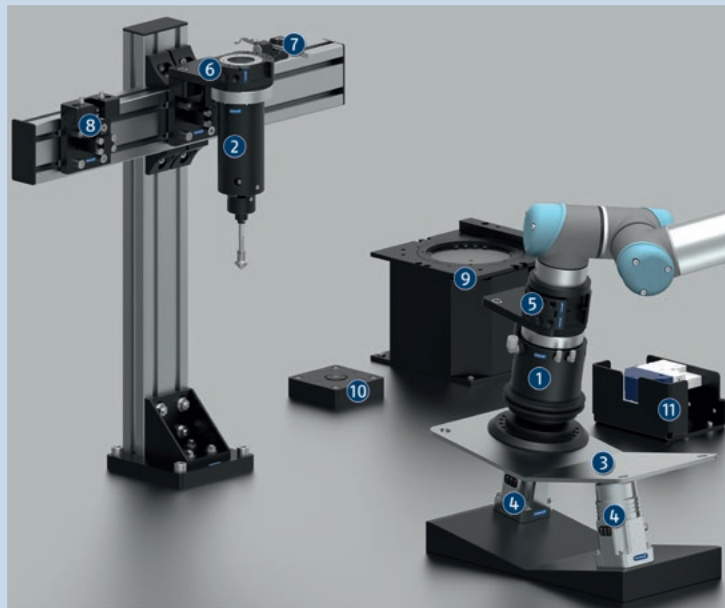
## General notes about the series

**Mounting:** on the robot arm or as a stationary unit

**Actuation:** pneumatic, via filtered (<5 µm, dry) and oiled compressed air (2-3 drops per hour)

**Warranty:** 24 months

**Ambient conditions:** Please note that the unit is not suitable for use in an area where coolants or cutting fluids are present.



## Application example

Robot-guided surface treatment of sheet metal with automatic abrasive changer consisting of disk magazine, presence detector and remover.

- 1 Orbital Sander Tool AOV
- 2 Deburring tool CDB
- 3 Workpiece
- 4 Magnetic gripper EMH
- 5 Quick-change system SWS
- 6 Quick-change adapter SWA
- 7 Tool stand module CDB
- 8 Mounting module pin and bushing
- 9 Washer rack
- 10 Washer presence detector
- 11 Washer remover

## SCHUNK offers more ...

The following components make the product even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.



Quick change system



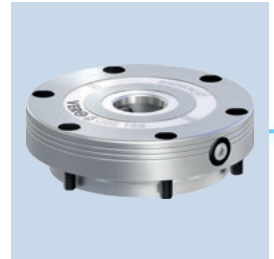
Manual change system



Force/torque sensor



Clamping force block



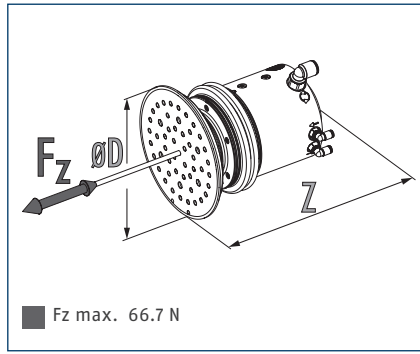
Quick-change Pallet System

① For more information on these products can be found on the following product pages or at [schunk.com](http://schunk.com).

# AOV 10

Random orbit sander

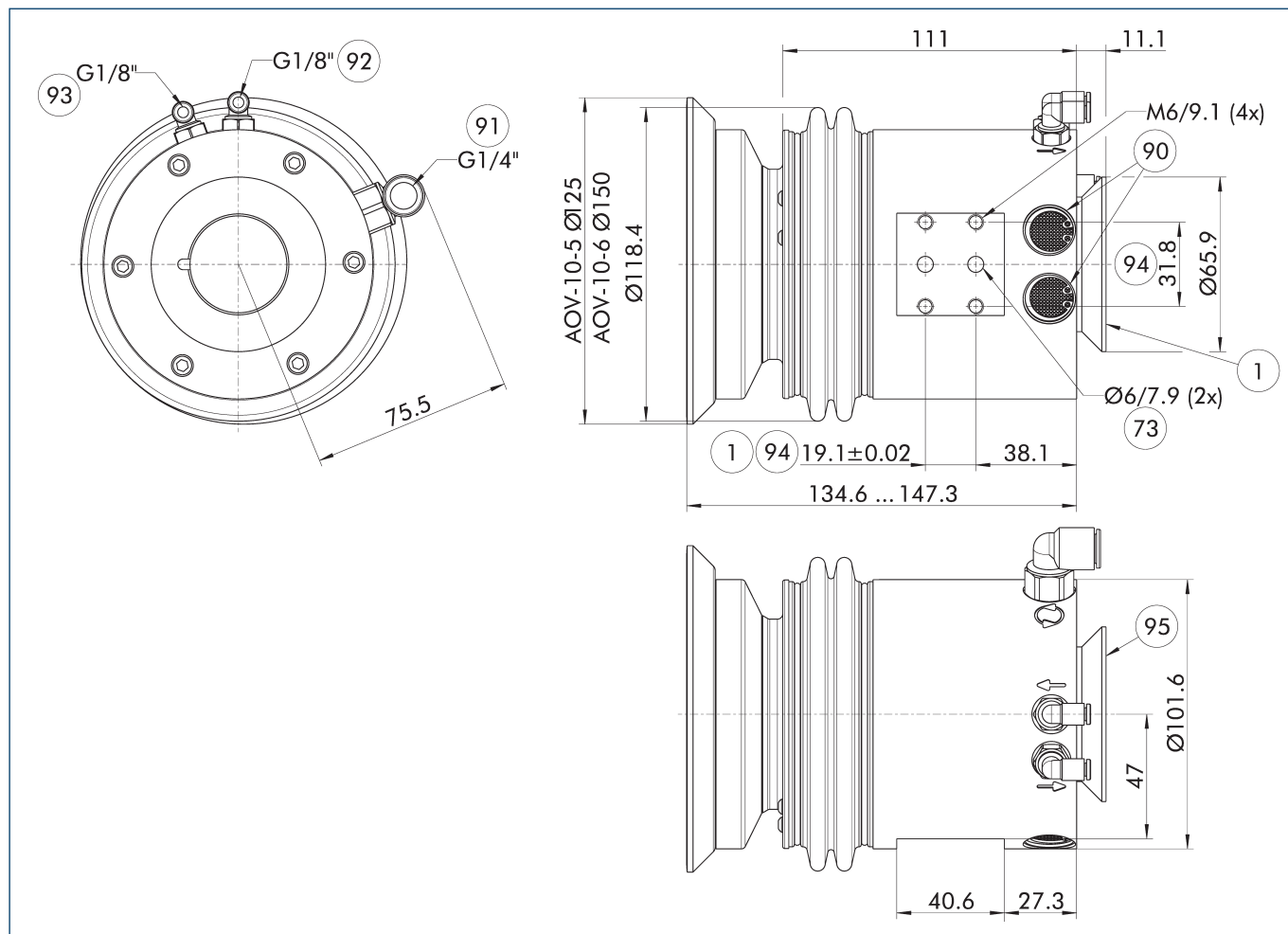
## Dimensions and maximum loads



## Technical data

Description		AOV-10-5	AOV-10-6
ID		1434817	1435146
Grinding disk size		125 mm (5")	150 mm (6")
Compensation Z	[mm]	12.7	12.7
Recommended compensation path	[mm]	±5	±5
Min./max. extension compensation force	[N]	13.3/66.7	13.3/66.7
Min./max. retraction compensation force	[N]	6.7/33.3	6.7/33.3
Min./max. compensation pressure	[bar]	1/4.1	1/4.1
Grinding stroke	[mm]	5	5
Idle speed	[1/min]	10000	10000
Operating pressure	[bar]	6.2	6.2
Noise emission	[dB(A)]	<85	<85
maximum air consumption	[l/s]	9.5	9.5
Air connection motor		10 mm	10 mm
Compensation air connection		4 mm	4 mm
Weight	[kg]	2.68	2.68
Min./max. ambient temperature	[°C]	5/35	5/35
Dimensions $\varnothing D \times Z$	[mm]	125 x 148	150 x 148
<b>Options and their characteristics</b>			
Description		AOV-10-5-V	AOV-10-6-V
with optional connection for suction		1434818	1435148

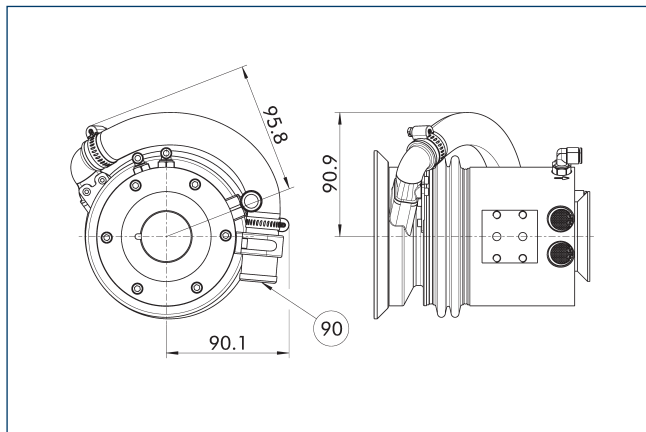
## Main view



The drawing shows the unit in the basic version.

- |   |   |
|---|---|
| ① Robot-side connection                                       | ⑨② Extend air connection compensation, hose screw connection for 4 mm hose  |
| ⑦③ Fit for centering pins                                     | ⑨③ Retract air connection compensation, hose screw connection for 4 mm hose |
| ⑨⑦ Ventilation opening  | ⑨④ radial mounting option   |
| ⑨① Air connection motor, hose screw connection for 10 mm hose | ⑨⑤ axial mounting option  |

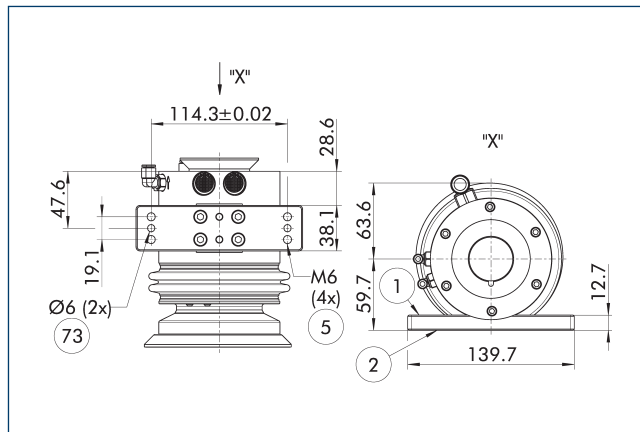
## Suction connection



⑨⑩ Vacuum connection  $\varnothing$  25.4 mm

The drawing shows the unit with the optional connection for a suction unit.

## Adapter plates, radial



① Robot-side connection

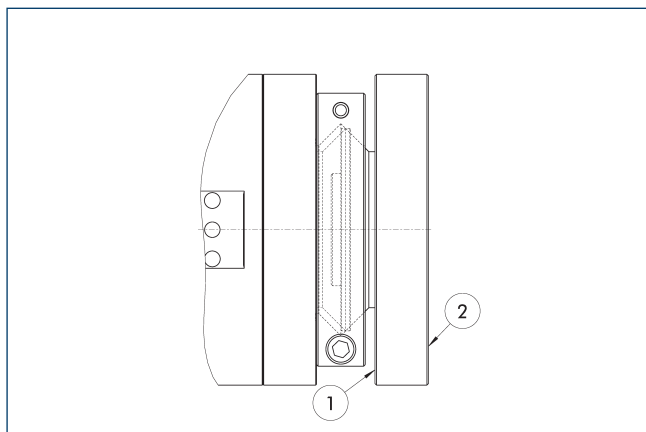
② Tool-side connection

⑤ Through hole for connection with screws

⑦③ Fit for centering pins

Description	ID
Adapter plate	
A-AOV/CRT/RVC-250/490/RCE-radial	1420116

## Adapter plates axial

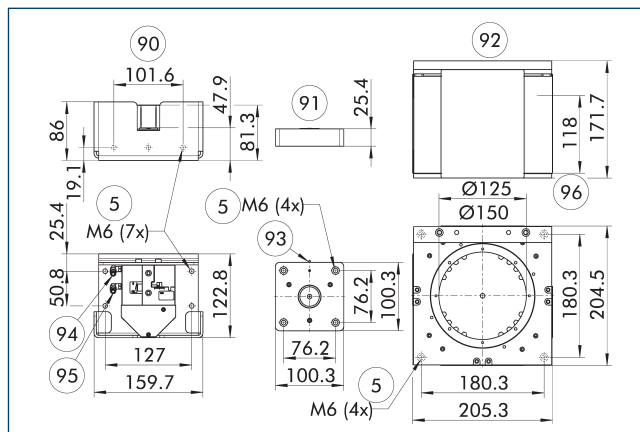


① Robot-side connection

② Tool-side connection

Description	ID
Adapter plate	
A-AOV-Axial-ISO-A50	1453540
A-FDB-660-1040/RCE-710/AOV-Axial	0322211

## Automated media changer



⑤ Through hole for connection with screws

⑨⑩ Washer remover

⑨① Washer presence detector

⑨② Washer rack

⑨③ Cable outlet, proximity switch

⑨④ Retract air connection needles

⑨⑤ Extend air connection needles

⑨⑥ max. media storage capacity

The drawing shows the three necessary components of the media changer.

Description	ID	Disk diameter
Automated media changer		
AOV-MCH	1460790	
AOV-MF5	1460781	125 mm (5")
AOV-MF6	1460783	150 mm (6")
AOV-MRA	1460797	

① All three components are necessary in order to use the media changer. These can be ordered separately and positioned individually.





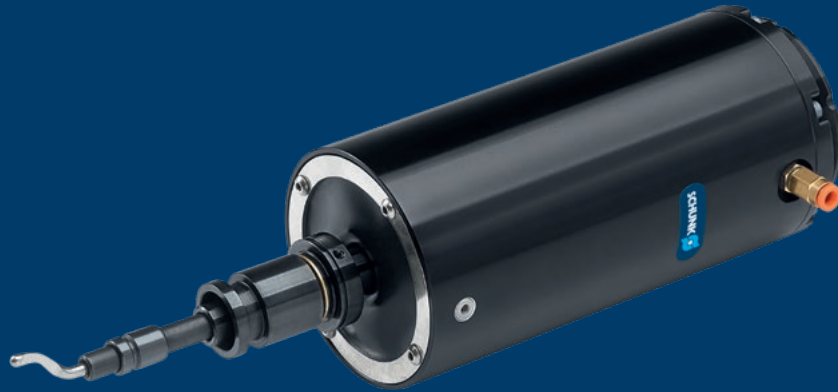


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## Product Information

Deburring tool CDB

# CDB

Deburring tool

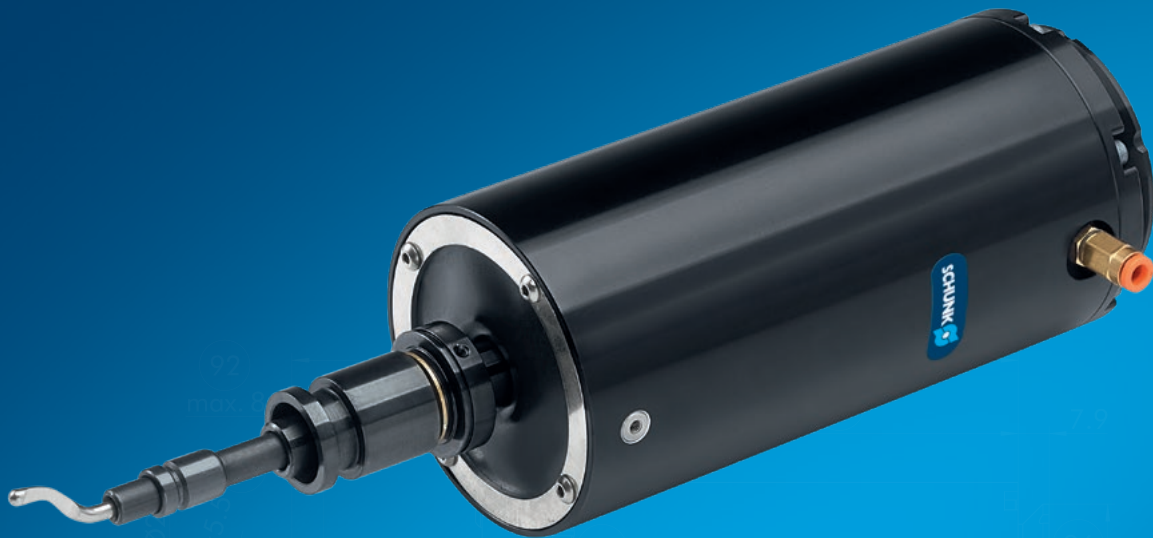
**Compliant. Flexible. Economical.**

## Deburring tool CDB

Compliant tool for deburring with the robot and proven deburring tools

### Field of application

For automatic deburring of different workpieces, geometries, and materials in a uniform quality



### Advantages – Your benefits

**Adjustable rigidity of the tool via compressed air** for flexible use and ideal results with different materials

**Optional tool change system** for the automatic exchange of different deburring tools

**Use of proven deburring tools** for simple automation of manual deburring processes

**Flexibility in axial and radial direction** for a simplified robot programming

**Lock function for the Y axis** for an oscillating compensation only in the X-axis

**Versatile use** by using different deburring tools such as knives, scrapers and countersinks



Sizes  
Quantity: 1



Max. radial compensation force  
76 N



Max. axial compensation force  
67 N



Compensation Z  
8 mm

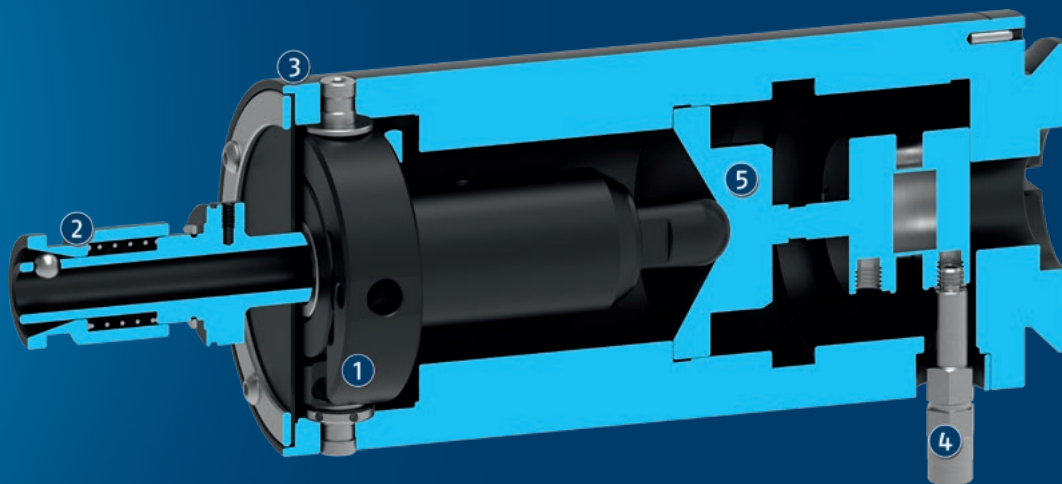


Compensation angle, radial  
 $\pm 5.5^\circ$

## Functional description

The deburring tool has a radial compensation in direction of the X,Y-axis, as well as an axial compensation along the Z axis. Optionally, the compensation of the Y-axis can be fixed with a set screw, so that an oscillating compensation in the X-axis is possible. The compensation force can be

flexibly adjusted by means of compressed air. The quick-release fastener can be used for easily exchanging standard blade holders together with the deburring tools. When using the automatic tool change with a storage module, this can be done quickly and automatically.



- ① **Gimballed system**  
for robust and flexible absorption of forces and moments
- ② **Tool mounting with quick-release fastener**  
for simple and fast exchange of deburring tools

- ③ **Locking function for Y axis**  
for an oscillating compensation in the X-axis
- ④ **Air connection**  
for adjusting the contact pressure to the workpiece
- ⑤ **Reset mechanism**  
for centering the unit

## General notes about the series

**Mounting:** on the robot arm or as a stationary unit

**Warranty:** 24 months

**Ambient conditions:** Please note that the unit is not suitable for use in an area where coolants or cutting fluids are present.



## Application example

Robot-guided deburring metal sheets with automatic tool change system for different contours with one deburring blade and one counterbore.

- |   |                          |    |                                 |
|---|--------------------------|----|---------------------------------|
| 1 | Deburring tool CDB       | 7  | Tool stand module CDB           |
| 2 | Orbital Sander Tool AOV  | 8  | Mounting module pin and bushing |
| 3 | Workpiece                | 9  | Washer rack                     |
| 4 | Magnetic gripper EMH     | 10 | Washer presence detector        |
| 5 | Quick-change system SWS  | 11 | Washer remover                  |
| 6 | Quick-change adapter SWA |    |                                 |

## SCHUNK offers more ...

The following components make the product even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.



Quick change system



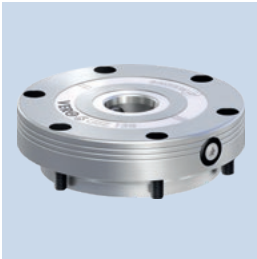
Manual change system



Force/torque sensor



2-finger parallel gripper



Quick-change Pallet System



Clamping force block



2-finger small components gripper



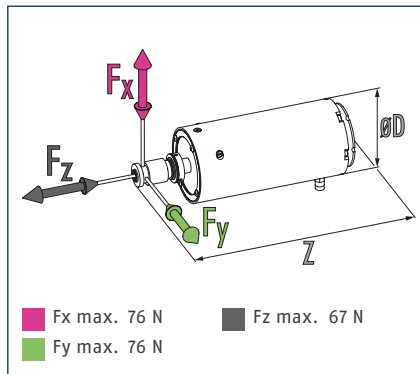
3-Finger Centric Gripper

① For more information on these products can be found on the following product pages or at [schunk.com](http://schunk.com).

# CDB 008

Deburring tool

## Dimensions and maximum loads



① The indicated forces show the maximum payload.

## Technical data

Description		CDB-8-11-0	CDB-8-11-ATC
ID		1421055	1435108
Max. compensation angle X	[°]	±5.5	±5.5
Max. compensation angle Y	[°]	±5.5	±5.5
Compensation Z	[mm]	8	8
Weight	[kg]	1.04	1.09
Air connection hose		4 mm	4 mm
Tool holder		Blade holder for deburring tool types B, C, D, E and F	Blade holder for deburring tool types B, C, D, E and F
Tool change		manual	Automatic
Axis fixation		integrated	integrated
Min./max. radial compensation force	[N]	25/76	25/76
Min./max. axial compensation force	[N]	13/67	13/67
Min./max. compensation pressure	[bar]	1/4.1	1/4.1
Dimensions Ø D x Z	[mm]	66.7 x 193.7	66.7 x 193.7











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## Product Information

File tool CRT

# CRT

File tool

## Compliant. Flexible. Robust.

### Pneumatic file tool CRT

Pneumatically driven file with radial compensation for machining workpieces

#### Field of application

for automatic deburring of different workpieces, geometries, and materials in a reproducible quality



#### Advantages – Your benefits

**The compensation force can be adjusted means of compressed air.** for high-quality deburring results in any installation position

**Flexible use** on the robot arm or as a stationary unit

**Use of proven files** for simple automation of manual deburring processes

**Flexibility in radial direction** for a simplified robot programming

**Simple exchange of wear parts** for maximum system availability and minimum spare parts requirements

**Robust bearing** for an optimized service life

**Lock function for the Y axis** for an oscillating compensation only in the X-axis



Sizes  
Quantity: 1



File stroke  
5 mm



Number of idle  
running strokes  
12000 1/min

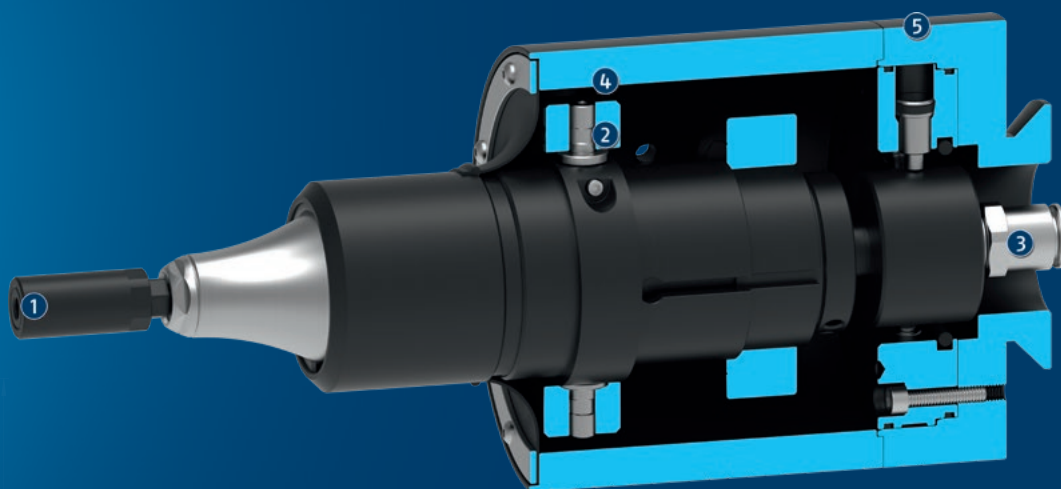


Compensation angle,  
radial  
 $\pm 1.8^\circ$

## Functional description

The unit is driven by a pneumatic motor. The motor is driven by filtered and oiled air. The motor is gimbal-mounted to compensate for tolerances on the workpiece contour. The toolholder mounting is held by a file holder as standard for files with a 5 mm shank. The Y-axis can

optionally be fixed by a set screw. This means that pendulum compensation is only possible in the X axis. The compliance force is controlled via a second air connection. Depending on the pressure setting, a variable contact force acts on the file tool.



① **Tool holder**  
for files

② **Gimballed system**  
for a robust compensation function

③ **Air connection**  
for the supply of the motor

④ **Locking function for Y axis**  
for an oscillating compensation in the X-axis

⑤ **Air connection**  
for adjusting the compliance force

# CRT

File tool

## General notes about the series

**Mounting:** on the robot arm or as a stationary unit

**Actuation:** pneumatic, via filtered (<5 µm, dry) and oiled compressed air (1-2 drops per minute)

**Scope of delivery:** Spindle with collet and pneumatic screw connections.

**Warranty:** 24 months

**Ambient conditions:** Please note that the unit is not suitable for use in an area where coolants or cutting fluids are present.



## Application example

Robot-guided deburring of fins of a milled heatsink.

- |                           |  |
|---------------------------|--|
| ① Pneumatic file tool CRT | ⑤ Quick-change system SWS                |
| ② Deburring spindle RCV   | ⑥ Quick-change adapter SWA               |
| ③ Heat sink               | ⑦ Storage module pin and bushing for CRT |
| ④ TANDEM KSP plus         |  |



## SCHUNK offers more ...

The following components make the product even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.



Quick change system



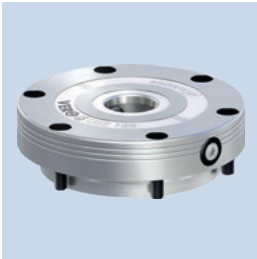
Manual change system



Force/torque sensor



2-finger parallel gripper



Quick-change Pallet System



Clamping force block



2-finger small components gripper



3-Finger Centric Gripper

For more information on these products can be found on the following product pages or at [schunk.com](http://schunk.com).

## Options and special information

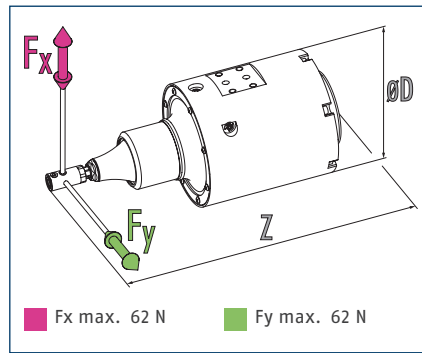
**Universally:** Due to its flexible assembly options, the CRT file tool is not only restricted for use on a robot arm. It can also be used as a fixed tool with a moving workpiece.

# CRT 12

File tool



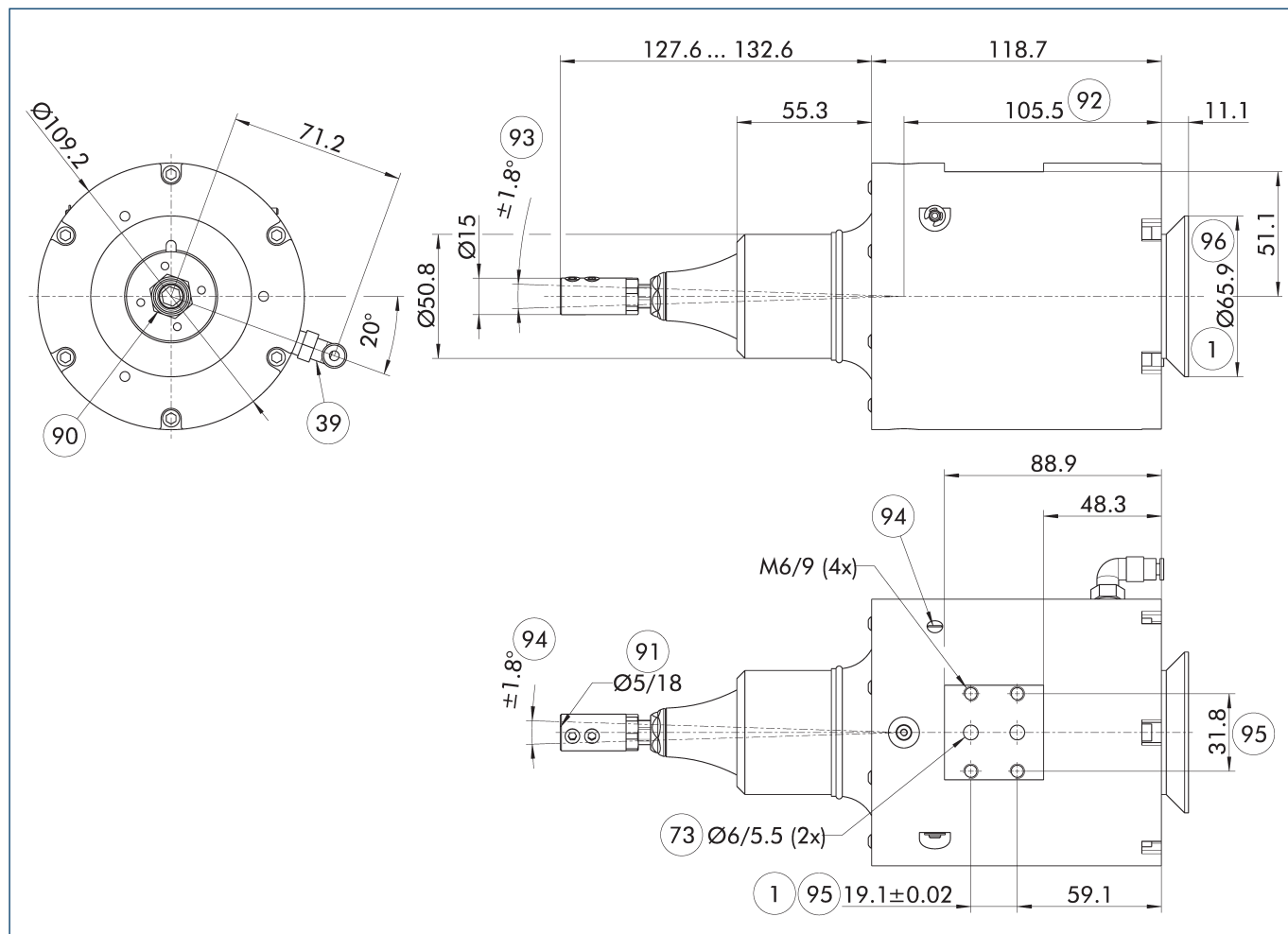
## Dimensions and maximum loads



## Technical data

Description		CRT 12-5
ID		1427058
Max. compensation angle X	[°]	±1.8
Max. compensation X	[mm]	±8
Max. compensation angle Y	[°]	±1.8
Max. compensation Y	[mm]	±8
Axis fixation		integrated
Recommended compensation path	[mm]	±4
Min./max. compensation force	[N]	18/62
Min./max. compensation pressure	[bar]	1/4.1
File stroke	[mm]	5
Number of idle running strokes	[1/min]	12000
Operating pressure	[bar]	6.2
Noise emission	[dB(A)]	85
maximum air consumption	[l/s]	2.8
Tool holder		File holder Ø 5 mm
Air connection spindle		10 mm
Compensation air connection		4 mm
Weight	[kg]	3.08
Min./max. ambient temperature	[°C]	5/35
Dimensions Ø D x Z	[mm]	109.2 x 251.3

Main view



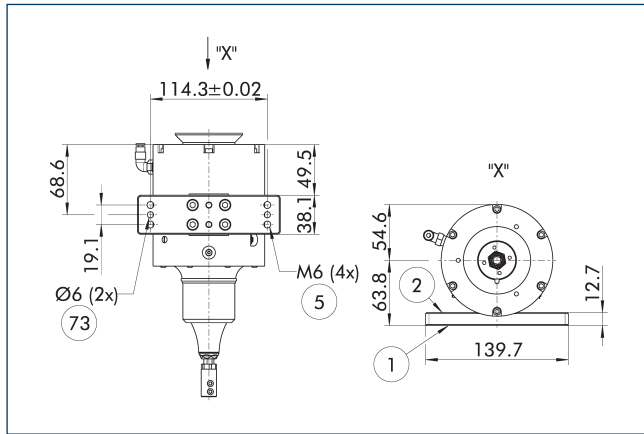
The main view shows the unit in its basic version.

- |                                |  |
|--------------------------------|--|
| ① Robot-side connection        | ⑨③ max. radial compensation (x axis)           |
| ③⑨ Compensation air connection | ⑨④ max. radial compensation (y axis, lockable) |
| ⑦③ Fit for centering pins      | ⑨⑤ radial mounting option                      |
| ⑨① Air connection motor        | ⑨⑥ axial mounting option                       |
| ⑨① Tool holder                 |  |
| ⑨② Pivot                       |  |

# CRT 12

File tool

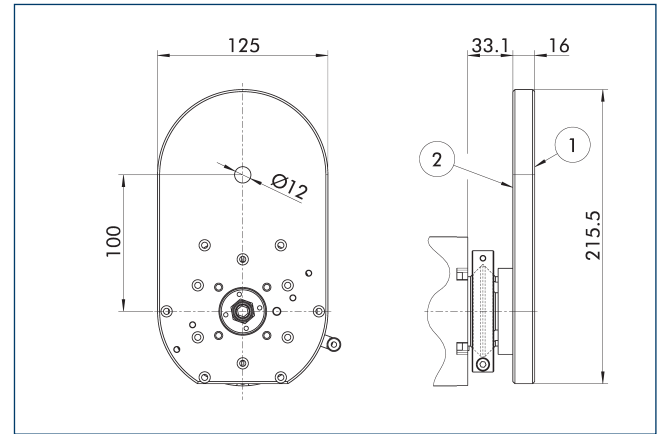
## Adapter plates, radial



- ① Robot-side connection
- ② Tool-side connection
- ⑤ Through hole for connection with screws
- ⑦③ Fit for centering pins

Description	ID
Adapter plate	
A-AOV/CRT/RVCV-250/490/RCE-radial	1420116

## Adapter plates axial

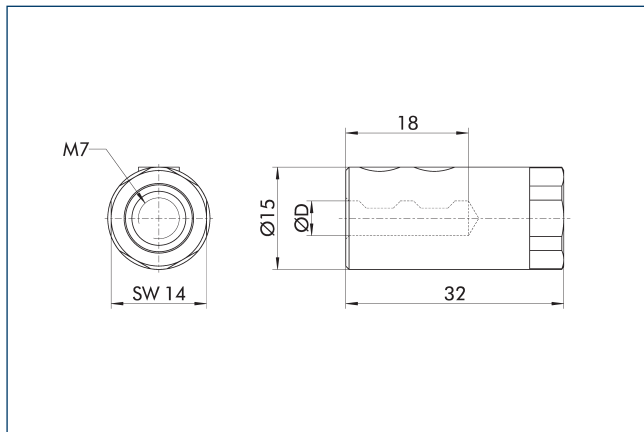


- ① Robot-side connection
- ② Tool-side connection

Tool-side blank adapter plate to be machined by the customer.

Description	ID
Adapter plate	
A-CRT-Axial-Offset-Blank	1453532

## File holder



Description	ID	Diameter D
		[mm]
File holder		
CRT-CHUCK-3MM	1453570	3
CRT-CHUCK-4MM	1453874	4
CRT-CHUCK-5MM	1453877	5
CRT-CHUCK-6MM	1453878	6

- ① The file holder with Ø 5 is included in the scope of delivery and is mounted by default.





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## Product Information

Deburring spindle FDB

# FDB

Deburring spindle

## Compliant. Robust. Precise.

### Deburring Spindle FDB

Flexible deburring spindle for use in robotic applications

#### Field of application

Standard solution for flexible and robot-guided deburring of all sorts of workpieces



#### Advantages – Your benefits

**Flexible high-frequency spindle** for maximum flexibility when deburring

**Pneumatically adjustable rigidity of the cutting spindle via compressed air** for clean chamfer edges in every installation position

**High speeds** for high feed rates

**Flexible use** on the robot arm or as a stationary unit

**Axis locking function available** to restrict the compensation path on the X-axis.



Sizes  
Quantity: 5



Idle speed max.  
25000 .. 65000 1/min



Power  
150 .. 1040 W



## Functional description

The unit is driven by a pneumatic spindle with a speed of rotation depending on the unit size. The spindle is swivel mounted for being able to compensate the tolerances of the whole machining contour.

The force (rigidity) is needed for moving (oscillating) the spindle. It is controlled by a second air connection. Depending on the pressure, force is applied on the milling cut surface.



- ① **Pneumatic spindle**  
High-performance spindle with up to 65,000 RPM
- ② **Ring cylinder**  
for adjusting the contact pressure to the workpiece
- ③ **Bearing**  
to suspend the oscillating pneumatic spindle
- ④ **Air connection**  
for actuation of the ring cylinder
- ⑤ **Air connection**  
with large cross-section for compressed air motor

# FDB

Deburring spindle

## General notes about the series

**Mounting:** on the robot arm or as a stationary unit

**Actuation:** pneumatic, with filtered compressed air (10 microns): dry and non-lubricated

**Scope of delivery:** Spindle with collet and pneumatic screw connections.

**Warranty:** 24 months

**Ambient conditions:** Please note that the unit is not suitable for use in an area where coolants or cutting fluids are present.

## Application example

Robot-guided deburring with changing system for spindles

- 1 Flexible deburring spindle FDB
- 2 Quick-change system SWS
- 3 Clamping force block with workpiece



## SCHUNK offers more ...

The following components make the product even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.



Quick change system



Force/torque sensor

① For more information on these products can be found on the following product pages or at [schunk.com](http://schunk.com).

## Options and special information

**Universally:** Its flexible mounting options mean the FDB deburring spindle is not restricted to use on a robot arm. It can also be used as a fixed tool with a moving workpiece.

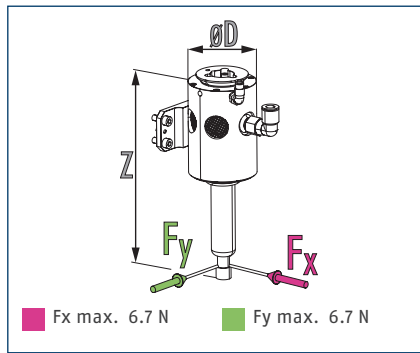
**Axis locking function:** The RS version enables compensation in one direction. This function is integrated in sizes 900 and 1040.

# FDB 150

Deburring spindle



## Dimensions and maximum loads

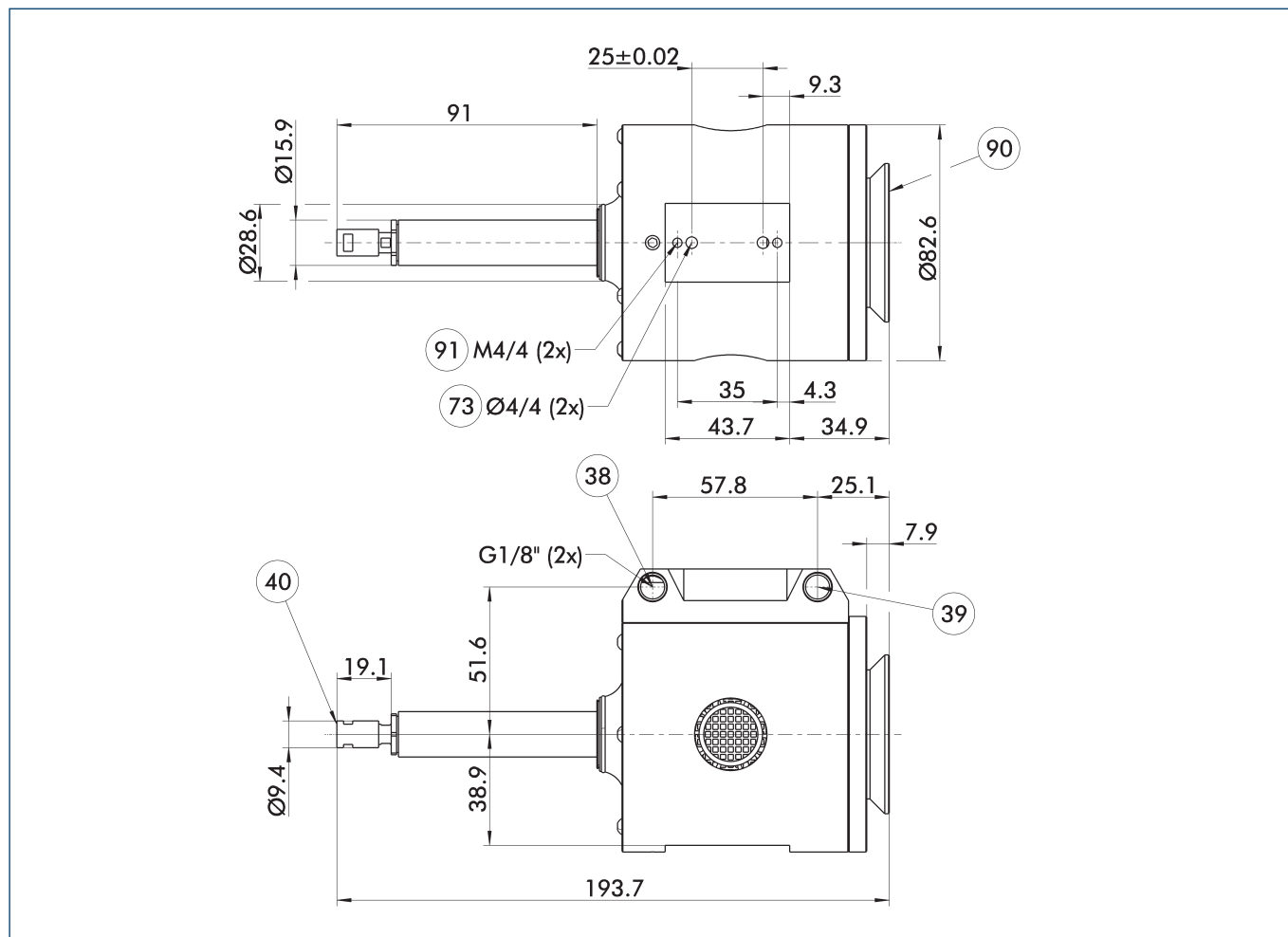


① The indicated forces show the maximum payload.

## Technical data

Description		FDB-150
ID		0322200
Power	[W]	150
Max. compensation X	[mm]	±6.4
Max. compensation Y	[mm]	±6.4
Recommended compensation path	[mm]	±3.2
Min. compensation force	[N]	0.9
Max. compensation force	[N]	5.8
Min. compensating pressure	[bar]	1
Max. compensation pressure	[bar]	4.1
Idle speed	[1/min]	65000
Operating pressure	[bar]	6.2
Noise emission	[dB(A)]	78
Idle air consumption	[l/s]	1.4
Stalled air consumption	[l/s]	3.8
Collet diameter	[mm]	3
Weight	[kg]	1.11
Min./max. ambient temperature	[°C]	5/35
Dimensions Ø D x Z	[mm]	82.6 x 193.7

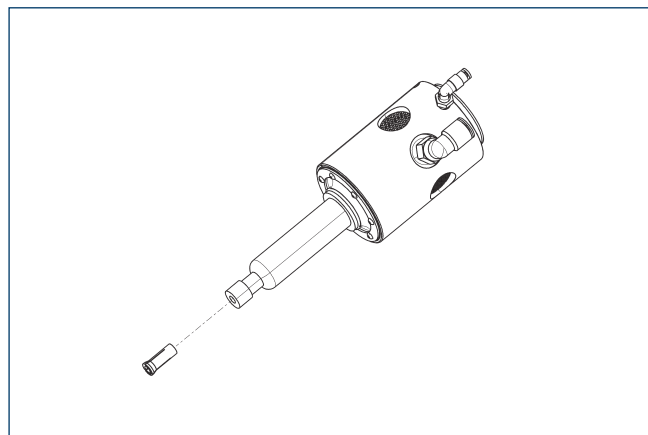
Main view



The main view shows the unit in its basic version.

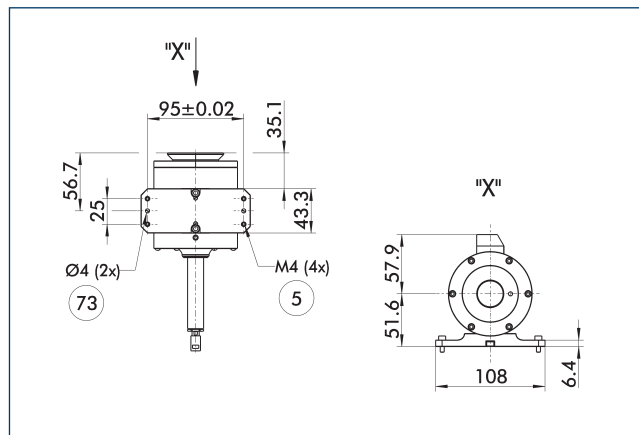
- ③⑧ Air connection spindle
- ③⑨ Compensation air connection
- ④① Collet
- ⑦③ Fit for centering pins
- ⑨① Axial connection
- ⑨① Radial connection

Collets



Description	ID	Diameter
Collet Chuck Mounting		
FDB-151-C-12142 Spannzangen	0322221	3 mm
FDB-151-C-12149 Spannzangen	0322224	

Adapter plates, radial



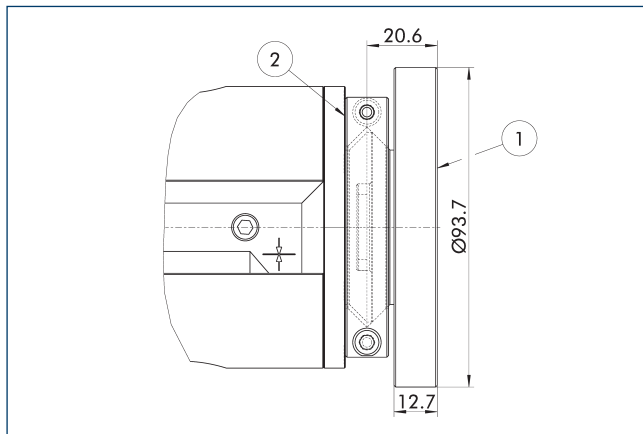
- ⑤ Through hole for connection with screws
- ⑦③ Fit for centering pins

Description	ID	
Adapter plate		
A-FDB-radial-150	0322212	

# FDB 150

Deburring spindle

## Adapter plates axial



① Robot-side connection

② Tool-side connection

Description	ID	Height [mm]
Adapter plate		
A-CDB/FDB-1XX/3XX-Blank	0322210	20.6
A-CDB/FDB-1XX/3XX-ISO-A050	1411542	20.6
A-CDB/FDB-1XX/3XX-ISO-A31.5	1411562	20.6

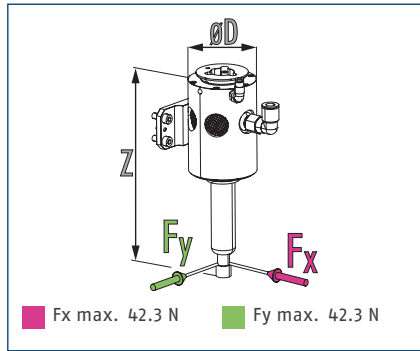


# FDB 300

Deburring spindle



## Dimensions and maximum loads



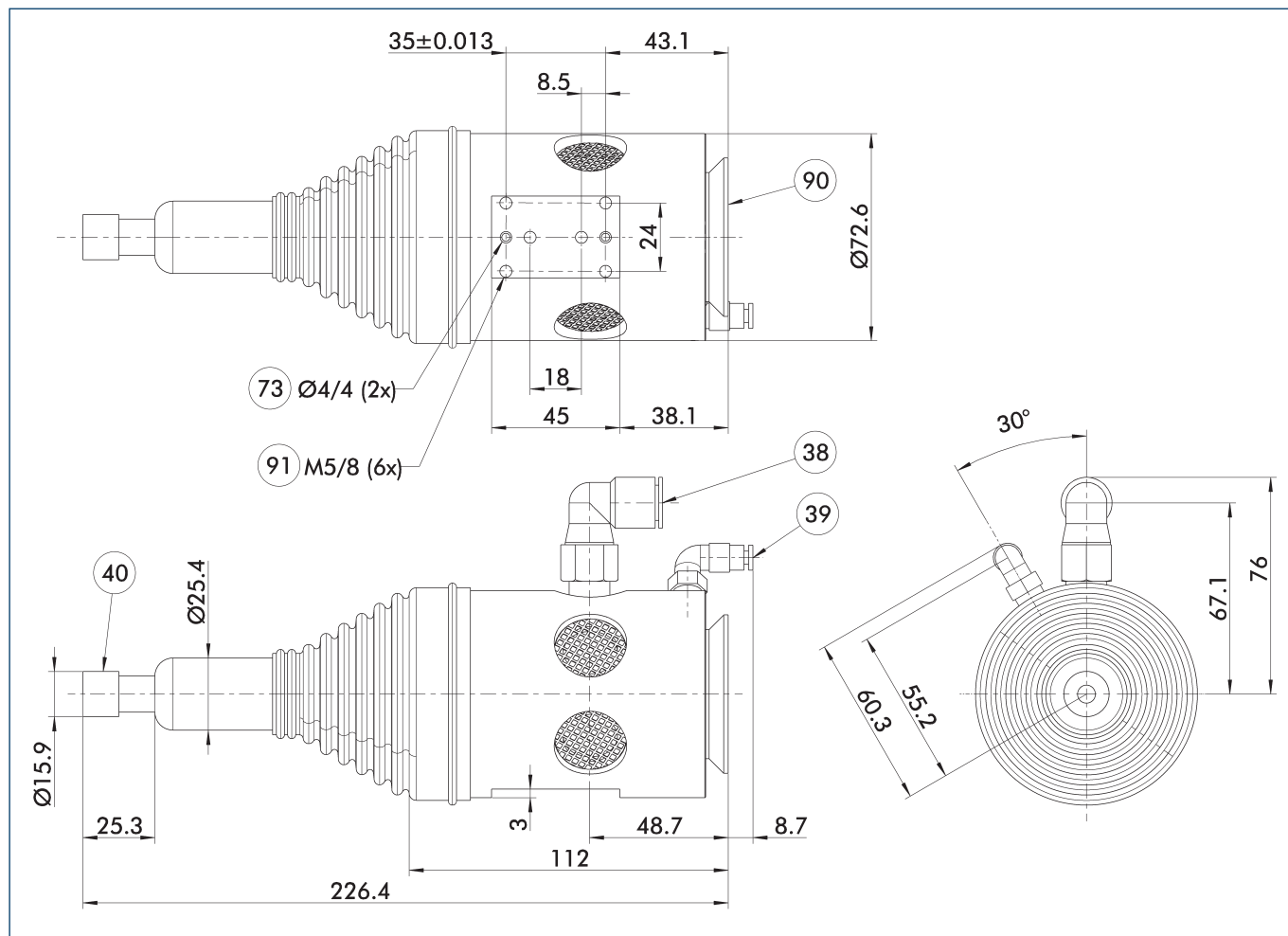
① The indicated forces show the maximum payload.

## Technical data

Description		FDB-300
ID		0322202
Power	[W]	300
Max. compensation X	[mm]	±7.5
Max. compensation Y	[mm]	±7.5
Recommended compensation path	[mm]	±3
Min. compensation force	[N]	12.7
Max. compensation force	[N]	42
Min. compensating pressure	[bar]	1
Max. compensation pressure	[bar]	4.1
Idle speed	[1/min]	30000
Operating pressure	[bar]	6.2
Noise emission	[dB(A)]	78
Idle air consumption	[l/s]	5.6
Stalled air consumption	[l/s]	10.2
Collet diameter	[mm]	6
Weight	[kg]	1.15
Min./max. ambient temperature	[°C]	5/35
Dimensions Ø D x Z	[mm]	72.6 x 226.4



Main view



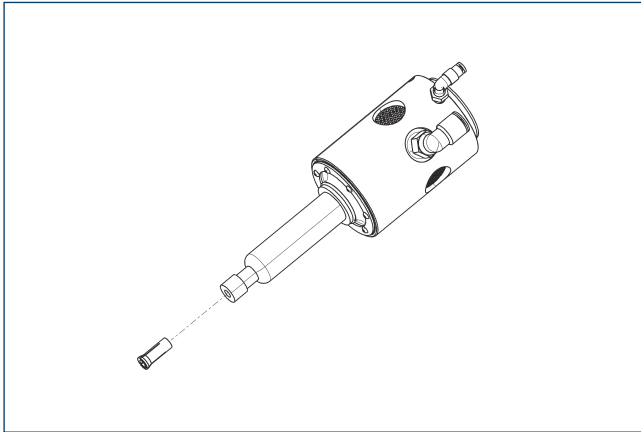
The main view shows the unit in its basic version.

- ③⑧ Air connection spindle
- ③⑨ Compensation air connection
- ④⑩ Collet
- ⑦③ Fit for centering pins
- ⑨⑩ Axial connection
- ⑨① Radial connection

# FDB 300

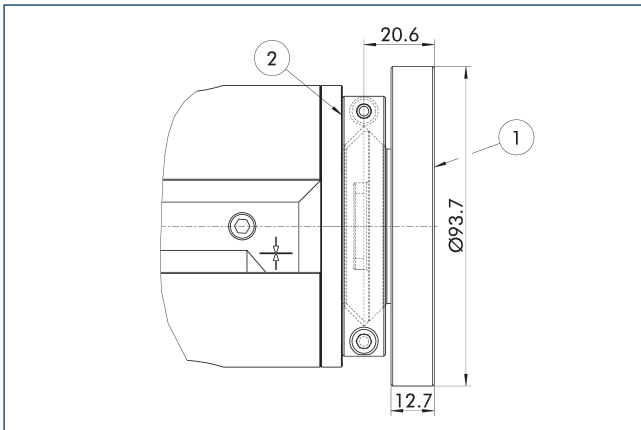
Deburring spindle

## Collets



Description	ID	Diameter
Collet Chuck Mounting		
FDB-300/340/660-C-12442 Spannzangen	0322220	3 mm
FDB-300/340/660-C-12443 Spannzangen	0322226	
FDB-300/340/660-C-12445 Spannzangen	0322222	6 mm
FDB-300/340/660-C-12446 Spannzangen	0322225	

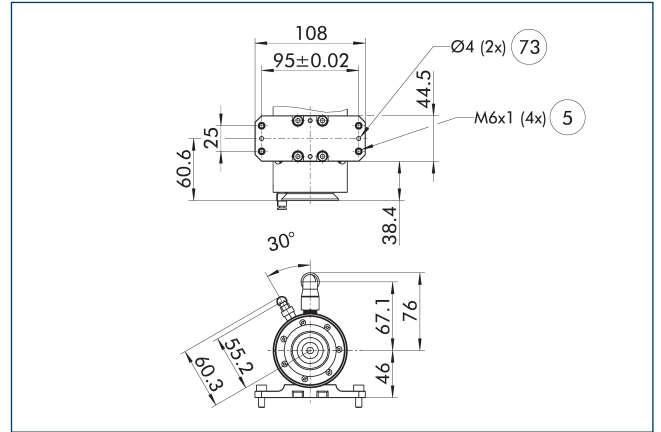
## Adapter plates axial



- ① Robot-side connection      ② Tool-side connection

Description	ID	Height [mm]
Adapter plate		
A-CDB/FDB-1XX/3XX-Blank	0322210	20.6
A-CDB/FDB-1XX/3XX-ISO-A050	1411542	20.6
A-CDB/FDB-1XX/3XX-ISO-A31.5	1411562	20.6

## Adapter plates, radial

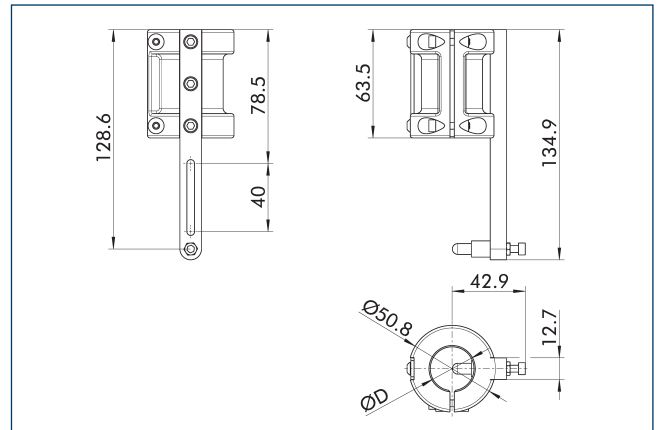


- ⑤ Through hole for connection      ⑦③ Fit for centering pins with screws

Adapter plate for connecting further Schunk components or customized attachments.

Description	ID	
Adapter plate		
A-FDB-3xx/MFT-Radial	0322213	

## Profile follower



Profile follower for adjustably limiting the depth of cut along a surface

Description	ID	Diameter D [mm]
Profile follower		
RC-PF1-25,4mm	1453506	25.4

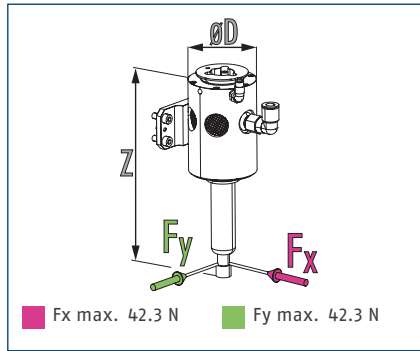


# FDB 340

Deburring spindle



## Dimensions and maximum loads

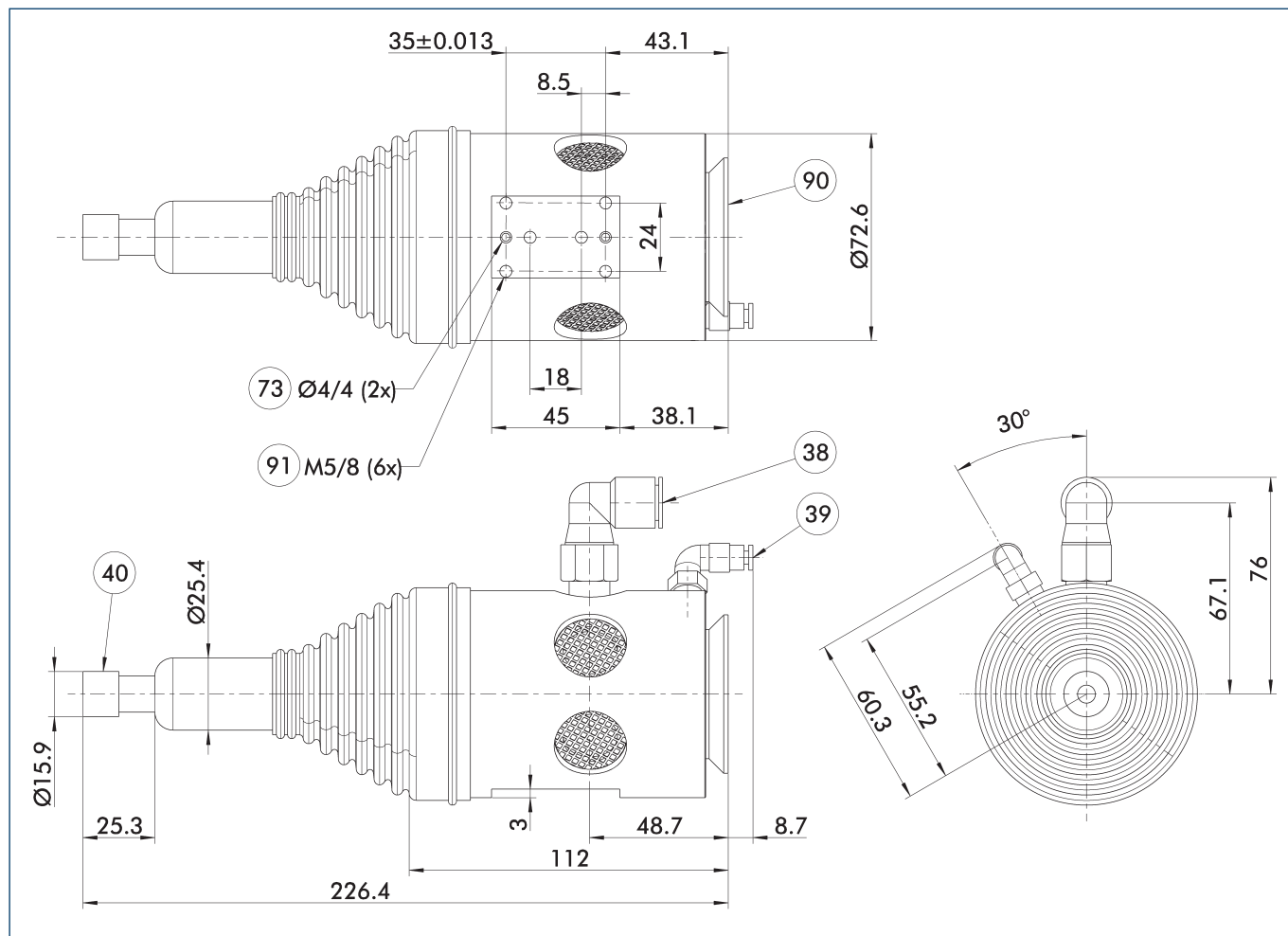


① The indicated forces show the maximum payload.

## Technical data

Description		FDB-340	FDB-340-RS
ID		0322201	0322208
Power	[W]	340	340
Max. compensation X	[mm]	±7.5	±5.5
Max. compensation Y	[mm]	±7.5	0
Axis fixation			integrated
Recommended compensation path	[mm]	±3	±3
Min. compensation force	[N]	12.7	9.8
Max. compensation force	[N]	42	38.3
Min. compensating pressure	[bar]	1	1
Max. compensation pressure	[bar]	4.1	4.1
Idle speed	[1/min]	40000	40000
Operating pressure	[bar]	6.2	6.2
Noise emission	[dB(A)]	78	<78
Idle air consumption	[l/s]	5.6	2.8
Stalled air consumption	[l/s]	10.2	10.2
Collet diameter	[mm]	6	6
Weight	[kg]	1.15	1.13
Min./max. ambient temperature	[°C]	5/35	5/35
Dimensions Ø D x Z	[mm]	72.6 x 226.4	72.6 x 226.4

Main view



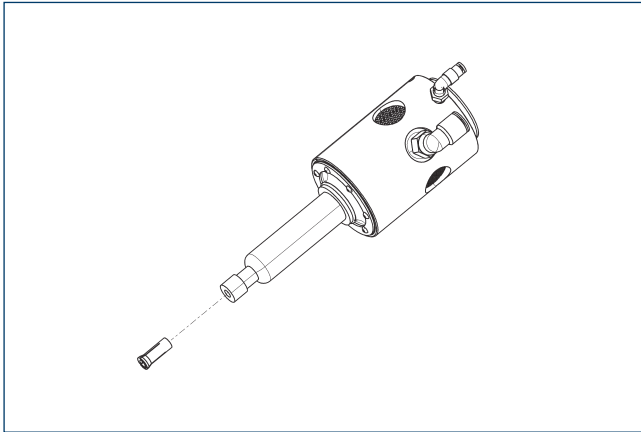
The main view shows the unit in its basic version.

- ③⑧ Air connection spindle
- ③⑨ Compensation air connection
- ④⑩ Collet
- ⑦③ Fit for centering pins
- ⑨⑩ Axial connection
- ⑨① Radial connection

# FDB 340

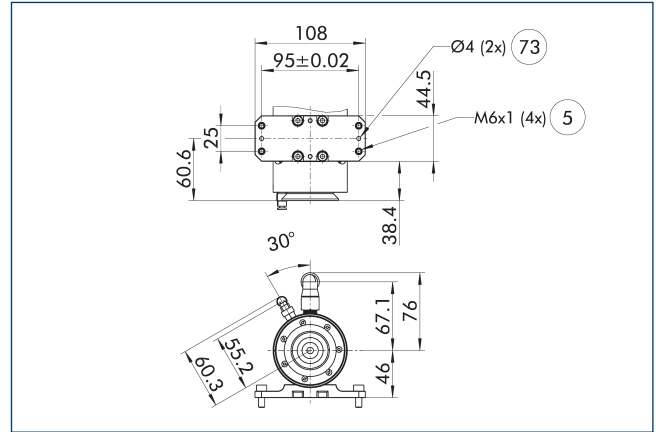
Deburring spindle

## Collets



Description	ID	Diameter
Collet Chuck Mounting		
FDB-300/340/660-C-12442 Spannzangen	0322220	3 mm
FDB-300/340/660-C-12443 Spannzangen	0322226	
FDB-300/340/660-C-12445 Spannzangen	0322222	6 mm
FDB-300/340/660-C-12446 Spannzangen	0322225	

## Adapter plates, radial

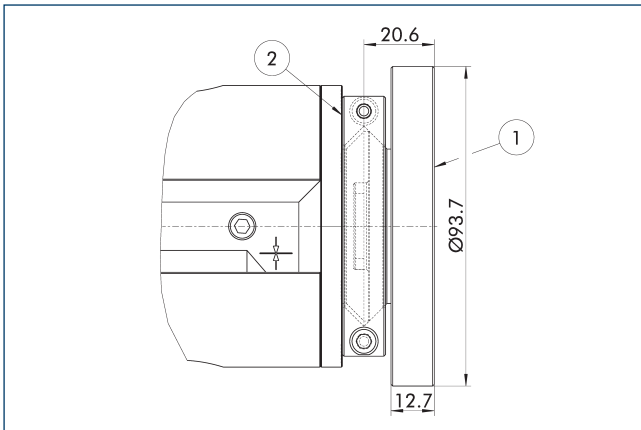


- ⑤ Through hole for connection with screws
- ⑦③ Fit for centering pins

Adapter plate for connecting further Schunk components or customized attachments.

Description	ID	
Adapter plate		
A-FDB-3xx/MFT-Radial	0322213	

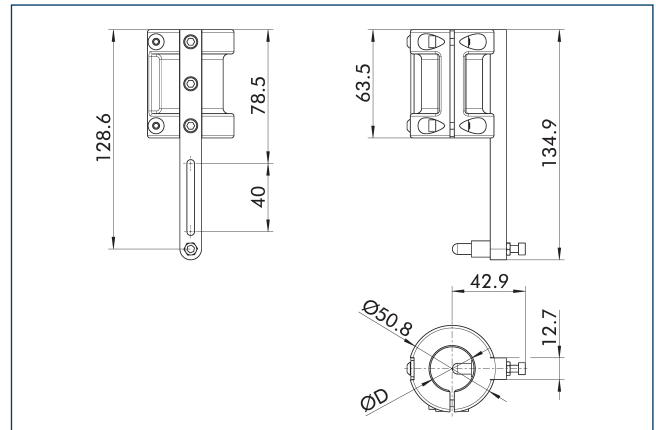
## Adapter plates axial



- ① Robot-side connection
- ② Tool-side connection

Description	ID	Height [mm]
Adapter plate		
A-CDB/FDB-1XX/3XX-Blank	0322210	20.6
A-CDB/FDB-1XX/3XX-ISO-A050	1411542	20.6
A-CDB/FDB-1XX/3XX-ISO-A31.5	1411562	20.6

## Profile follower



Profile follower for adjustably limiting the depth of cut along a surface

Description	ID	Diameter D [mm]
Profile follower		
RC-PF1-25,4mm	1453506	25.4

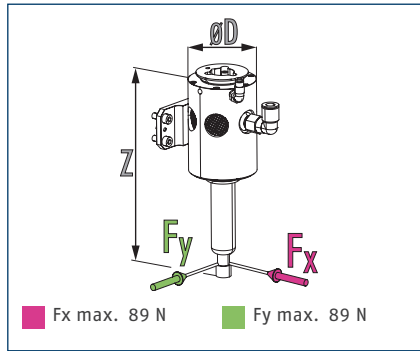


# FDB 900

Deburring spindle



## Dimensions and maximum loads



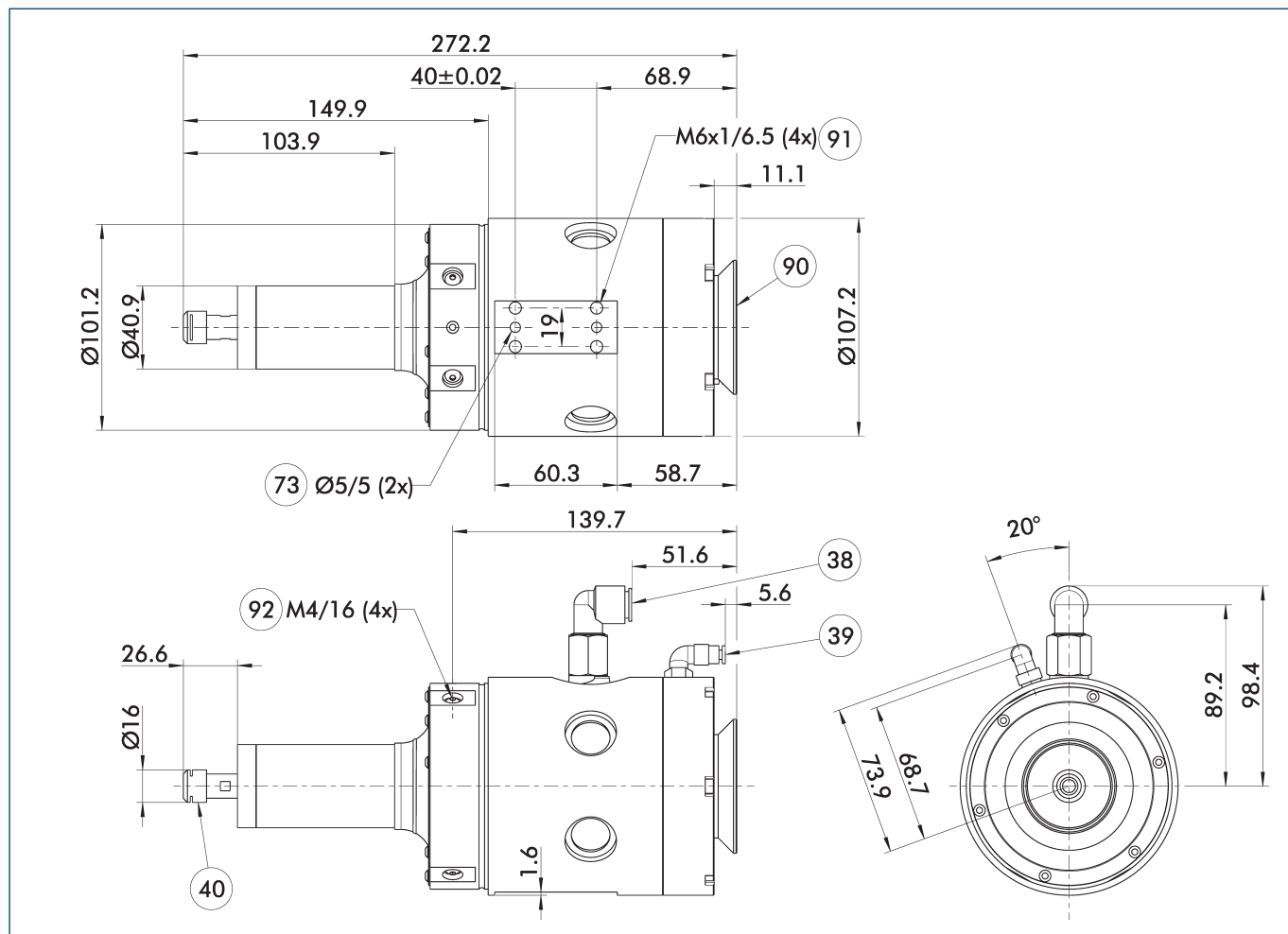
① The indicated forces show the maximum payload.

## Technical data

Description		FDB-900
ID		0322240
Power	[W]	900
Max. compensation X	[mm]	±9
Max. compensation Y	[mm]	±9
Axis fixation		optionally via adjustment screws
Recommended compensation path	[mm]	±5
Min. compensation force	[N]	28.9
Max. compensation force	[N]	86.7
Min. compensating pressure	[bar]	1
Max. compensation pressure	[bar]	4.1
Idle speed	[1/min]	25000
Operating pressure	[bar]	6.2
Noise emission	[dB(A)]	78
Idle air consumption	[l/s]	11.8
Stalled air consumption	[l/s]	19
Collet		ER-11
Collet diameter	[mm]	6
Weight	[kg]	3.4
Min./max. ambient temperature	[°C]	5/35
Dimensions Ø D x Z	[mm]	107.2 x 272.2



## Main view



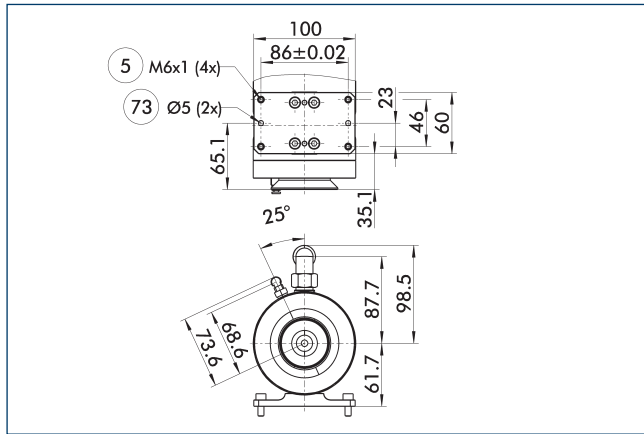
The main view shows the unit in its basic version.

- |                                |   |
|--------------------------------|---|
| ③⑧ Air connection spindle      | ⑨⑩ Axial connection                     |
| ③⑨ Compensation air connection | ⑨① Radial connection                    |
| ④⑩ Collet                      | ⑨② Screws for axis limitaton (optional) |
| ⑦③ Fit for centering pins      |   |

# FDB 900

Deburring spindle

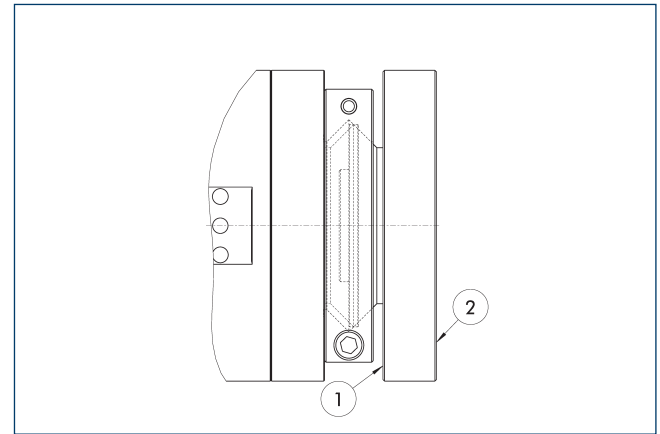
## Adapter plates, radial



- ⑤ Through hole for connection with screws
- ⑦③ Fit for centering pins

Description	ID
Adapter plate	
A-FDB-660-1040/MFT-R-Radial	0322214

## Adapter plates axial



- ① Robot-side connection
- ② Tool-side connection

Description	ID
Adapter plate	
A-FDB-660-1040/RCE-710/AOV-Axial	0322211

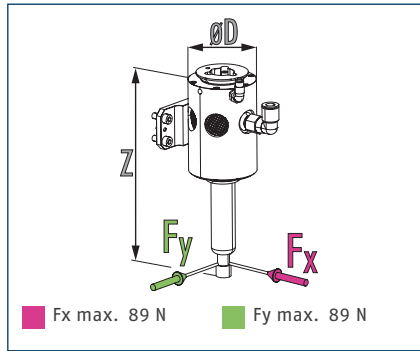


# FDB 1040

Deburring spindle



## Dimensions and maximum loads

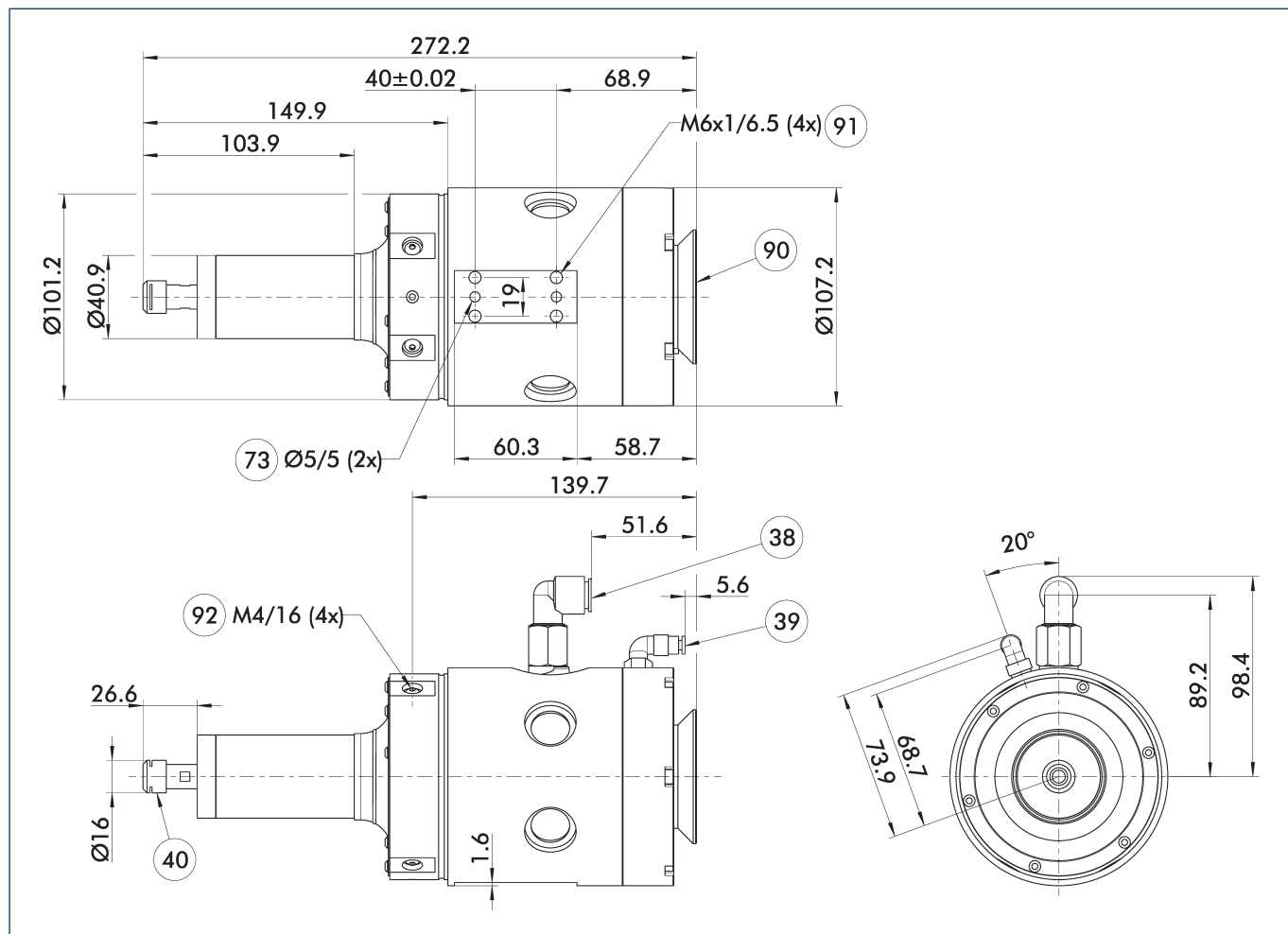


① The indicated forces show the maximum payload.

## Technical data

Description		FDB-1040
ID		0322245
Power	[W]	1040
Max. compensation X	[mm]	±9
Max. compensation Y	[mm]	±9
Axis fixation		optionally via adjustment screws
Recommended compensation path	[mm]	±5
Min. compensation force	[N]	28.9
Max. compensation force	[N]	86.7
Min. compensating pressure	[bar]	1
Max. compensation pressure	[bar]	4.1
Idle speed	[1/min]	40000
Operating pressure	[bar]	6.2
Noise emission	[dB(A)]	78
Idle air consumption	[l/s]	11.8
Stalled air consumption	[l/s]	19
Collet		ER-11
Collet diameter	[mm]	6
Weight	[kg]	3.45
Min./max. ambient temperature	[°C]	5/35
Dimensions Ø D x Z	[mm]	107.2 x 272.2

## Main view



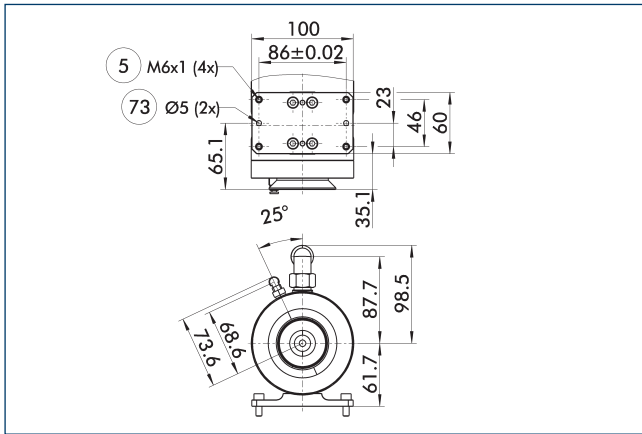
The main view shows the unit in its basic version.

- |                                |   |
|--------------------------------|---|
| 38 Air connection spindle      | 90 Axial connection                     |
| 39 Compensation air connection | 91 Radial connection                    |
| 40 Collet                      | 92 Screws for axis limitaton (optional) |
| 73 Fit for centering pins      |   |

# FDB 1040

Deburring spindle

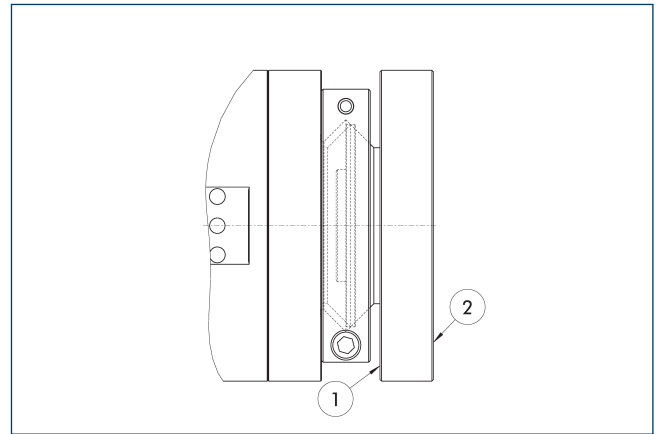
## Adapter plates, radial



- ⑤ Through hole for connection with screws
- ⑦③ Fit for centering pins

Description	ID
Adapter plate	
A-FDB-660-1040/MFT-R-Radial	0322214

## Adapter plates axial



- ① Robot-side connection
- ② Tool-side connection

Description	ID
Adapter plate	
A-FDB-660-1040/RCE-710/AOV-Axial	0322211





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## Product Information

Deburring spindle FDB-AC

# FDB-AC

Deburring spindle

**Compliant. Reliable. Flexible.**

## Deburring spindle FDB-AC

Flexible deburring spindle for use in robotic applications

### Field of application

Standard solution for flexible and robot-guided deburring of all sorts of workpieces



### Advantages – Your benefits

**Flexible high-frequency spindle** for maximum flexibility when deburring

**Pneumatically adjustable rigidity of the cutting spindle via compressed air** for clean chamfer edges in every installation position

**High speeds** for high feed rates

**Flexible use** on the robot arm or as a stationary unit



Sizes  
Quantity: 1



Idle speed max.  
30000 1/min

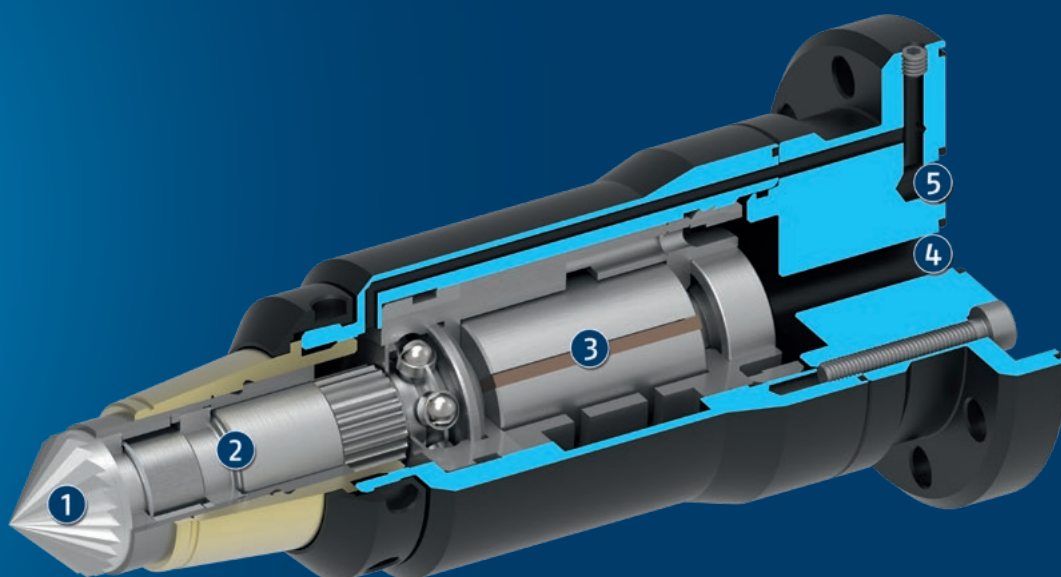


Power  
250 W

## Functional description

The unit is driven by a pneumatic spindle in straight and 90° version. For being able to follow the tolerances of the machining contour, the spindle is axially seated. The force (rigidity) is needed for moving the spindle

(axially). It is controlled by a second air connection. Depending on the pressure, force is applied on the milling cut surface.



- ① **Milling cutter**  
conical 90° for optimal deburring
- ② **Compensation piston**  
for adjusting the contact pressure to the workpiece
- ③ **Pneumatic spindle**  
High performance spindle with up to 30,000 RPM
- ④ **Pneumatic connection for the spindle**  
with large cross-section for compressed air motor
- ⑤ **Pneumatic connection for the compensation**  
adjustable rigidity of the spindle via oiled compressed air

# FDB-AC

Deburring spindle

## General notes about the series

**Mounting:** on the robot arm or as a stationary unit

**Actuation:** pneumatic, via oiled compressed air

**Scope of delivery:** Clamping tool and milling cutters

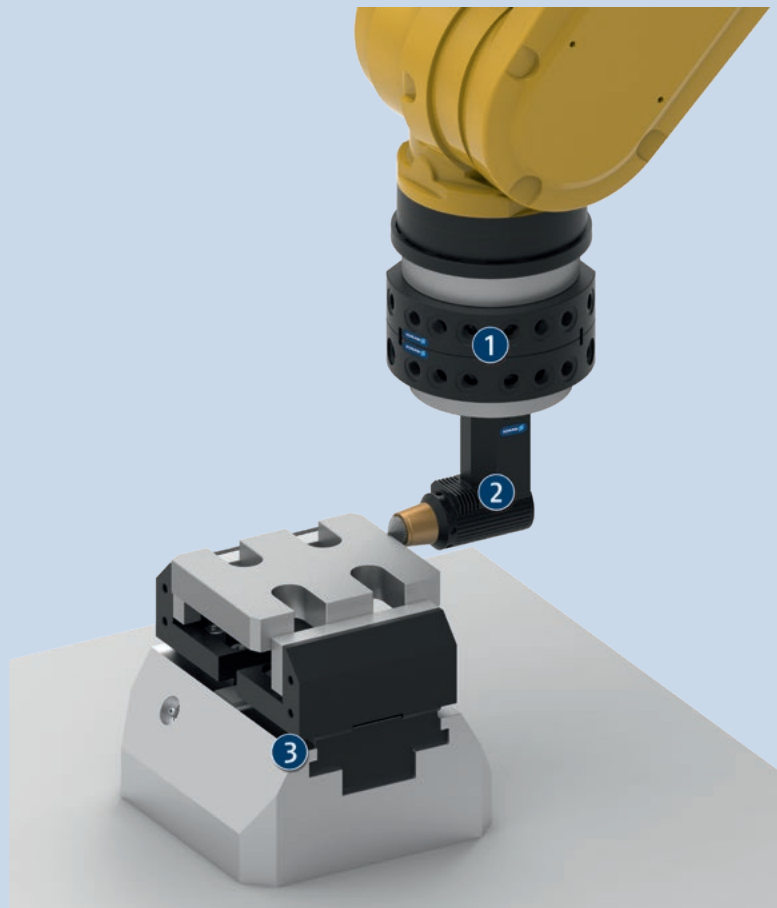
**Warranty:** 24 months

**Ambient conditions:** Please note that the unit is not suitable for use in an area where coolants or cutting fluids are present.

## Application example

Robot-guided deburring of connecting rod cast parts with changing system for the spindle

- 1 Quick-change system SWS
- 2 Flexible deburring spindle FDB-AC
- 3 Clamping force block



## SCHUNK offers more ...

The following components make the product even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.



Quick change system



Manual change system



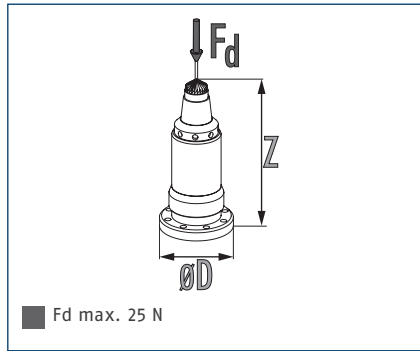
Force/torque sensor

① For more information on these products can be found on the following product pages or at [schunk.com](http://schunk.com).

# FDB-AC 180

Deburring spindle

## Dimensions and maximum loads

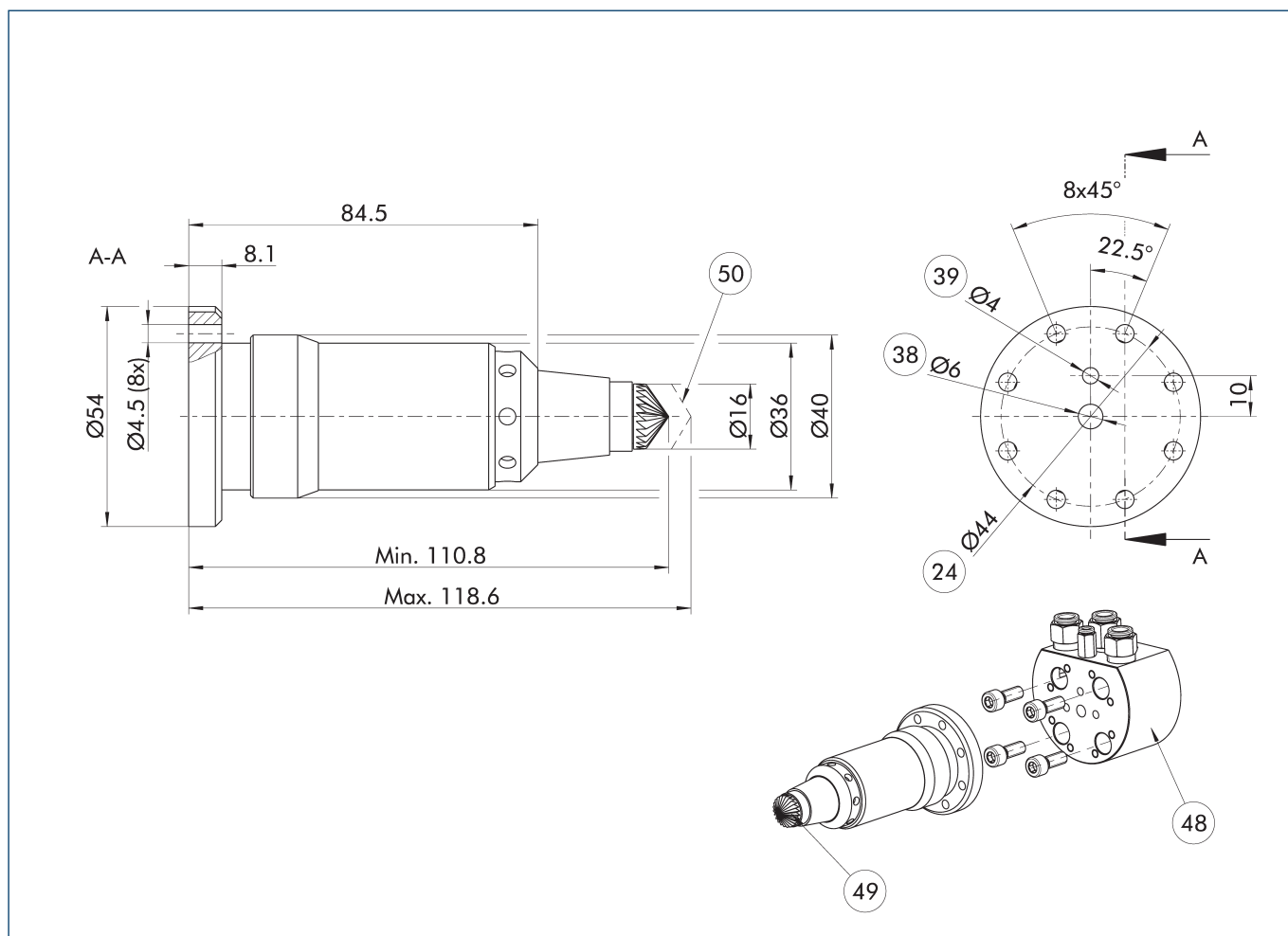


① The indicated forces show the maximum payload.

## Technical data

Description		FDB-AC-180
ID		0322207
Power	[W]	250
Max. compensation path	[mm]	±4.1
Recommended compensation path	[mm]	±2
Min. compensation force	[N]	8.45
Max. compensation force	[N]	32.9
Min. compensating pressure	[bar]	1
Max. compensation pressure	[bar]	4.1
Idle speed	[1/min]	30000
Operating pressure	[bar]	6.2
Noise emission	[dB(A)]	80
Idle air consumption	[l/s]	6.61
Weight	[kg]	0.51
Min./max. ambient temperature	[°C]	5/35
Dimensions Ø D x Z	[mm]	54 x 118.6

### Main view



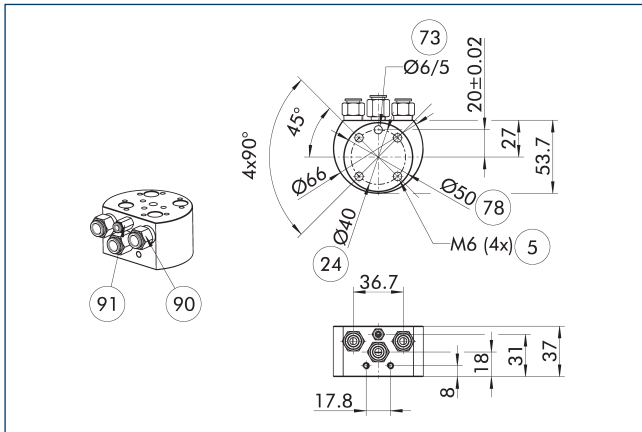
The main view shows the unit in its basic version.

- |                                |                       |
|--------------------------------|-----------------------|
| ②4 Bolt circle                 | ④8 Adapter            |
| ③8 Air connection spindle      | ④9 Milling cutter     |
| ③9 Compensation air connection | ⑤0 Axial compensation |

# FDB-AC 180

Deburring spindle

## Adapter plate

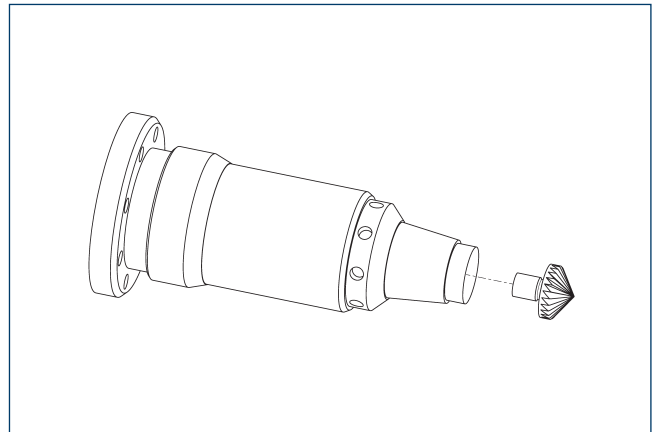


- ⑤ Through hole for connection with screws
- ②④ Bolt circle
- ⑦③ Fit for centering pins
- ⑦⑧ Fit for centering
- ⑨⑩ Pneumatic hose connection 8 mm
- ⑨① Pneumatic hose connection 4 mm

Description	ID	Height [mm]
<b>Robot side</b>		
A-FDB-AC	9951358	37

① All pneumatic screw connections are included in the scope of delivery.

## Cutters for replacements



Description	ID	Application	Angle [°]
<b>Cutters for Deburring Spindle</b>			
FDB-AC-DT-4579-C2	9951359	Hard metal	90
FDB-AC-DT-4579-C5	9951360	Steel	90







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## Product Information

Polishing spindle MFT

# MFT

Polishing spindle

**Productive. Compliant. Robust.**

## Polishing spindle MFT

Compliant polishing spindle for use on a robot

### Field of application

Standard solution for flexible and robot guided polishing of various workpieces and for different surfaces



### Advantages – Your benefits

**Flexible high-frequency spindle** for maximum flexibility when polishing

**Adjustable stiffness of the spindle via air pressure** for smooth surfaces in every application

**High speeds** for high feed rates

**Sensor system** Optional for retracted/extended stroke and speed monitoring



Sizes  
Quantity: 1



Idle speed max.  
5600 1/min

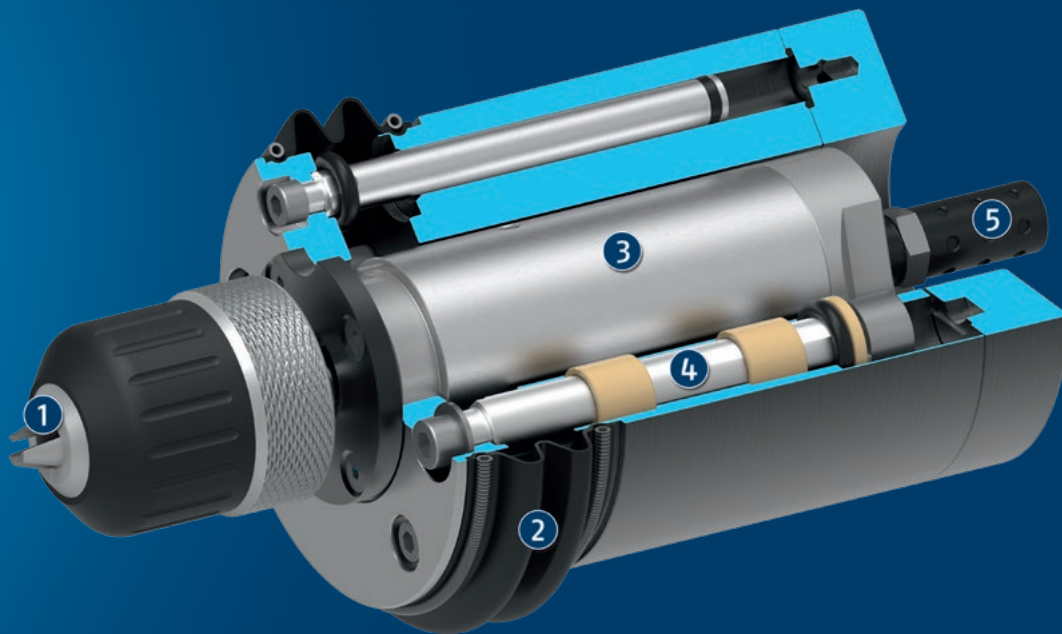


Power  
390 W

## Functional description

The tool holding of the MFT is used for clamping steel brushes, grinding and cup wheels, polishing brushes, deburring cutters and similar tools for surface finishing. The contact pressure against the tool is regulated by the air pressure.

The axis can yield in the axial direction, so a uniform contact pressure is ensured, even on uneven surfaces. This special type of force control ensures high rigidity perpendicular to the surface and the desired flexibility in the machining direction.



- ① **Tool holder**  
for different tool diameters
- ② **Dust cover**  
protects the bearings from contamination
- ③ **Pneumatic spindle**  
high performance spindle with up to 5600 1/min
- ④ **Bearing**  
for compensation of the pneumatic spindle
- ⑤ **Silencer**  
for exhaust

# MFT

Polishing spindle

## General notes about the series

**Mounting:** on the robot arm or as a stationary unit

**Actuation:** pneumatically, via dried, filtered and preferably oiled compressed air

**Warranty:** 24 months

**Ambient conditions:** Please note that the unit is not suitable for use in an area where coolants or cutting fluids are present.

## Application example

Robot-guided polishing with changing system for spindles

- 1 Polishing spindle MFT
- 2 Quick-change system SWS
- 3 Clamping force block



## SCHUNK offers more ...

The following components make the product even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.



Quick change system



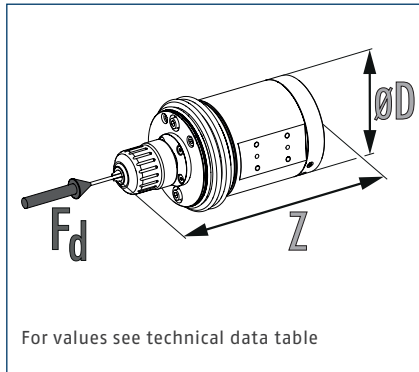
Manual change system

① For more information on these products can be found on the following product pages or at [schunk.com](http://schunk.com).

# MFT 390

Polishing spindle

## Dimensions and maximum loads



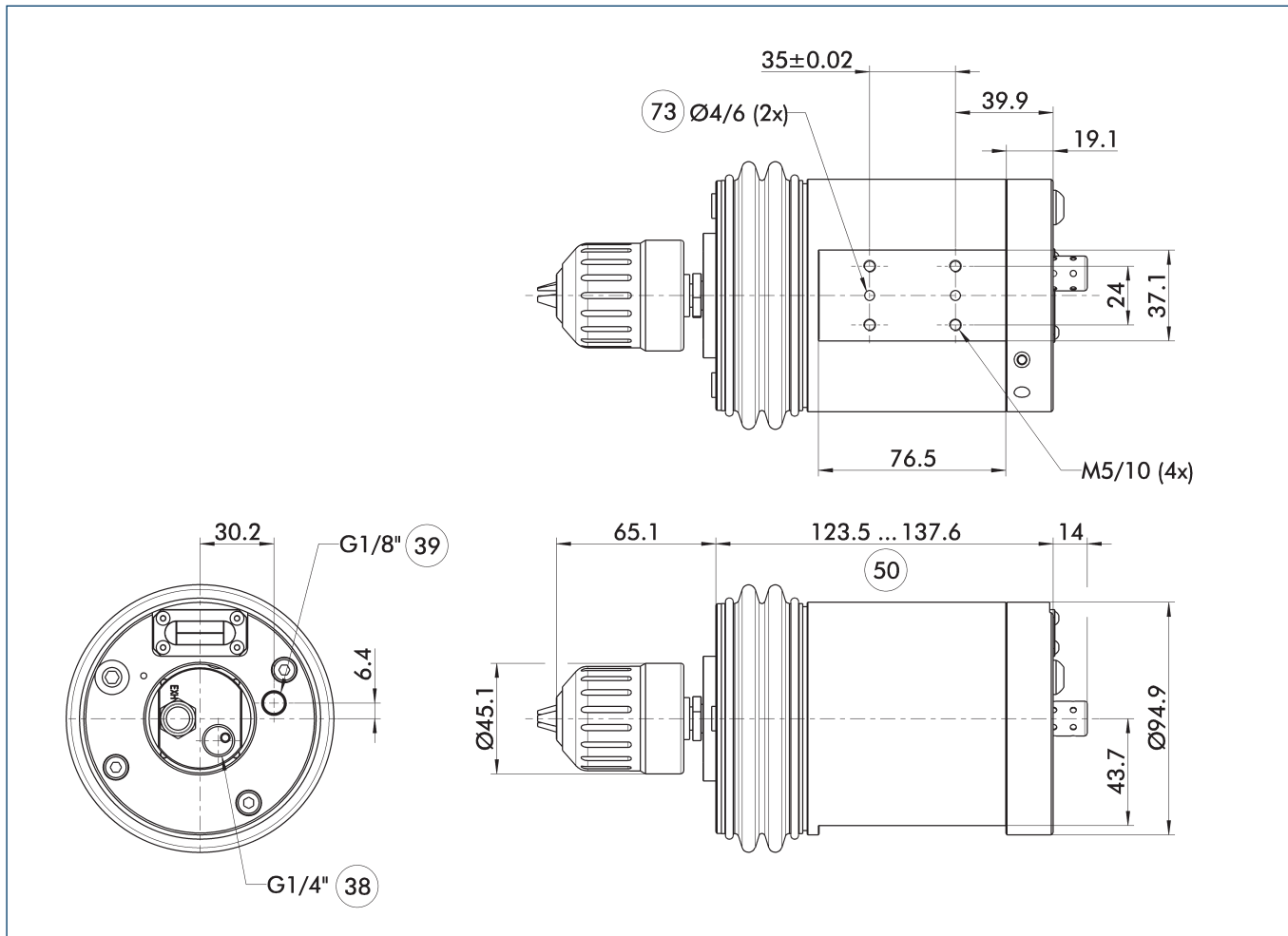
ⓘ The indicated forces show the maximum payload.

## Technical data

Description		MFT-390-F-0-0	MFT-390-F-R-0
ID		0322250	0322251
Forward sensor		yes	yes
Retract sensor		no	yes
Tachometer sensor		no	no
Recommended compensation path	[mm]	±7.5	±7.5
Max. compensation path	[mm]	15	15
Weight	[kg]	3.3	3.3
Compliance force at 0.35 bar	[N]	14	14
Compliance force at 4.1 bar	[N]	74	74
Idle speed	[1/min]	5600	5600
Noise emission	[dB(A)]	<75	<75
Speed under load	[1/min]	2600	2600
Power at 2600 RPM	[W]	390	390
Nominal torque	[Nm]	1.4	1.4
Standstill torque	[Nm]	2.7	2.7
Operating pressure	[bar]	6.2	6.2
Idle air consumption	[l/s]	9	9
Clamping diameter		3/8"	3/8"
Dimensions Ø D x Z	[mm]	94.9 x 202.7	94.9 x 202.7

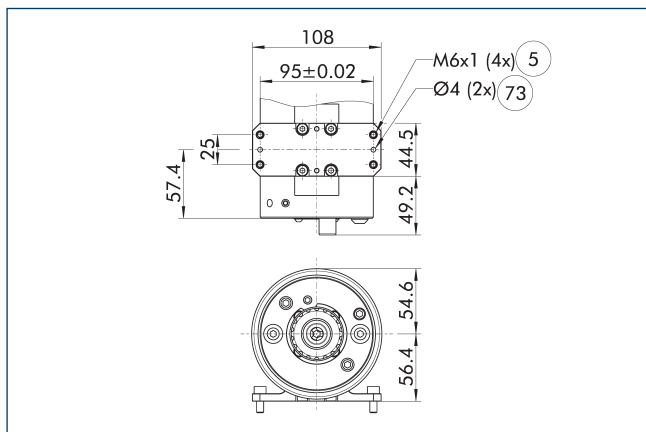


Main view



- 38 Air connection spindle
- 39 Compensation air connection
- 50 Axial compensation
- 73 Fit for centering pins

Adapter plates, radial



- 5 Through hole for connection with screws
- 73 Fit for centering pins

Description	ID
Adapter plate	
A-FDB-3xx/MFT-Radial	0322213

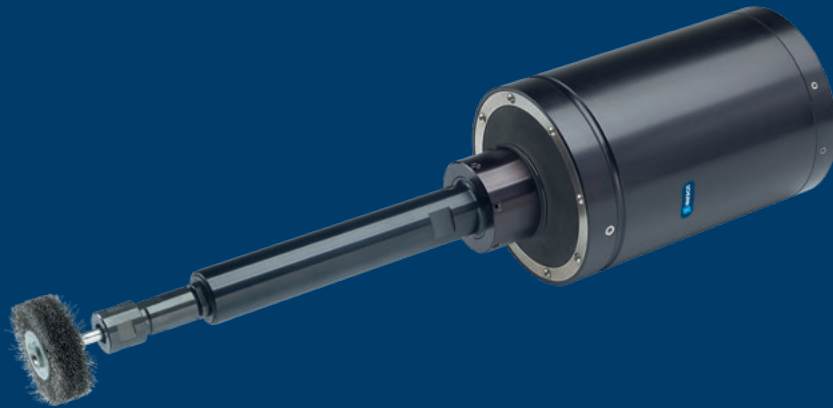


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## Product Information

Deburring spindle MFT-R

# MFT-R

Deburring spindle

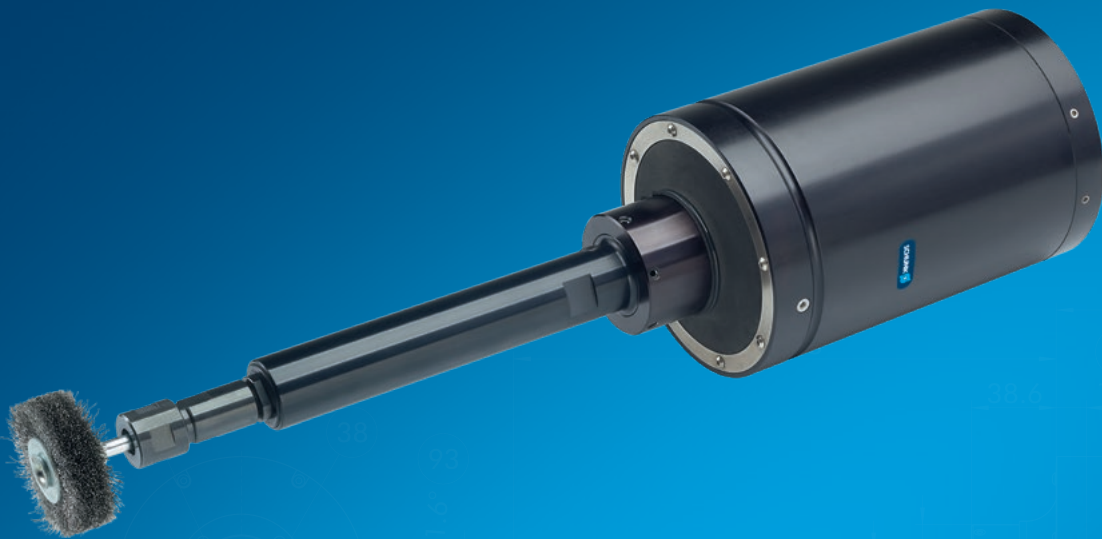
## Compliant. Flexible. Robust.

### Polishing spindle MFT-R

Radially compliant pneumatic polishing spindle, perfect for polishing and brushing workpieces

#### Field of application

for automatic brushing and polishing of different workpieces, geometries, and materials in a reproducible quality



#### Advantages – Your benefits

**Adjustable stiffness of the spindle via air pressure** for high-quality deburring results in any installation position

**Flexible use** on the robot arm or as a stationary unit

**Rotating piston air engine with high torque** for short stopping times and reduced processing times

**Radial compliance** for machining processes with radial compensation

**Gimballed system** for a robust set-up with compensation function and reduced programming effort of the robot

**Lock function for the Y axis** for an oscillating compensation only in the X-axis



Sizes  
Quantity: 1



Idle speed max.  
5600 1/min



Power  
390 W



Compensation angle,  
radial  
±1.6°

## Functional description

The unit is driven by a vane-type air motor. The motor is driven by filtered and oiled air. The spindle is gimbal-mounted to compensate for tolerances on the workpiece contour. The Y-axis can be optionally fixed by axis fixation

set screws. This means that pendulum compensation is only possible in the X axis. The compliance force is controlled via a second air connection. Depending on the pressure setting, a variable pressure force acts on the tool.



- ① **Rotating piston air engine**  
for a high torque and a short stopping time
- ② **Gimballed system**  
for a robust compensation function
- ③ **Air connection**  
for adjusting the compliance force
- ④ **Tool holder**  
for DA collets
- ⑤ **Air connection**  
for the supply of the motor

# MFT-R

Deburring spindle

## General notes about the series

**Mounting:** on the robot arm or as a stationary unit

**Actuation:** pneumatic, via filtered (< 5 µm, dry) and oiled compressed air (3-4 drops per minute)

**Scope of delivery:** Spindle with collet.

**Warranty:** 24 months

**Ambient conditions:** Please note that the unit is not suitable for use in an area where coolants or cutting fluids are present.

## Application example

Robot-guided brushing of a fillet weld on a welded component

- 1 Polishing spindle MFT-R
- 2 Quick-change system SWS
- 3 Workpiece
- 4 TANDEM KSP plus



## SCHUNK offers more ...

The following components make the product even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.



Quick change system



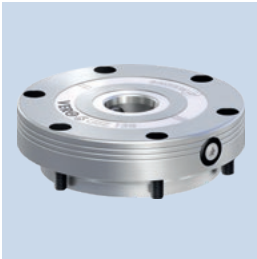
Manual change system



Force/torque sensor



2-finger parallel gripper



Quick-change Pallet System



Clamping force block



2-finger small components gripper



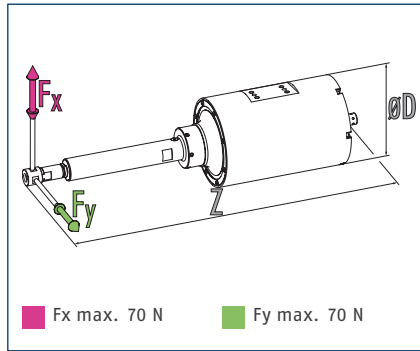
3-Finger Centric Gripper

① For more information on these products can be found on the following product pages or at [schunk.com](http://schunk.com).

# MFT-R 390

Deburring spindle

## Dimensions and maximum loads



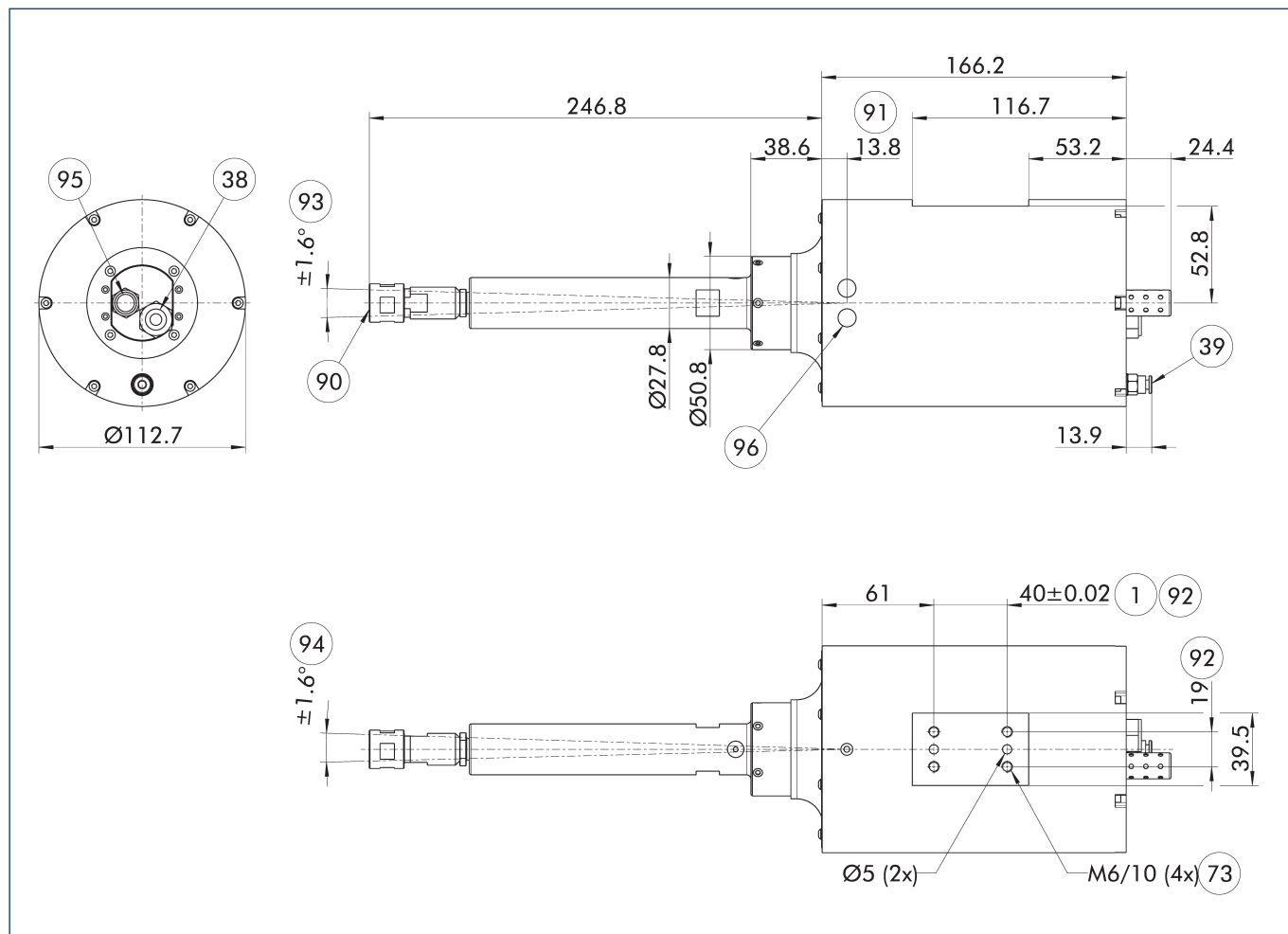
① The indicated torques and forces are static values, apply for each base jaw, and may occur simultaneously.

## Technical data

Description		MFT-R 390
ID		1451627
Power	[W]	390
Idle speed	[1/min]	5600
Nominal speed	[1/min]	2600
Max. compensation angle X	[°]	±1.6
Max. compensation X	[mm]	±7.1
Max. compensation angle Y	[°]	±1.6
Max. compensation Y	[mm]	±7.1
Axis fixation		integrated
Recommended compensation path	[mm]	±3.6
Min./max. compensation force	[N]	9.4/70
Min./max. compensation pressure	[bar]	1/4.1
Operating pressure	[bar]	6.2
Nominal torque	[Nm]	1.4
Standstill torque	[Nm]	2.7
Noise emission	[dB(A)]	50
maximum air consumption	[l/s]	9
Tool holder		Collet DA 6 mm and 8 mm
Air connection spindle		G1/4"
Compensation air connection		4 mm
Weight	[kg]	4.42
Min./max. ambient temperature	[°C]	5/35
Dimensions Ø D x Z	[mm]	112.7 x 413



## Main view



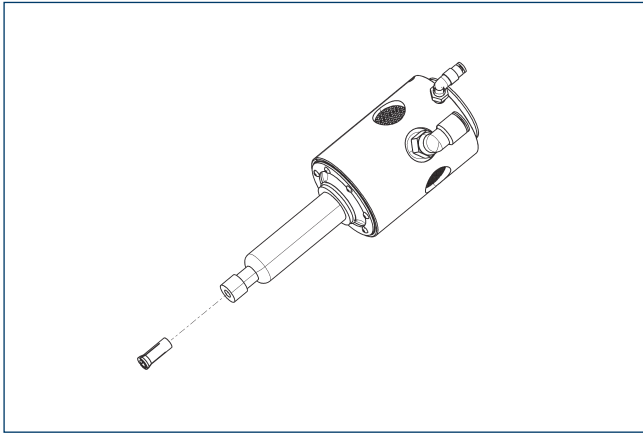
The drawing shows the unit in the basic version.

- |                                |  |
|--------------------------------|--|
| ① Robot-side connection        | ⑨② radial mounting option                      |
| ③⑧ Air connection spindle      | ⑨③ max. radial compensation (x axis)           |
| ③⑨ Compensation air connection | ⑨④ max. radial compensation (y axis, lockable) |
| ⑦③ Fit for centering pins      | ⑨⑤ Exhaust air silencer                        |
| ⑨⑦⑩ Tool holder                | ⑨⑥ Locking function for Y axis                 |
| ⑨① Pivot                       |  |

# MFT-R 390

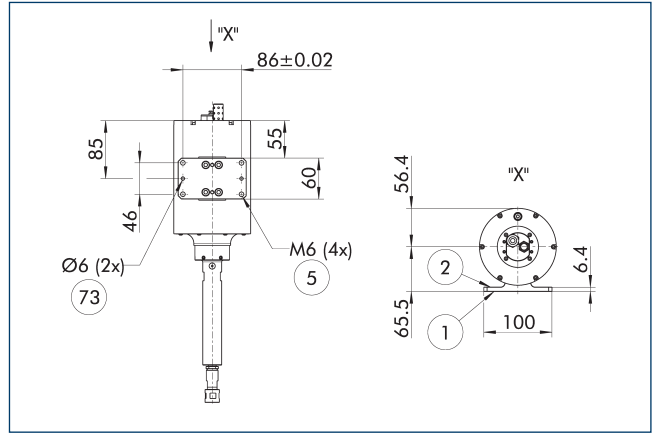
Deburring spindle

## Collets



Description	ID	Diameter
Collet Chuck Mounting		
MFT-C-DA200-6mm	1368254	6 mm
MFT-C-DA200-8mm	1310407	8 mm

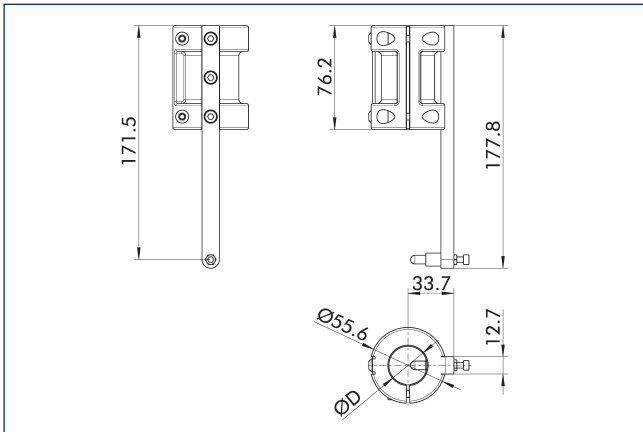
## Adapter plates, radial



- ① Robot-side connection
- ② Tool-side connection
- ⑤ Through hole for connection with screws
- ⑦3 Fit for centering pins

Description	ID	
Adapter plate		
A-FDB-660-1040/MFT-R-Radial	0322214	

## Profile follower



Profile follower for adjustably limiting the depth of cut along a surface

Description	ID	Diameter D
		[mm]
Profile follower		
RC-PF2-27,8mm	1453520	27.8





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## Product Information

Compensation unit PCFC

# Compliant. Flexible. Compact.

## Pneumatic Z-compensation unit

Pneumatic, axial compensation unit for flexible adjustment of compensation or contact forces

### Field of application

Flexible use possible in the automation of machining processes, as different tools such as a saw, a bench grinder, a belt or angle grinder, a screwdriver, riveting pliers or other tools can be attached to the tool side adapter plate or within the large central bore. Integrated measuring of the current position and a constantly adjustable contact force ensure a stable process and reproducible results.

### Advantages – Your benefits

**Compensation can be adjusted by means of a double-action pneumatic cylinder** for a constant contact force

**Integrated path-measuring system** for monitoring and control of the process

**Integrated weight force compensation** for constant pressure forces independent of the orientation of the tool, especially in robot-guided applications

**Flexibility in axial direction** for a simplified robot programming

**Simple extension of the force range** by adjusting the piston configuration

**Versatile in use** due to the option of screwing customer tools onto the adapter plate or into a through-bore

**Compact design** for minimum installation height



Sizes  
Quantity: 1



Compensation Z  
12 mm

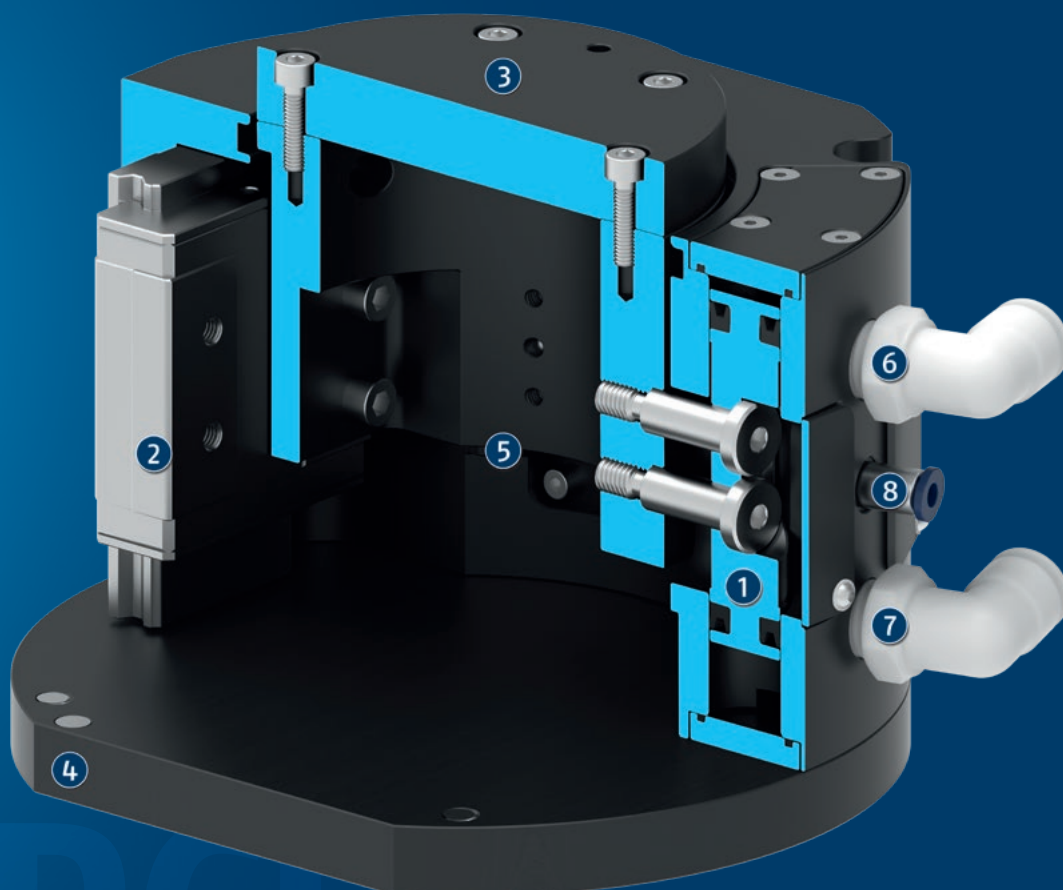


Max. compensation  
force  
85 .. 240 N

## Functional description

The compensation unit is operated by a double-acting pneumatic cylinder and has axial flexibility. The compensation force is set via the applied operating pressure and can therefore also be adjusted dynamically. The contact force can be controlled separately in two directions (retracting and extending) via two air connections. Depending on the piston configuration, a variable contact

force can be achieved. Due to the integrated stroke measuring system, the position of the compensation unit is confirmed via an analog signal and can be used for further process control. The built-in gyro sensor can be used to keep the compensation force constant regardless of the position.



- ① Piston
- ② Linear guide
- ③ Mounting  
for tool provided by customer
- ④ Robot-side connection
- ⑤ Integrated path-measuring system
- ⑥ Retract air connection compensation
- ⑦ Extend air connection compensation
- ⑧ Air purge connection

## General notes about the series

**Mounting:** on the robot arm or as a stationary unit

**Actuation:** pneumatic, via filtered (< 5 µm, dry) and unoiled compressed air

**Warranty:** 24 months

**Ambient conditions:** Please note that the unit is not suitable for use in an area where coolants or cutting fluids are present.



## Application example

Clean processing of edges of a lasered workpiece with constant pressure force, independent of the orientation of the robot. Also suitable for stationary use.

- 1 Passive Compliant Force Control Tool PCFC with customer's mini grinder
- 2 Passive Compliant Force Control Tool PCFC for stationary use with customer's bench grinder
- 3 Universal gripper PGN-plus-P
- 4 Workpiece



## SCHUNK offers more ...

The following components make the product even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.



Quick change system



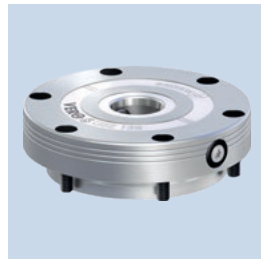
Manual change system



Force/torque sensor



2-finger parallel gripper



Quick-change Pallet System



Clamping force block



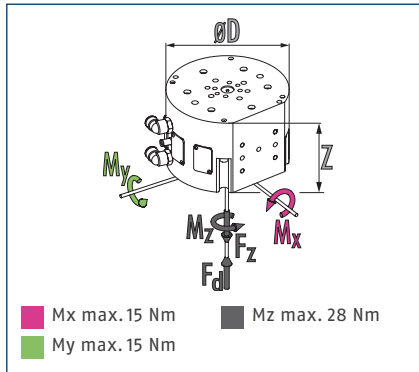
3-Finger Centric Gripper

① For more information on these products can be found on the following product pages or at [schunk.com](http://schunk.com).

# PCFC 12

Compensation unit

## Dimensions and maximum loads



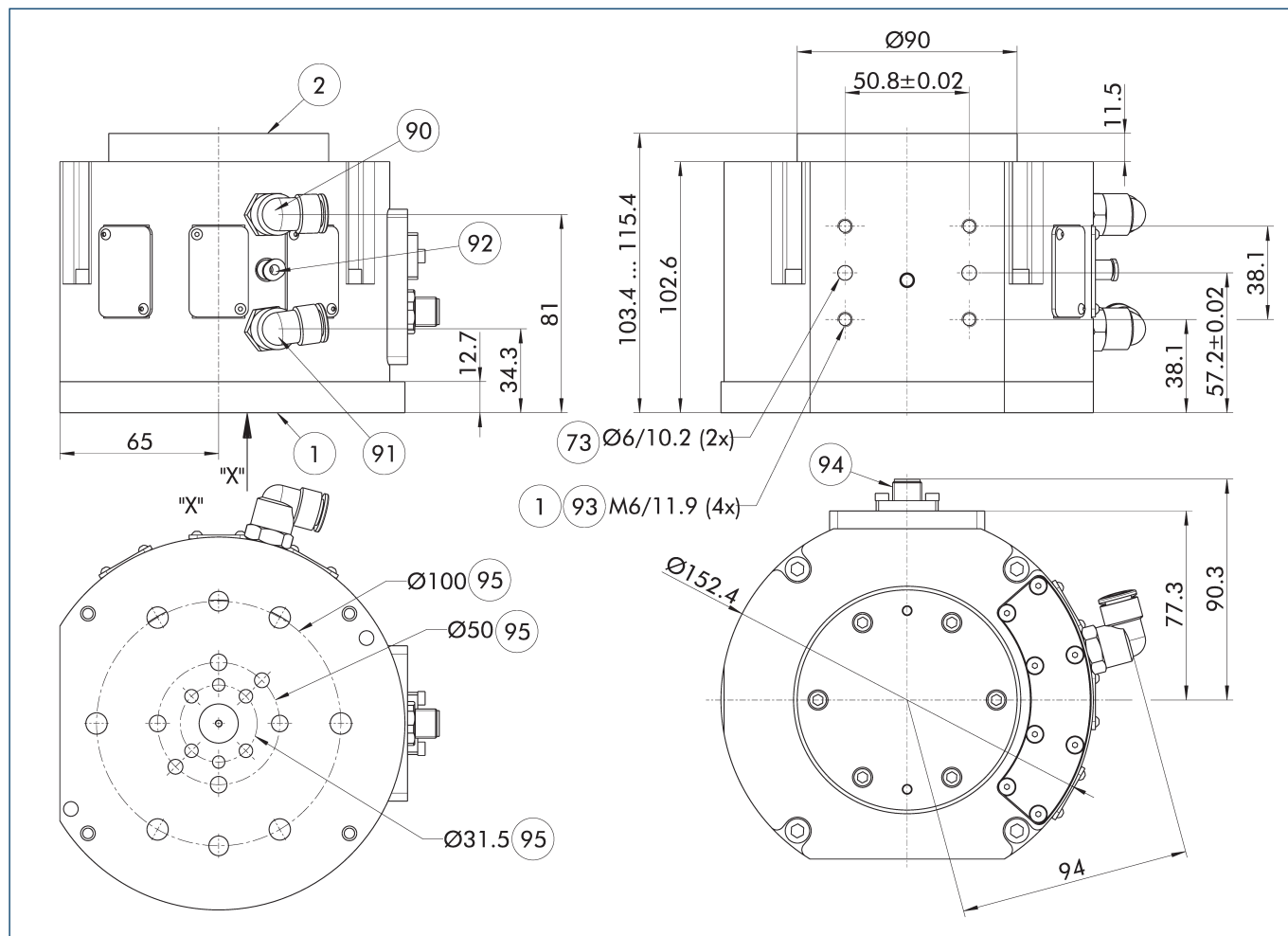
## Technical data

Description		PCFC-12-A	PCFC-12-B	PCFC-12-C
ID		1453546	1453552	1453555
Compensation Z	[mm]	12	12	12
Min./max. compensation force	[N]	18/85	44/170	49/240
Weight	[kg]	3.54	3.58	3.63
Min./max. compensation pressure	[bar]	1/4.1	1/4.1	1/4.1
Weight force compensation		integrated	integrated	integrated
Retract air connection compensation		10 mm	10 mm	10 mm
Extend air connection compensation		10 mm	10 mm	10 mm
Air purge connection		4 mm	4 mm	4 mm
Communication interface		RS-485	RS-485	RS-485
Min./max. ambient temperature	[°C]	5/35	5/35	5/35
Dimensions $\varnothing D \times Z$	[mm]	152.4 x 115.4	152.4 x 115.4	152.4 x 115.4

Options and their characteristics				
Variant with motor kit			PCFC-12-B-V750	
ID			1521945	
Power	[W]		750	
Idle speed	[1/min]		15000	
Nominal speed	[1/min]		11000	
Operating pressure motor	[bar]		6.2	
Max. air consumption	[l/min]		905	
Tool holder			Collet ER-11 6 mm	
Air connection motor			10 mm	
Weight	[kg]		4	

① The additionally required proportional control valves for gravity compensation are to be provided by the customer.

Main view



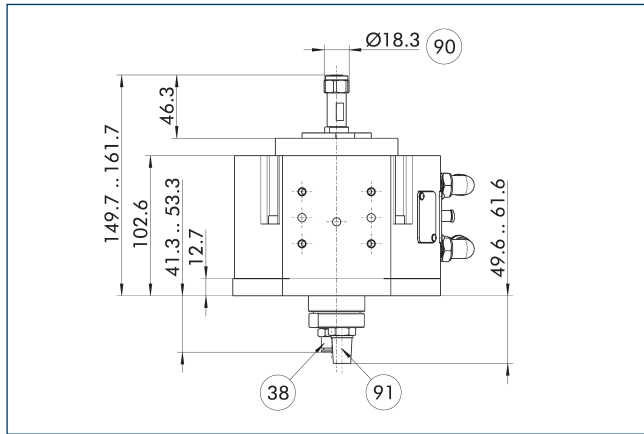
The main view shows the unit in its basic version.

- |  |   |
|--|---|
| ① Robot-side connection  | ⑨② Air purge connection, hose screw connection for 4 mm hose        |
| ② Tool-side connection   | ⑨③ radial mounting option   |
| ⑦③ Fit for centering pins  | ⑨④ Sensor connection  |
| ⑨① Extend air connection compensation, hose screw connection for 10 mm hose  | ⑨⑤ Bolt circle DIN ISO-9409 (centering collar optionally available) |
| ⑨① Retract air connection compensation, hose screw connection for 10 mm hose |   |

# PCFC 12

Compensation unit

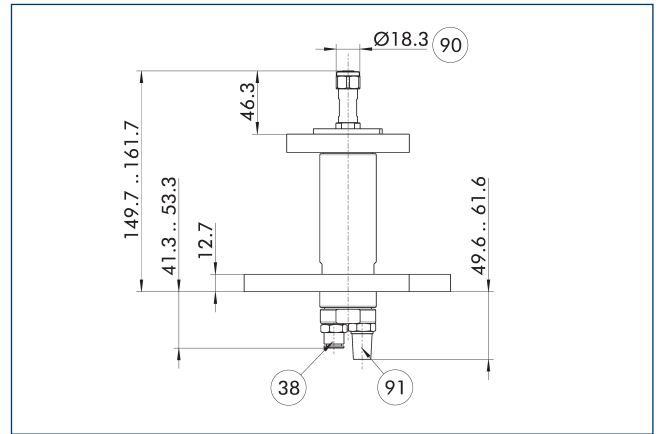
## PCFC with pneumatic motor 750 Watt



- 38 Air connection spindle
- 91 Silencer
- 90 Tool holder

The drawing shows the variant with motor kit.

## Motor kit 750 watt for retrofitting

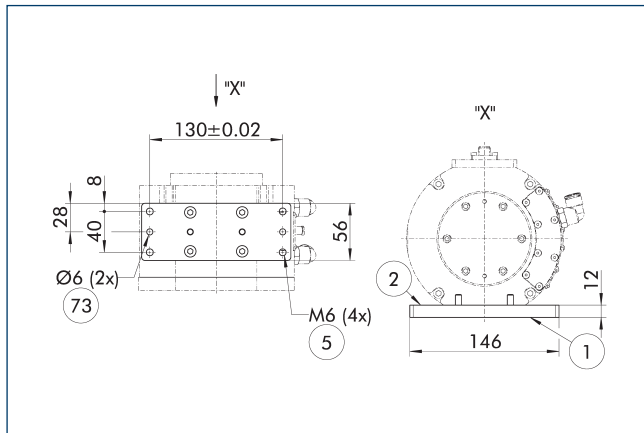


- 38 Air connection spindle
- 91 Silencer
- 90 Tool holder

Description	ID
Retrofitting kit	
PCFC-Motor-Kit-V750	1519935

- ① Motor kit for retrofitting to PCFC

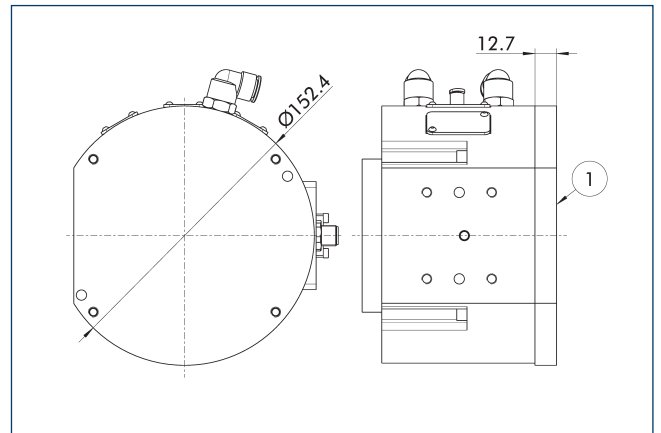
## Adapter plates, radial



- 1 Robot-side connection
- 2 Tool-side connection
- 5 Through hole for connection with screws
- 73 Fit for centering pins

Description	ID
Adapter plate	
A-PCFC-Radial	1453559

## Adapter plates axial



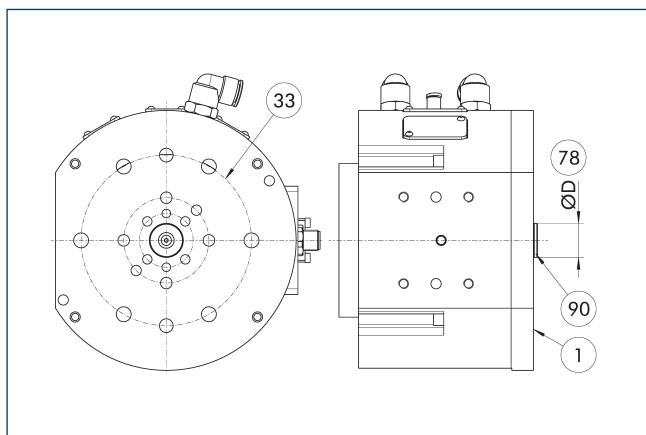
- 1 Robot-side connection

Unfinished tool-side adapter to be machined by the customer.

Description	ID
Adapter plate	
PCFC-E-Deckelplatte-BLANK	1507487

- ① When using the blank adapter plate, the standard mounted adapter plate must be disassembled beforehand.

Centering disc



- ① Robot-side connection
- ③③ DIN ISO-9409 bolt circle
- ⑦⑧ Fit for centering
- ⑨⑩ Centering disc

Description	ID	Diameter D	DIN ISO-9409 bolt circle
		[mm]	[mm]
Centering disc			
A-PCFC-BOSS 31.5 mm	1507674	31.5	50
A-PCFC-BOSS 63 mm	1507675	63	100
A-SWK-007-CM/PCFC-BOSS 20mm	1398809	20	31.5

① Serves as a fitting collar for centering on mechanical interfaces, e.g. on the robot with flange in accordance with ISO 9409.



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## Product Information

Deburring spindle RCE

# RCE

Deburring spindle

**Compliant. Flexible. Electric.**

## Electric Deburring Tool RCE

Radially compliant electric deburring tool and adjustable RPM for machining workpieces

### Field of application

for automatic deburring of different workpieces, geometries, and materials in a reproducible quality



### Advantages – Your benefits

**Brushless Electric Motor** for high efficiency, long service life and adjustable speed for more flexibility

**Variable speed control** for the flexible machining of different workpieces with different tools and only one electric deburring tool

**Adjustable rigidity of the tool via compressed air** for high-quality deburring results in any installation position

**Gimballed system** for a robust set-up with compensation function and reduced programming effort of the robot

**Lower air consumption and less pneumatic air preparation** by a smaller pneumatic periphery

**Lock function for the Y axis** for an oscillating compensation only in the X-axis

**Flexible use** on the robot arm or as a stationary unit



Sizes  
Quantity: 2



Idle speed max.  
13000 .. 50000 1/min



Power  
230 .. 710 W



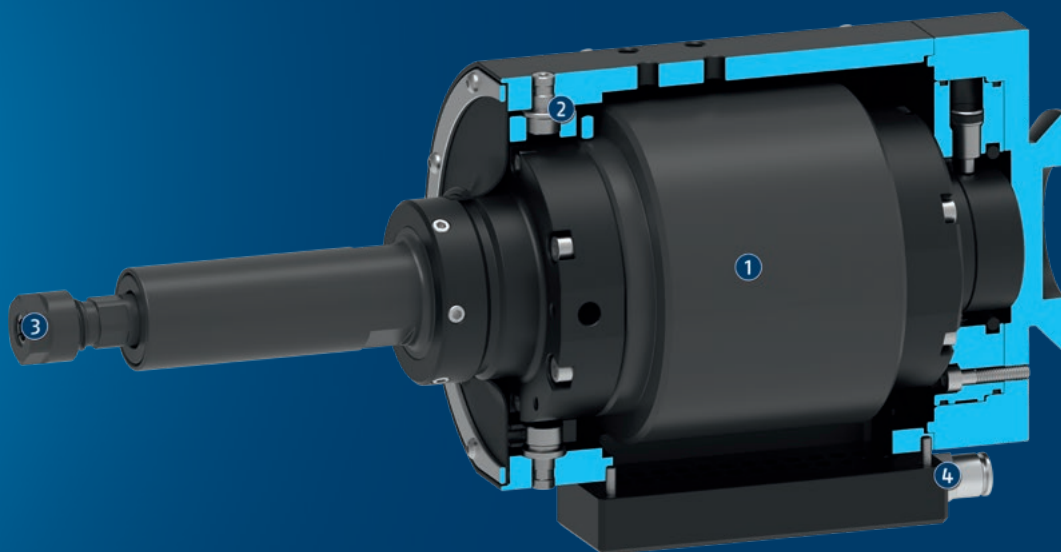
Compensation angle,  
radial  
±1.8 .. 3°



## Functional description

The unit is driven by a brushless electric motor with an adjustable speed of rotation. The motor is cooled via a separate air connection with filtered and dry air. The spindle is gimbal-mounted to compensate for tolerances on the workpiece contour. The Y-axis can optionally be

fixed by an axis fixation set screw. This means that pendulum compensation is only possible in the X axis. The compliance force is controlled via a second air connection. Depending on the pressure setting, a variable pressure force acts on the tool.



- ① **Brushless Electric Motor**  
with adjustable speed of rotation for versatile use and a long service life
- ② **Gimballed system**  
for a robust compensation function

- ③ **Tool holder**  
for ER-11 collets
- ④ **Air connection**  
for cooling the motor

## General notes about the series

**Mounting:** on the robot arm or as a stationary unit

**Scope of delivery:** Spindle with collet chuck and pneumatic screw connection, connection cable from spindle to electronics

**Warranty:** 24 months

**Ambient conditions:** Please note that the unit is not suitable for use in an area where coolants or cutting fluids are present.

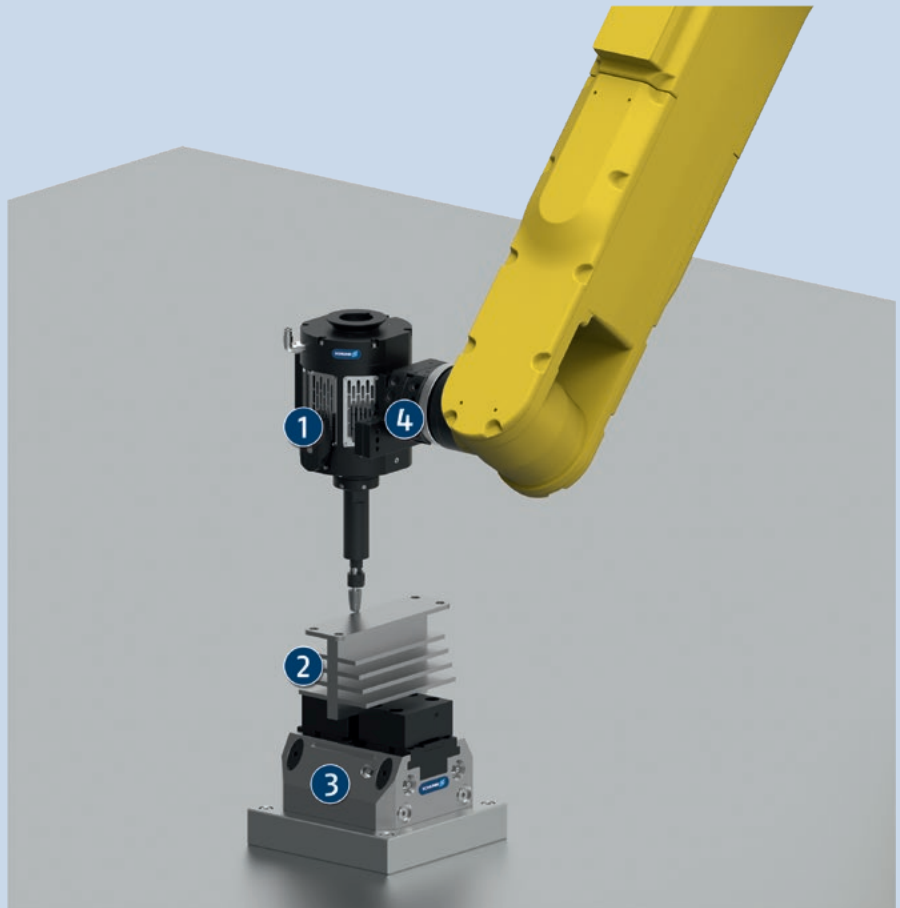
**Actuation, motor:** electrical

**Actuation, compensation and cooling:** pneumatic, via filtered (< 5 µm, dry) and unoled compressed air

## Application example

Robot-guided deburring of a milled heat sink

- ① Electric Deburring Tool RCE
- ② Workpiece  
Heat sink
- ③ TANDEM KSP plus
- ④ Quick-change system SWS



## SCHUNK offers more ...

The following components make the product even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.



Quick change system



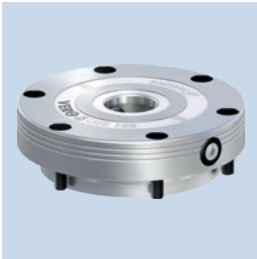
Manual change system



Force/torque sensor



2-finger parallel gripper



Quick-change Pallet System



Clamping force block



2-finger small components gripper



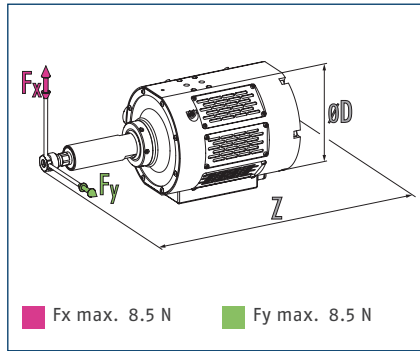
3-Finger Centric Gripper

① For more information on these products can be found on the following product pages or at [schunk.com](http://schunk.com).

# RCE 230

Deburring spindle

## Dimensions and maximum loads

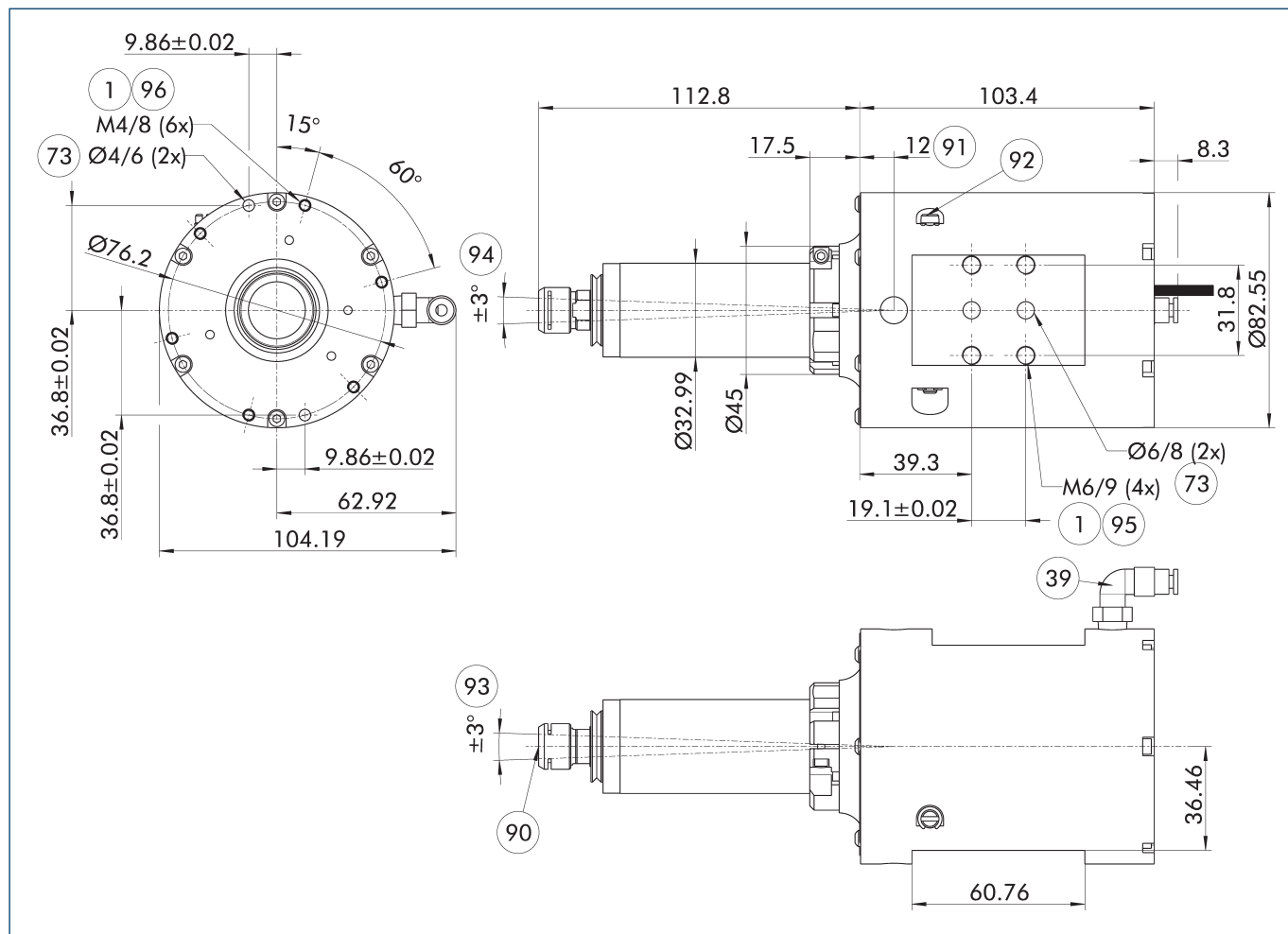


## Technical data

Description		RCE 230
ID		1521944
Power	[W]	230
Min./max. RPM	[1/min]	5000/50000
Max. compensation angle X	[°]	±3
Max. compensation X	[mm]	±7.1
Max. compensation angle Y	[°]	±3
Max. compensation Y	[mm]	±7.1
Axis fixation		integrated
Recommended compensation path	[mm]	±3
Min./max. compensation force	[N]	1.8/8.5
Min./max. compensation pressure	[bar]	1/4.1
Tool holder		Collet ER-11 6 mm
Compensation air connection		4 mm
Max. pressure air cooling	[bar]	2.1
Weight	[kg]	1.7
Min./max. ambient temperature	[°C]	5/45
Cable length	[m]	5
Dimensions Ø D x Z	[mm]	82.6 x 216.3

ⓘ Operation of the RCE is only possible with the suitable frequency converter.

Main view



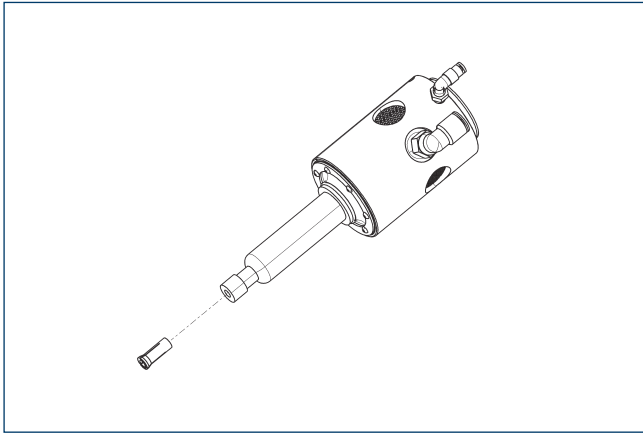
The drawing shows the unit in the basic version.

- ① Robot-side connection
- ③⑨ Compensation air connection
- ⑦③ Fit for centering pins
- ⑨⑩ Tool holder
- ⑨① Pivot
- ⑨② Locking function for Y axis
- ⑨③ max. radial compensation (x axis)
- ⑨④ max. radial compensation (y axis, lockable)
- ⑨⑤ radial mounting option
- ⑨⑥ axial mounting option

# RCE 230

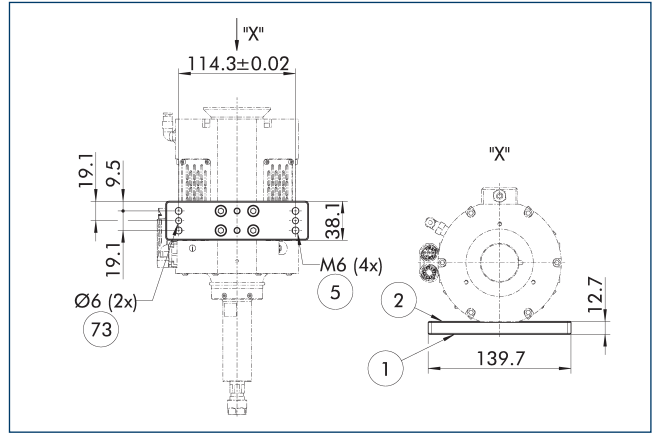
## Deburring spindle

### Collets



Description	ID	Diameter
Collet Chuck Mounting		
CC ER 11 Ø2.5-3	0280104	3 mm
RCV-ER-11-Collet-6mm	1453567	6 mm
RCV-ER-11-Collet-8mm	1453568	8 mm

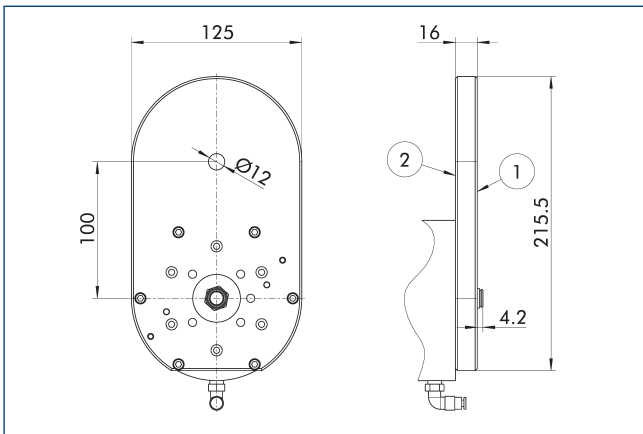
### Adapter plates, radial



- ① Robot-side connection
- ② Tool-side connection
- ⑤ Through hole for connection with screws
- ⑦③ Fit for centering pins

Description	ID
Adapter plate	
A-AOV/CRT/RCV-250/490/RCE-radial	1420116

### Adapter plates axial

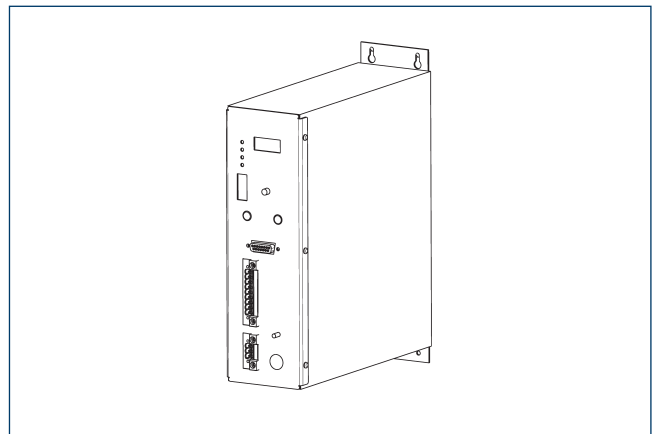


- ① Robot-side connection
- ② Tool-side connection

Tool-side blank adapter plate to be machined by the customer.

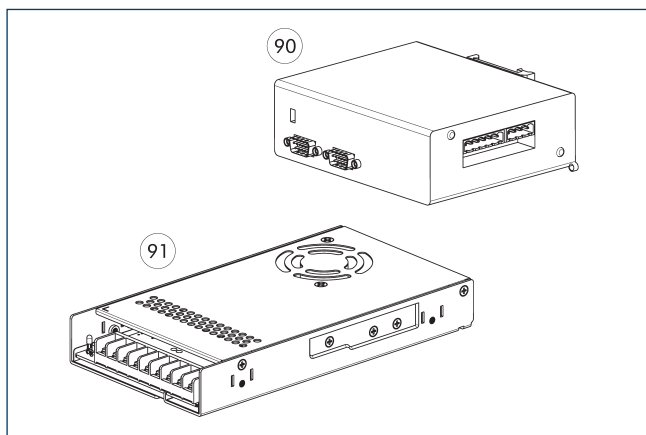
Description	ID
Adapter plate	
A-RCV-250/490-Axial-Offset-Blank	1453502

### Frequency converter with HMI



Description	ID	Dimensions frequency converter [mm]	Dimensions power supply
Control electronics			
RCE-230-FC-AC230	1519922	274/248/86.4	//

## Frequency converter



⑨⑩ Frequency converter

⑨① Power supply 48 VDC

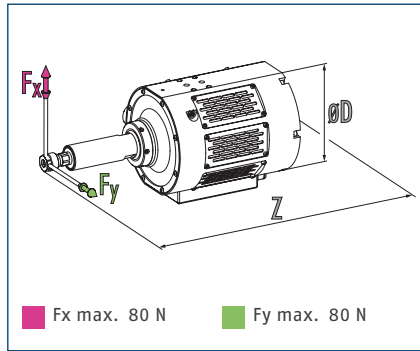
Description	ID	Dimensions frequency converter [mm]	Dimensions power supply [mm]
Control electronics			
RCE-230-FC48	1525664	136/115/45.5	215/115/30

⑩ Consists of the frequency converter and the power supply unit.

# RCE 710

Deburring spindle

## Dimensions and maximum loads



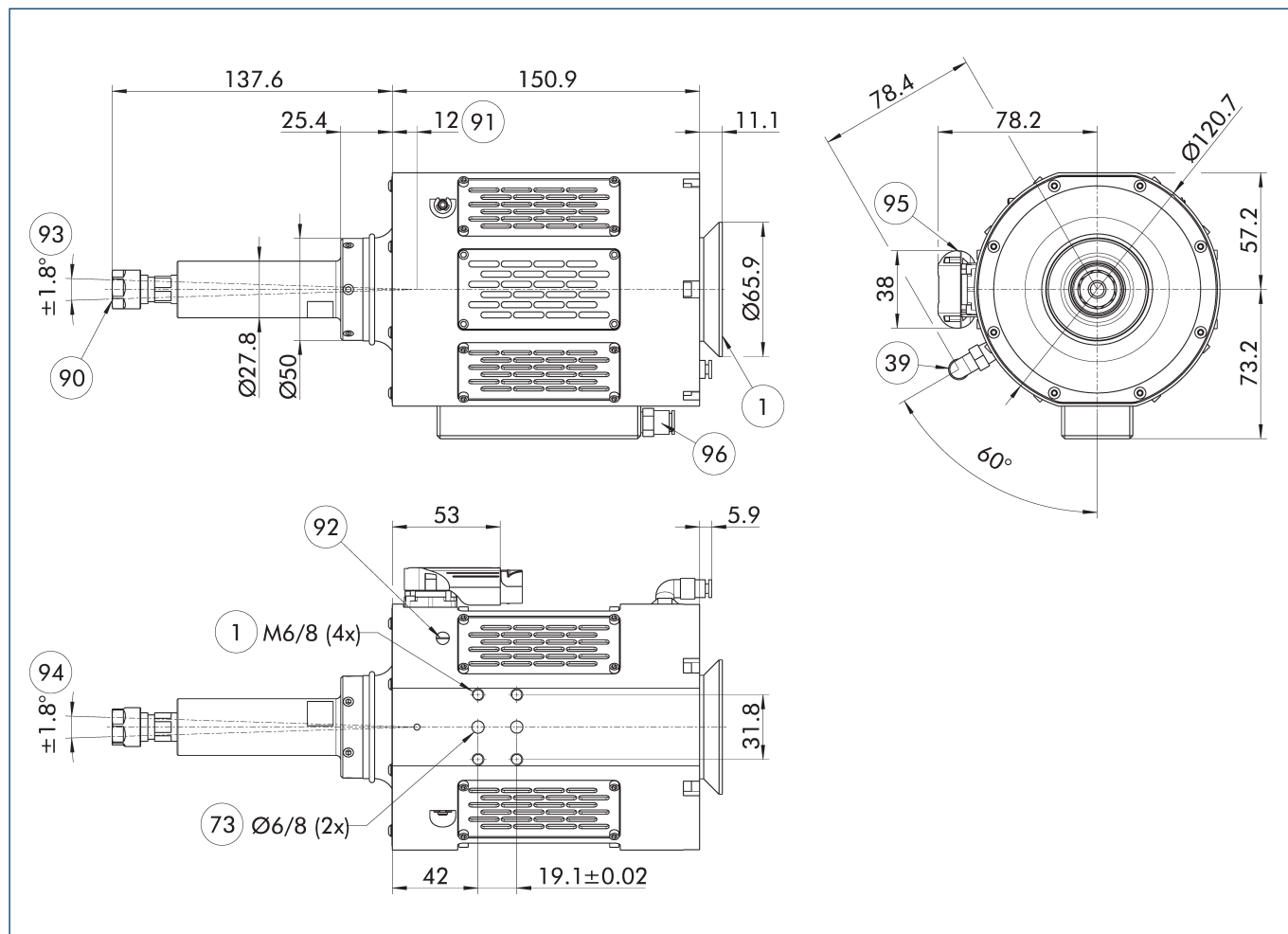
## Technical data

Description		RCE 710
ID		1525659
Power	[W]	710
Min./max. RPM	[1/min]	1000/13000
Max. compensation angle X	[°]	±1.8
Max. compensation X	[mm]	±4.6
Max. compensation angle Y	[°]	±1.8
Max. compensation Y	[mm]	±4.6
Axis fixation		integrated
Recommended compensation path	[mm]	±2.5
Min./max. compensation force	[N]	24.5/80
Min./max. compensation pressure	[bar]	1/4.1
Tool holder		Collet ER-11 6 mm and 8 mm
Compensation air connection		4 mm
Max. pressure air cooling	[bar]	2.1
Weight	[kg]	5.35
Min./max. ambient temperature	[°C]	5/60
Cable length	[m]	10
Dimensions $\varnothing D \times Z$	[mm]	120.7 x 288.5

ⓘ Operation of the RCE is only possible with the suitable frequency converter.



### Main view



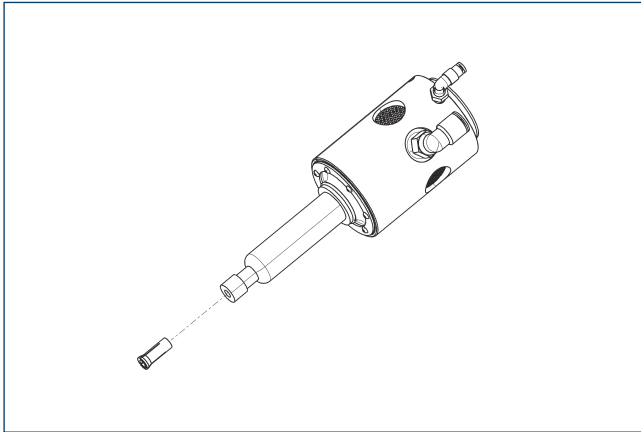
The drawing shows the unit in the basic version.

- |                                |  |
|--------------------------------|--|
| ① Robot-side connection        | ⑨③ max. radial compensation (x axis)           |
| ③⑨ Compensation air connection | ⑨④ max. radial compensation (y axis, lockable) |
| ⑦③ Fit for centering pins      | ⑨⑤ Electrical connection                       |
| ⑨⑦ Tool holder                 | ⑨⑥ Air connection cooling                      |
| ⑨① Pivot                       |  |
| ⑨② Locking function for Y axis |  |

# RCE 710

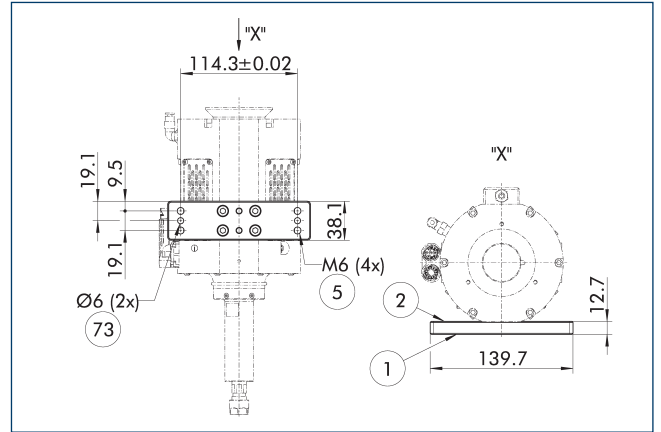
Deburring spindle

## Collets



Description	ID	Diameter
Collet Chuck Mounting		
CC ER 11 Ø2.5-3	0280104	3 mm
RCV-ER-11-Collet-6mm	1453567	6 mm
RCV-ER-11-Collet-8mm	1453568	8 mm

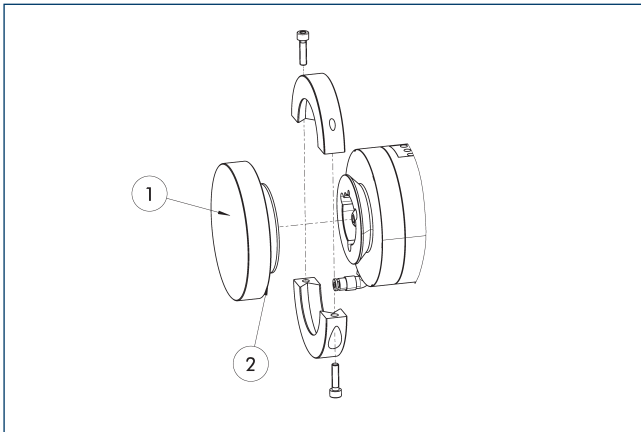
## Adapter plates, radial



- ① Robot-side connection
- ② Tool-side connection
- ⑤ Through hole for connection with screws
- ⑦③ Fit for centering pins

Description	ID
Adapter plate	
A-AOV/CRT/RCV-250/490/RCE-radial	1420116

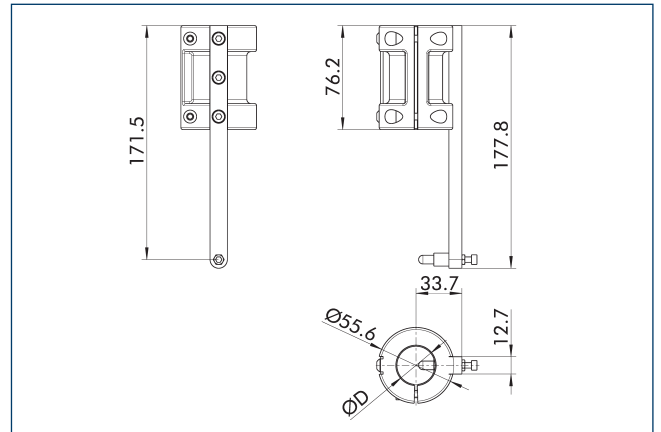
## Adapter plates axial



- ① Robot-side connection
- ② Tool-side connection

Description	ID	DIN ISO-9409 bolt circle [mm]
Adapter plate		
A-AOV-Axial-ISO-A50	1453540	50
A-FDB-660-1040/RCE-710/AOV-Axial-BLANK	0322211	

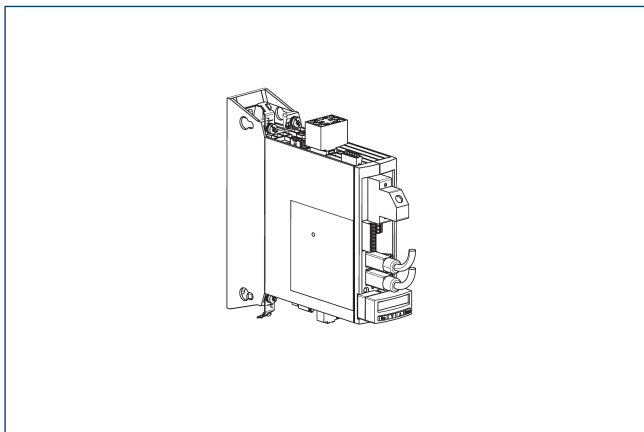
## Profile follower



Profile follower for adjustably limiting the depth of cut along a surface

Description	ID	Diameter D [mm]
Profile follower		
RC-PF2-27,8mm	1453520	27.8

## Bosch Rexroth IndraDrive Cs controller



Description	ID	Controller	Note
Controller			
RCE-710-Servodrive	1525661	HCS01.1E-W0013	Control panel included



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Superior Clamping and Gripping



## Product Information

Deburring spindle RCV

# RCV

Deburring spindle

## Compliant. Flexible. Robust.

### Deburring spindle RCV

Pneumatic deburring spindle with radial compensation for deburring workpieces

#### Field of application

for automatic deburring of different workpieces, geometries, and materials in a reproducible quality



#### Advantages – Your benefits

**The compensation force can be adjusted means of compressed air.** for high-quality deburring results in any installation position

**Flexible use** on the robot arm or as a stationary unit

**Rotating piston air engine with high torque** for high feed rates and a reduced machining time

**Flexibility in radial direction** for a simplified robot programming

**Lock function for the Y axis** for an oscillating compensation only in the X-axis

**Simple exchange of wear parts** for maximum system availability and minimum spare parts requirements

**Robust bearing** for an optimized service life



Sizes  
Quantity: 2



Idle speed max.  
30000 .. 40000 1/min



Power  
250 .. 490 W

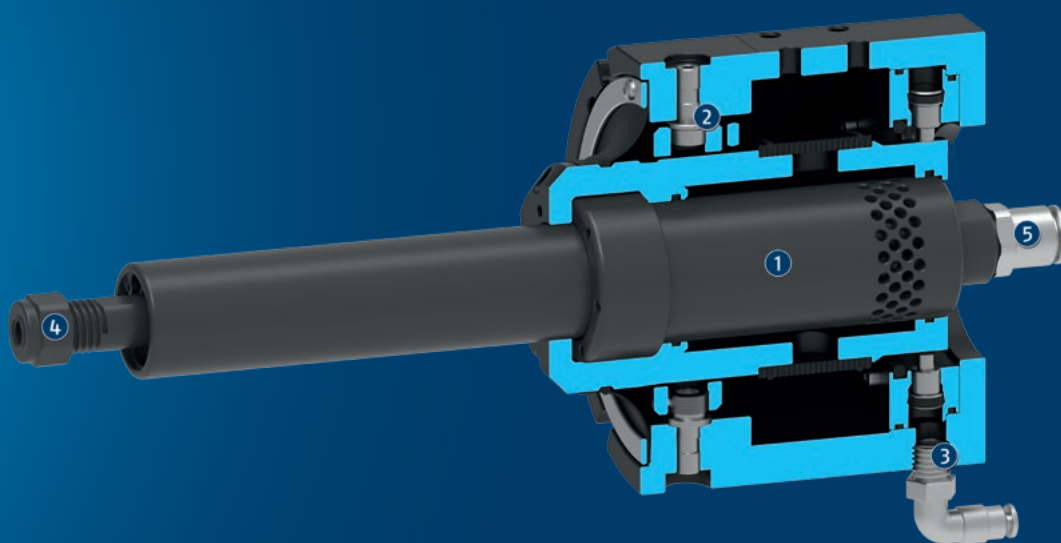


Compensation angle,  
radial  
 $\pm 3^\circ$

## Functional description

The unit is driven by a pneumatic rotating piston air engine. Its speed of rotation depends on the unit size. The motor is driven by filtered and oiled air. The spindle is gimbal-mounted to compensate for tolerances on the workpiece contour. The Y-axis can optionally be fixed by a

set screw. This means that pendulum compensation is only possible in the X axis. The compliance force is controlled via a second air connection. Depending on the pressure setting, a variable pressure force acts on the tool.



- ① **Rotating piston air engine**  
for a high torque and a short stopping time
- ② **Gimballed system**  
for a robust compensation function
- ③ **Air connection**  
for adjusting the compliance force
- ④ **Tool holder**  
for ER-11 collets
- ⑤ **Air connection**  
for the supply of the motor

# RCV

Deburring spindle

## General notes about the series

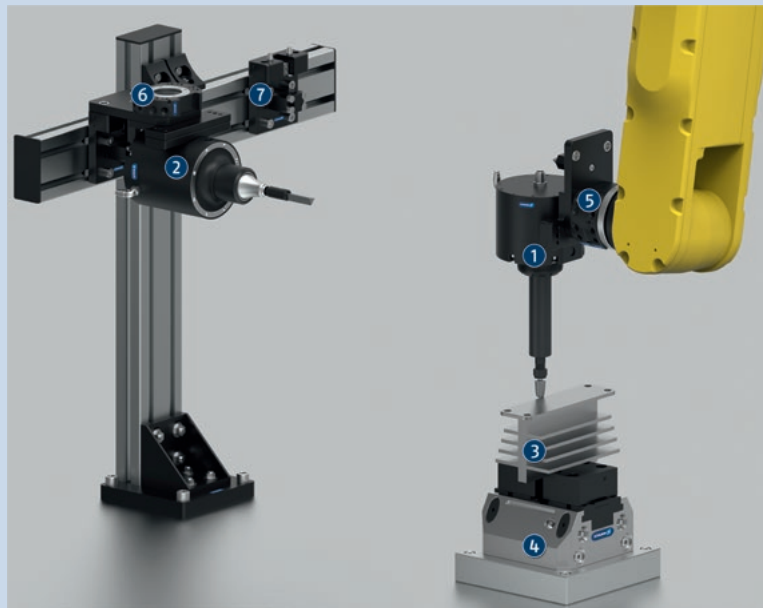
**Mounting:** on the robot arm or as a stationary unit

**Actuation:** pneumatic, via filtered (<5 µm, dry) and oiled compressed air (1-2 drops per minute)

**Scope of delivery:** Spindle with collet and pneumatic screw connections.

**Warranty:** 24 months

**Ambient conditions:** Please note that the unit is not suitable for use in an area where coolants or cutting fluids are present.



## Application example

Robot-guided deburring of a milled part with complex contours.

- 1 Deburring spindle RCV
- 2 Pneumatic file tool CRT
- 3 Heat sink
- 4 TANDEM KSP plus
- 5 Quick-change system SWS
- 6 Quick-change adapter SWA
- 7 Storage module pin and bushing for RCV



## SCHUNK offers more ...

The following components make the product even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.



Quick change system



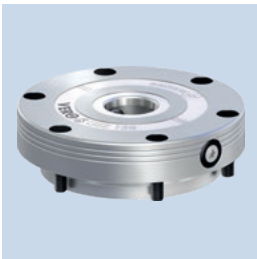
Manual change system



Force/torque sensor



2-finger parallel gripper



Quick-change Pallet System



Clamping force block



2-finger small components gripper



3-Finger Centric Gripper

For more information on these products can be found on the following product pages or at [schunk.com](http://schunk.com).

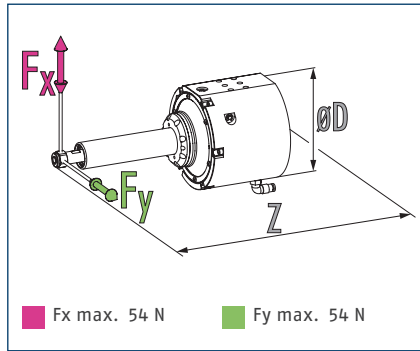
## Options and special information

**Universally:** Its flexible assembly possibilities mean the RCV deburring spindle is not restricted to use on a robot arm. It can also be used as a fixed tool with a moving workpiece.

# RCV 250

Deburring spindle

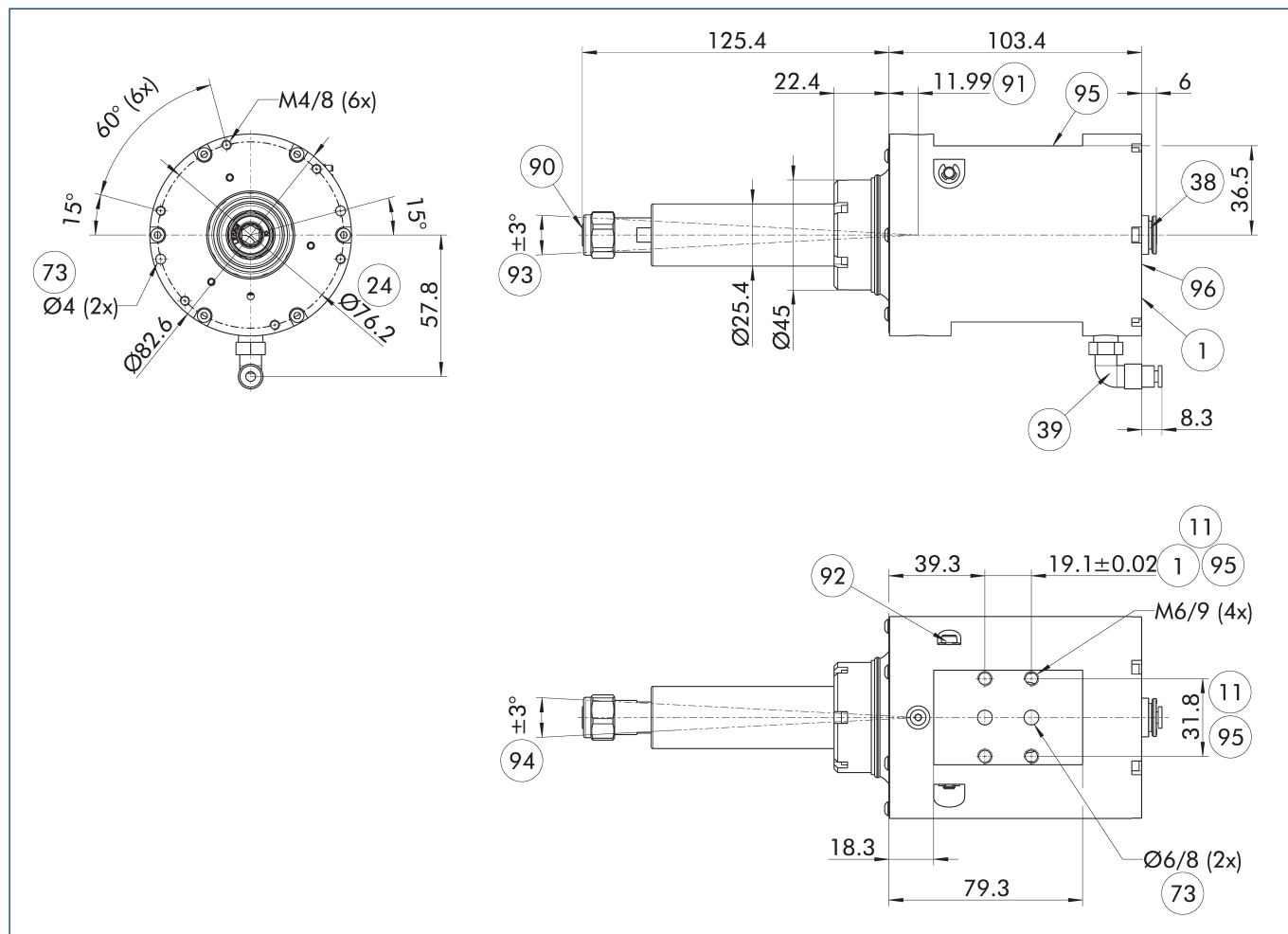
## Dimensions and maximum loads



## Technical data

Description		RCV-250
ID		1460804
Power	[W]	250
Idle speed	[1/min]	40000
Nominal speed	[1/min]	20000
Max. compensation angle X	[°]	±3
Max. compensation X	[mm]	±7.1
Max. compensation angle Y	[°]	±3
Max. compensation Y	[mm]	±7.1
Axis fixation		integrated
Recommended compensation path	[mm]	±3.5
Min./max. compensation force	[N]	9/54
Min./max. compensation pressure	[bar]	1/4.1
Operating pressure	[bar]	6.2
maximum air consumption	[l/s]	14.2
Tool holder		Collet ER-11 6 mm and 8 mm
Air connection spindle		10 mm
Compensation air connection		4 mm
Weight	[kg]	1.71
Min./max. ambient temperature	[°C]	5/35
Dimensions Ø D x Z	[mm]	82.6 x 228.8

### Main view



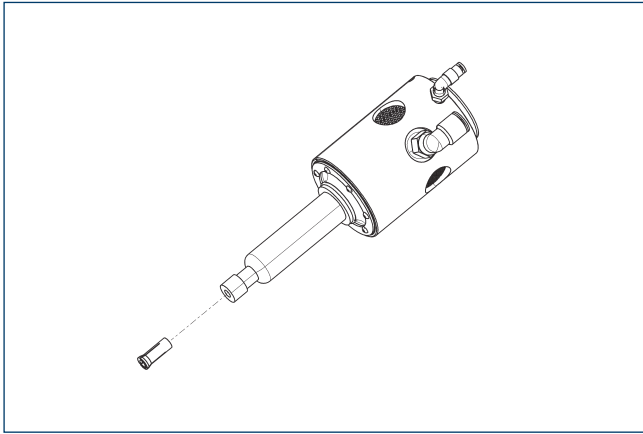
The drawing shows the unit in the basic version.

- |                                   |  |
|-----------------------------------|--|
| ① Robot-side connection           | ⑨① Pivot                                       |
| ①① Drilling pattern on both sides | ⑨② Locking function for Y axis                 |
| ②④ Bolt circle                    | ⑨③ max. radial compensation (x axis)           |
| ③⑧ Air connection spindle         | ⑨④ max. radial compensation (y axis, lockable) |
| ③⑨ Compensation air connection    | ⑨⑤ radial mounting option                      |
| ⑦③ Fit for centering pins         | ⑨⑥ axial mounting option                       |
| ⑨⑦ Tool holder                    |  |

# RCV 250

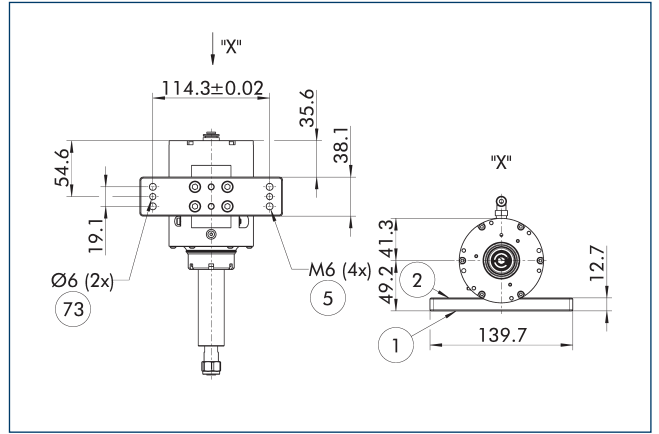
Deburring spindle

## Collets



Description	ID	Diameter
Collet Chuck Mounting		
RCV-ER-11-Collet-6mm	1453567	6 mm
RCV-ER-11-Collet-8mm	1453568	8 mm

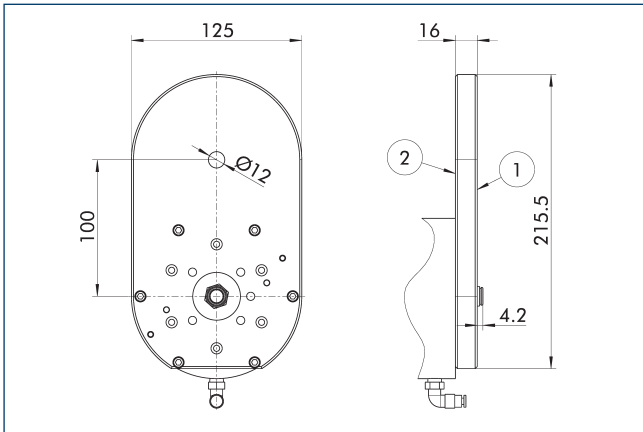
## Adapter plates, radial



- ① Robot-side connection
- ② Tool-side connection
- ⑤ Through hole for connection with screws
- ⑦③ Fit for centering pins

Description	ID
Adapter plate	
A-AOV/CRT/RCV-250/490/RCE-radial	1420116

## Adapter plates axial

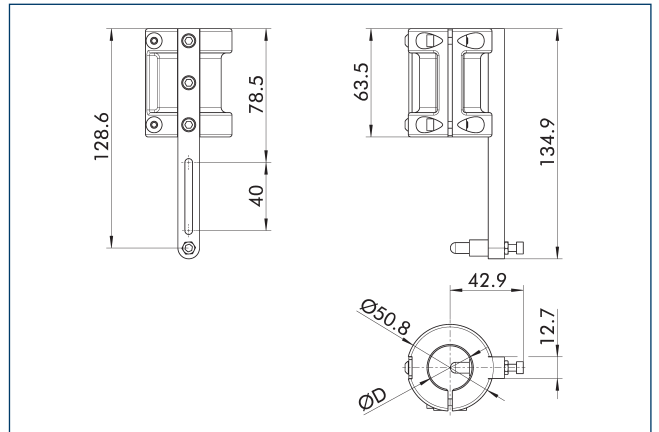


- ① Robot-side connection
- ② Tool-side connection

Tool-side blank adapter plate to be machined by the customer.

Description	ID
Adapter plate	
A-RCV-250/490-Axial-Offset-Blank	1453502

## Profile follower



Profile follower for adjustably limiting the depth of cut along a surface

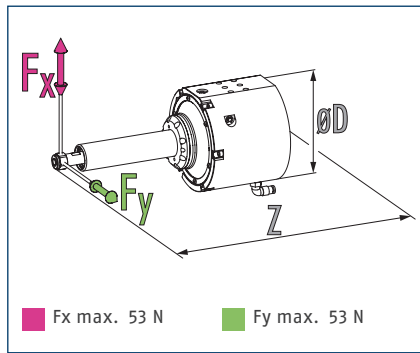
Description	ID	Diameter D [mm]
Profile follower		
RC-PF1-25,4mm	1453506	25.4



# RCV 490

Deburring spindle

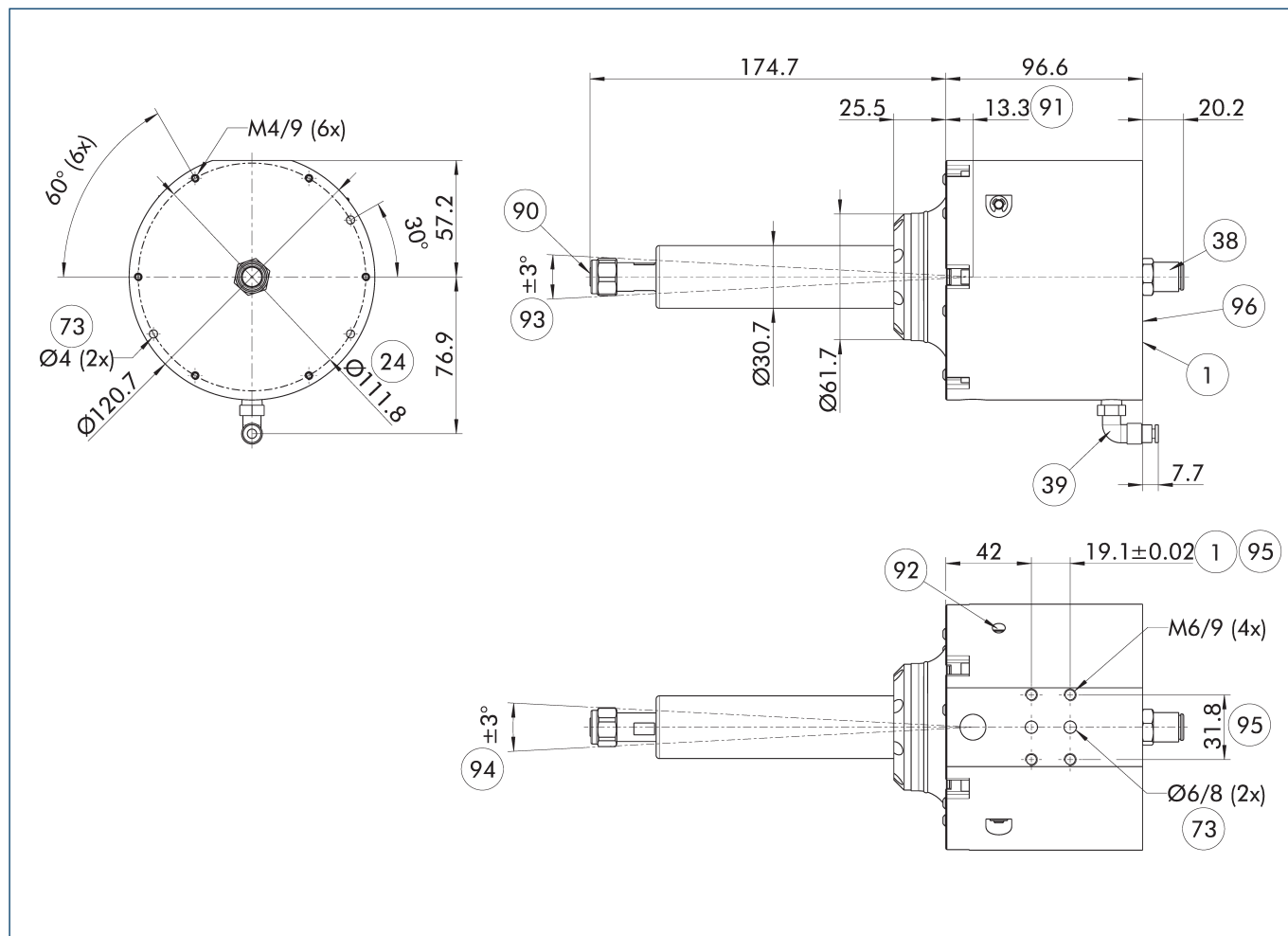
## Dimensions and maximum loads



## Technical data

Description		RCV-490
ID		1423327
Power	[W]	490
Idle speed	[1/min]	30000
Nominal speed	[1/min]	15000
Max. compensation angle X	[°]	±3
Max. compensation X	[mm]	±8.3
Max. compensation angle Y	[°]	±3
Max. compensation Y	[mm]	±8.3
Axis fixation		integrated
Recommended compensation path	[mm]	±4.1
Min./max. compensation force	[N]	7/53
Min./max. compensation pressure	[bar]	1/4.1
Operating pressure	[bar]	6.2
maximum air consumption	[l/s]	19
Tool holder		Collet ER-11 6 mm and 8 mm
Air connection spindle		10 mm
Compensation air connection		4 mm
Weight	[kg]	3.36
Min./max. ambient temperature	[°C]	5/35
Dimensions Ø D x Z	[mm]	120.7 x 271.3

## Main view



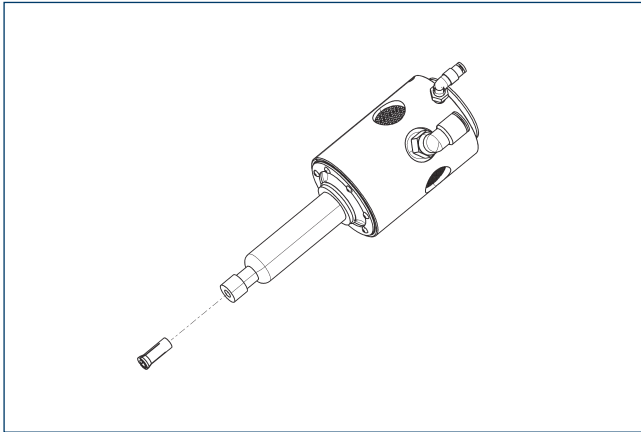
The drawing shows the unit in the basic version.

- |                                |  |
|--------------------------------|--|
| ① Robot-side connection        | ⑨2 Locking function for Y axis                 |
| ②4 Bolt circle                 | ⑨3 max. radial compensation (x axis)           |
| ③8 Air connection spindle      | ⑨4 max. radial compensation (y axis, lockable) |
| ③9 Compensation air connection | ⑨5 radial mounting option                      |
| ⑦3 Fit for centering pins      | ⑨6 axial mounting option                       |
| ⑨0 Tool holder                 |  |
| ⑨1 Pivot                       |  |

# RCV 490

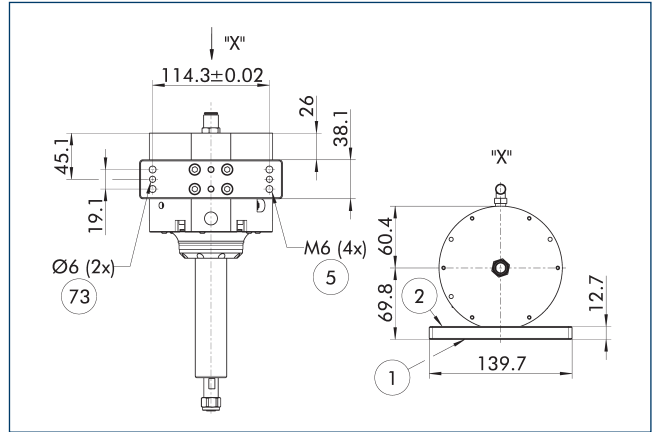
Deburring spindle

## Collets



Description	ID	Diameter
Collet Chuck Mounting		
RCV-ER-11-Collet-6mm	1453567	6 mm
RCV-ER-11-Collet-8mm	1453568	8 mm

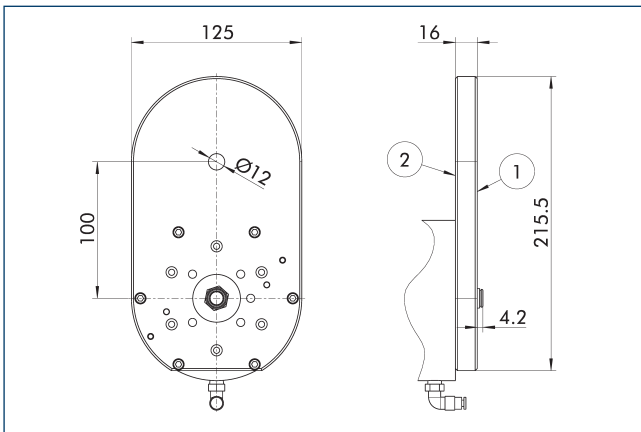
## Adapter plates, radial



- ① Robot-side connection
- ② Tool-side connection
- ⑤ Through hole for connection with screws
- ⑦③ Fit for centering pins

Description	ID
Adapter plate	
A-AOV/CRT/RCV-250/490/RCE-radial	1420116

## Adapter plates axial

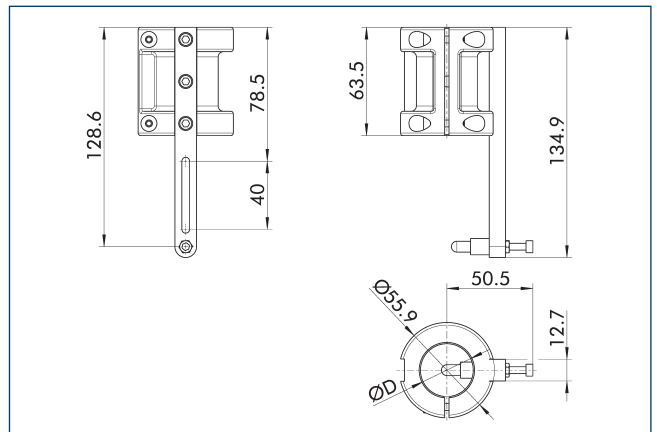


- ① Robot-side connection
- ② Tool-side connection

Tool-side blank adapter plate to be machined by the customer.

Description	ID
Adapter plate	
A-RCV-250/490-Axial-Offset-Blank	1453502

## Profile follower



Profile follower for adjustably limiting the depth of cut along a surface

Description	ID	Diameter D [mm]
Profile follower		
RC-PF3-30,7mm	1453524	30.7







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