



Superior Clamping and Gripping



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.

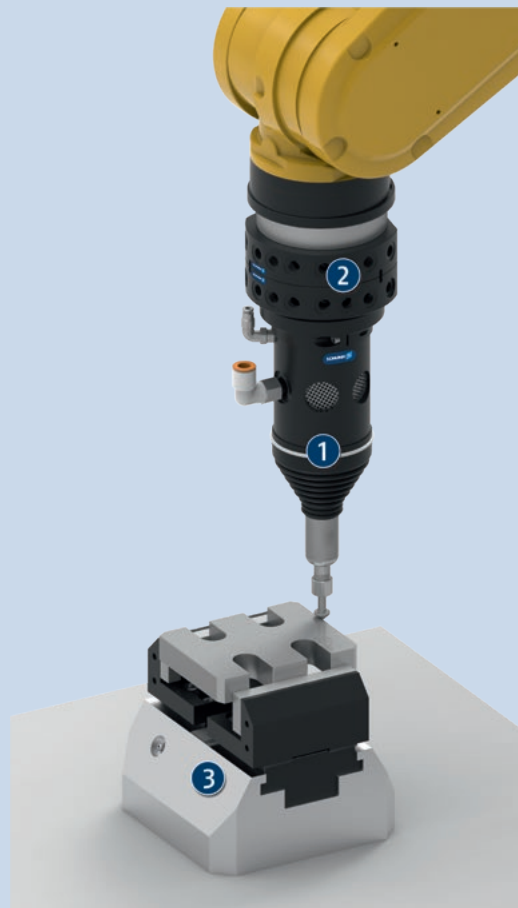
Warranty: 24 months

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](https://www.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.

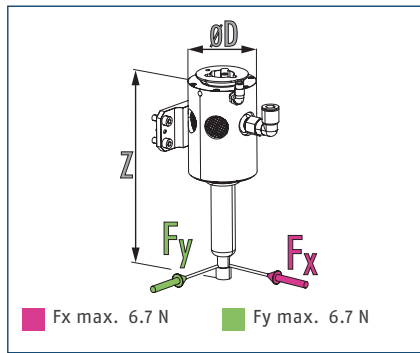
Axis locking function: The RS version enables compensation in one direction. This function is integrated in sizes 900 and 1040.

FDB 150

Deburring spindle



Dimensions and maximum loads

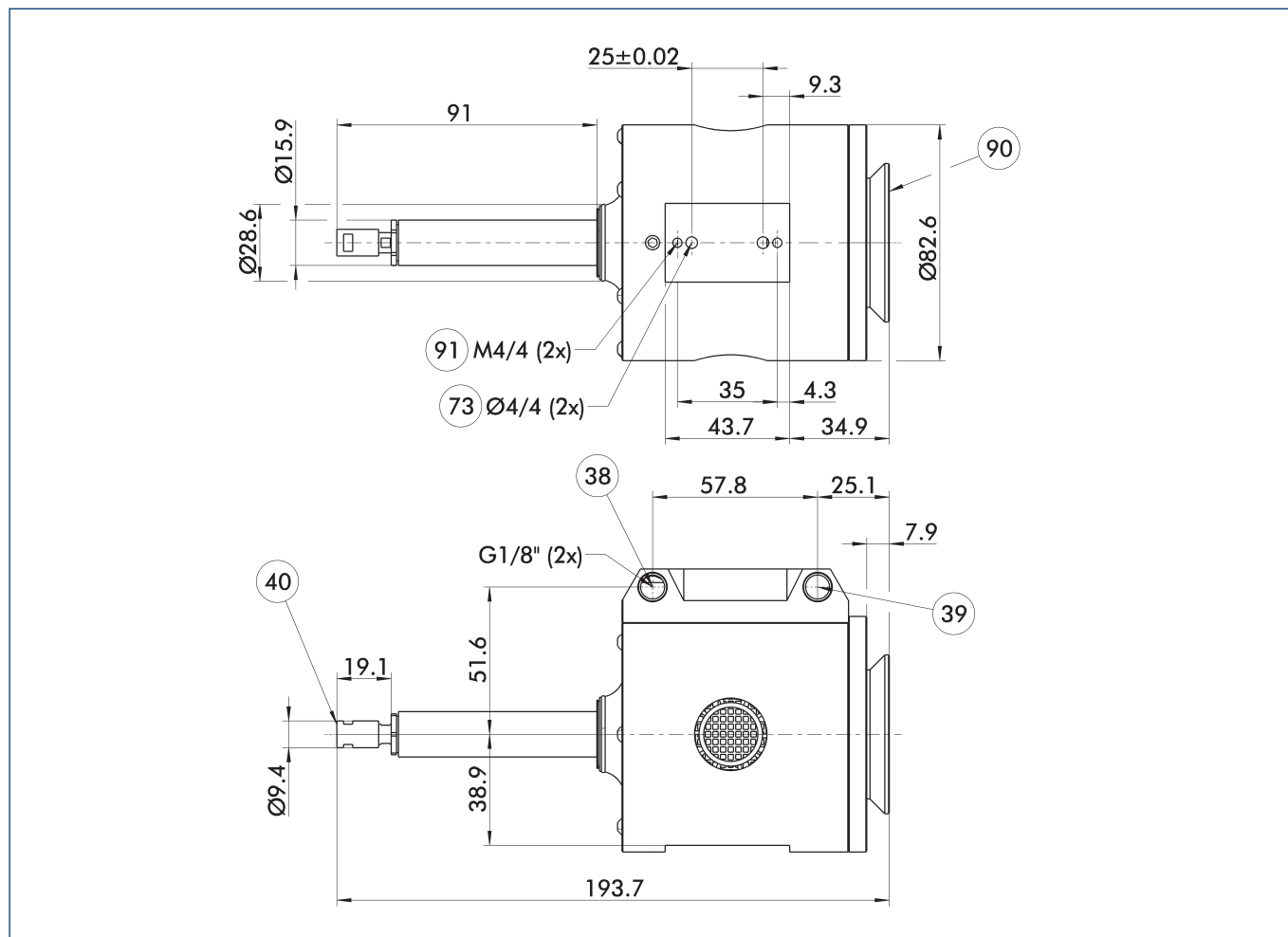


① The indicated forces show the maximum payload.

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

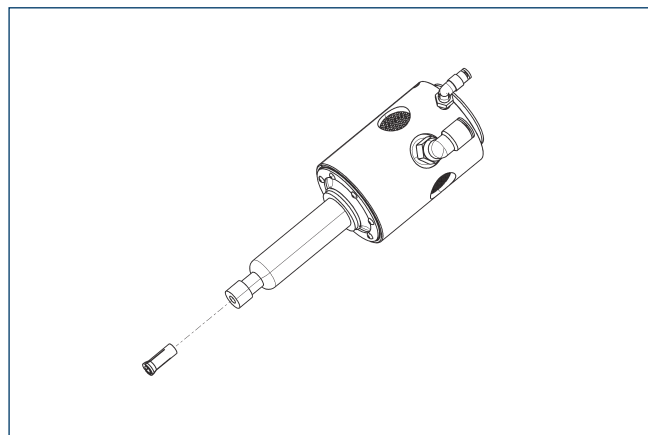
Main view



The main view shows the unit in its basic version.

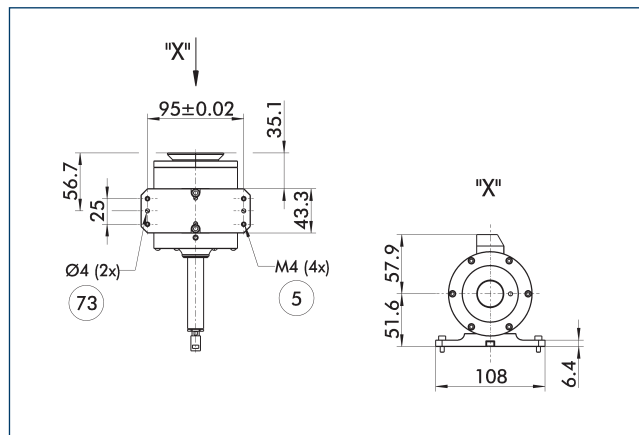
- ③⑧ Air connection spindle
- ③⑨ Compensation air connection
- ③④ Collet
- ③⑦ Fit for centering pins
- ③⑩ Axial connection
- ③① Radial connection

Collets



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

Adapter plates, radial



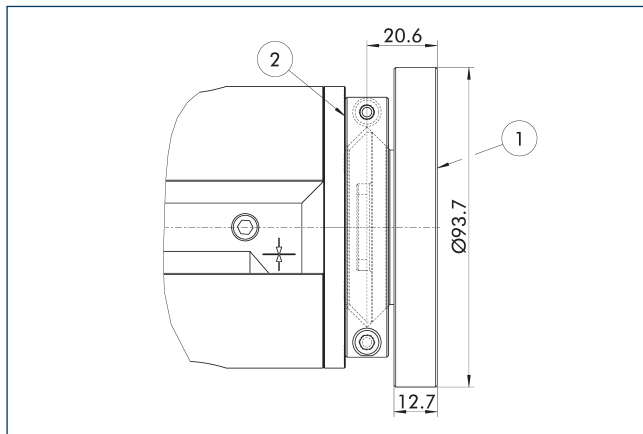
- ③⑤ Through hole for connection with screws
- ③⑦ Fit for centering pins

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

FDB 150

Deburring spindle

Adapter plates axial



① Robot-side connection

② Tool-side connection

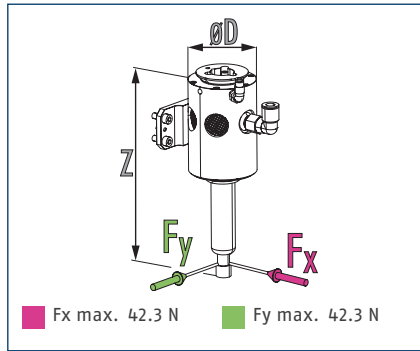
Description	ID	Height [mm]
Adapter plate		
A-CDB/FDB-1XX/3XX-Blank	0322210	20.6
A-CDB/FDB-1XX/3XX-ISO-A050	1411542	20.6
A-CDB/FDB-1XX/3XX-ISO-A31.5	1411562	20.6

FDB 300

Deburring spindle



Dimensions and maximum loads

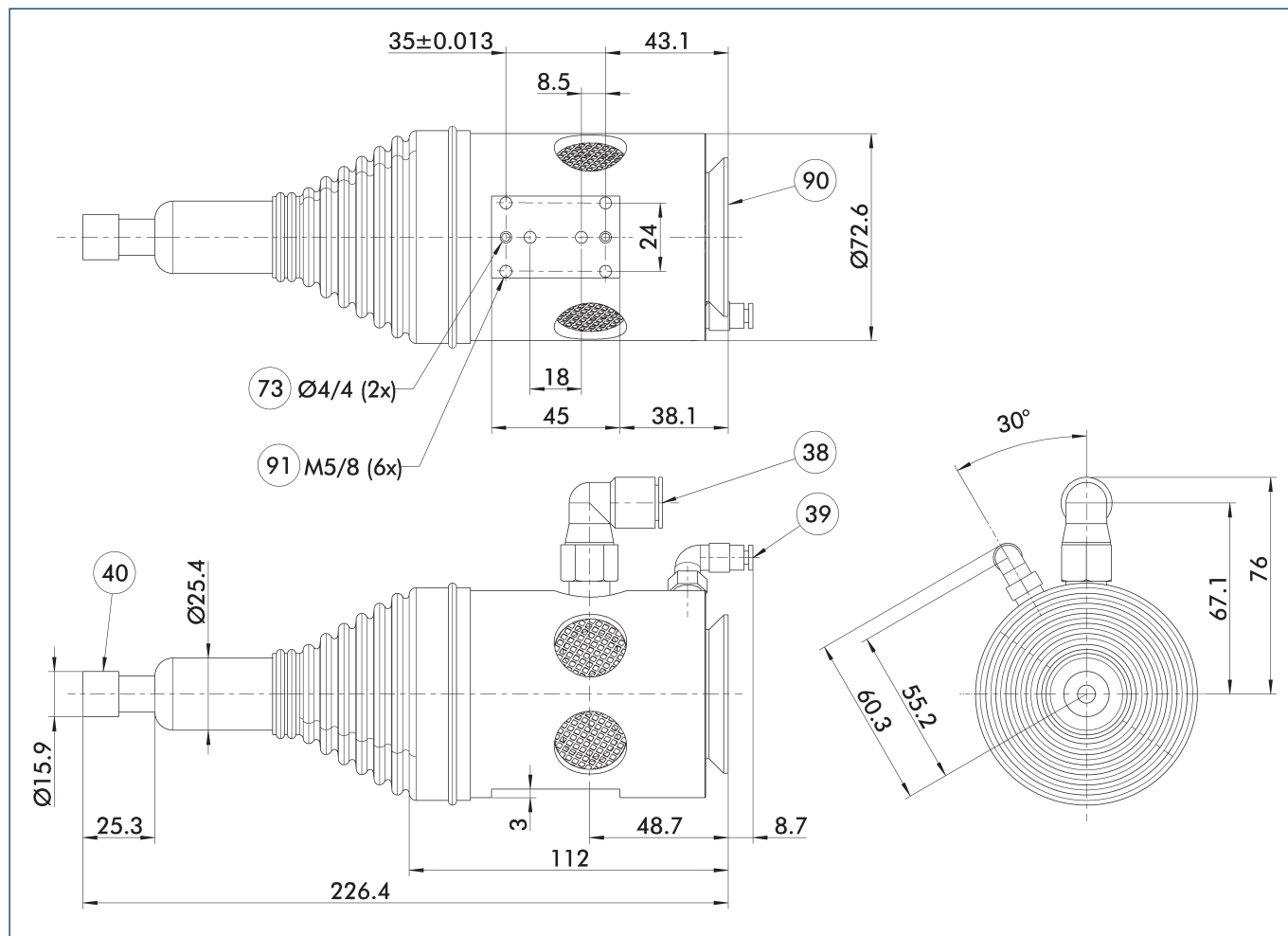


① The indicated forces show the maximum payload.

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



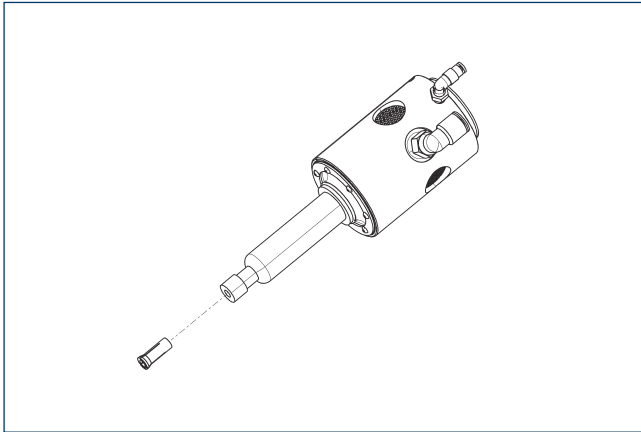
The main view shows the unit in its basic version.

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

FDB 300

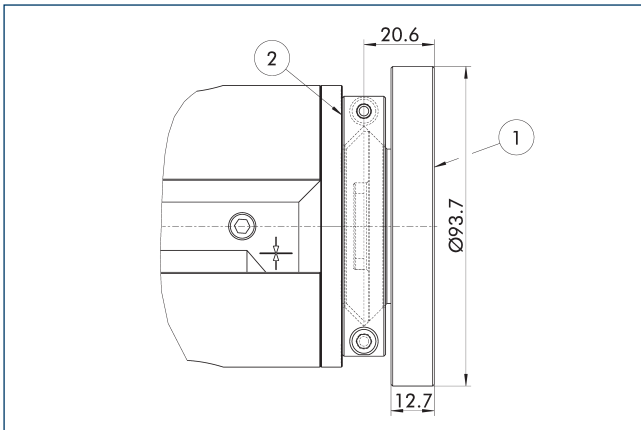
Deburring spindle

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	

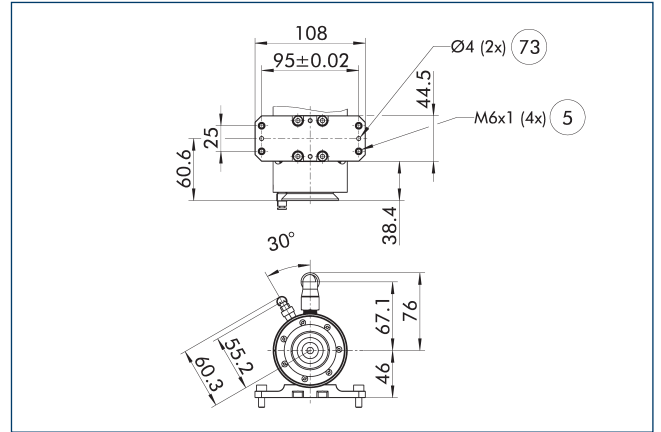
Adapter plates axial



- 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

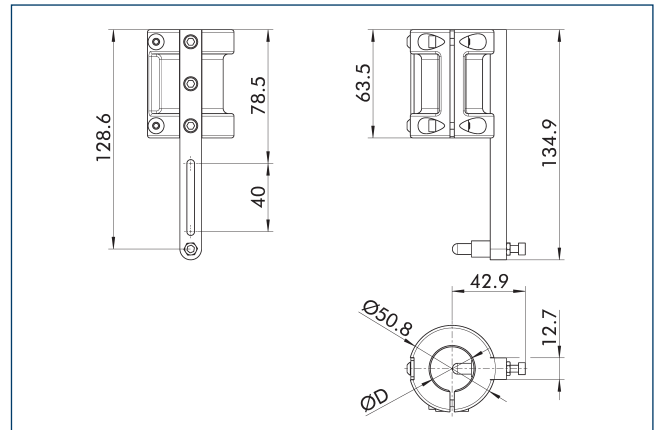


- ⑤ Through hole for connection with screws
- ⑦3 Fit for centering pins

Adapter plate for connecting further Schunk components or customized attachments.

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

Profile follower



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

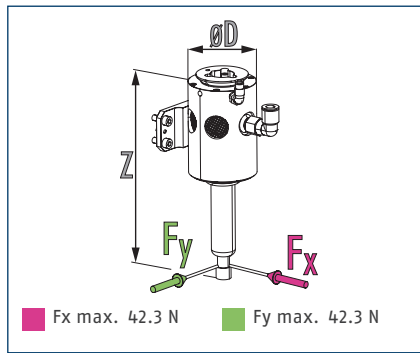
Description	ID	Diameter D [mm]
Profile follower		
RC-PF1-25,4mm	1453506	25.4

FDB 340

Deburring spindle



Dimensions and maximum loads

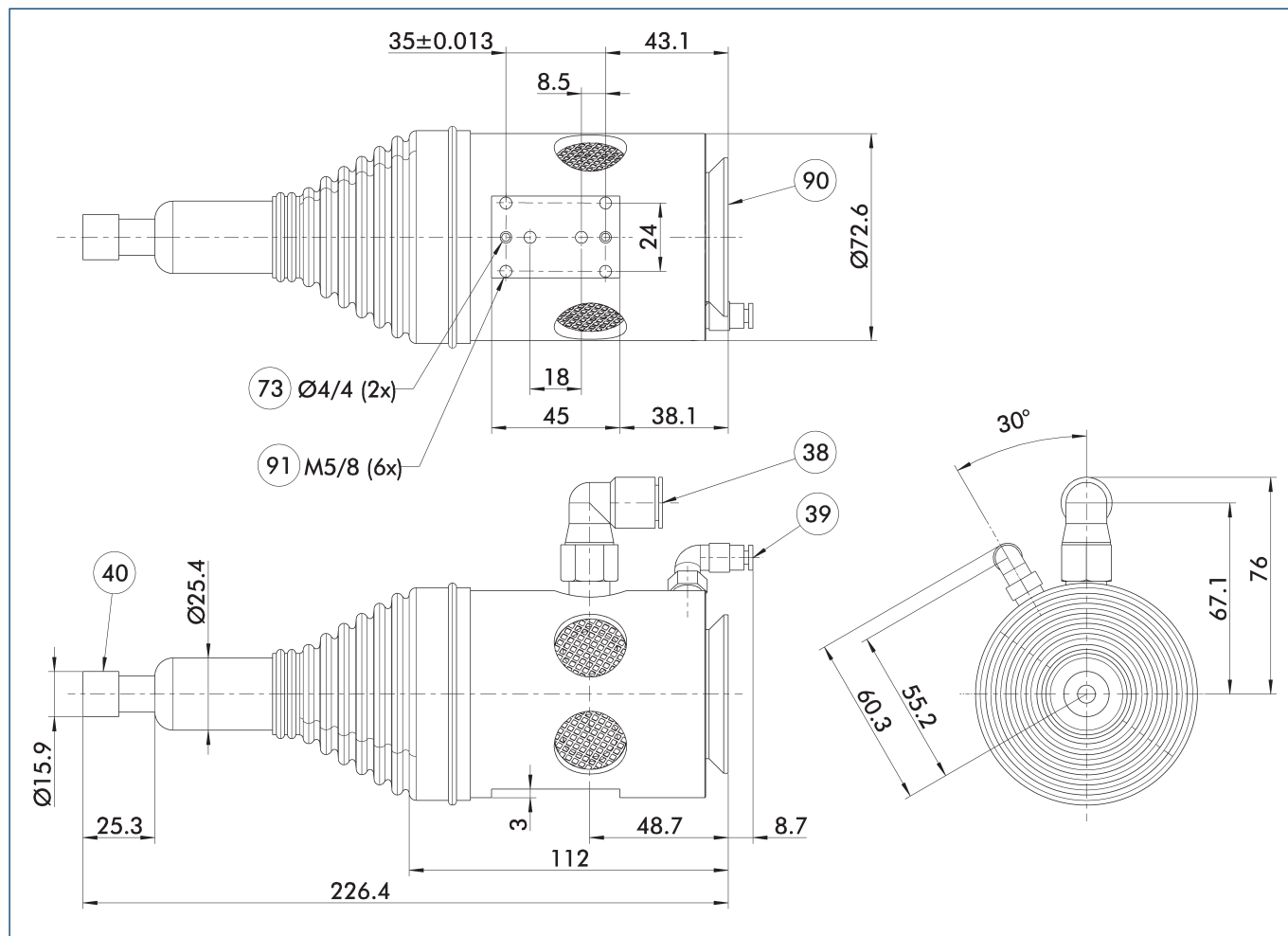


① The indicated forces show the maximum payload.

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



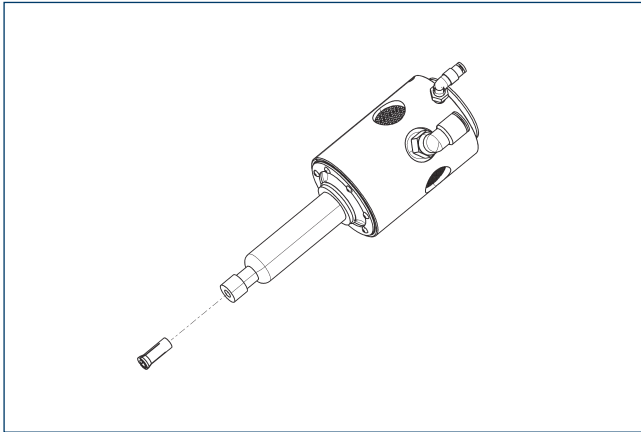
The main view shows the unit in its basic version.

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

FDB 340

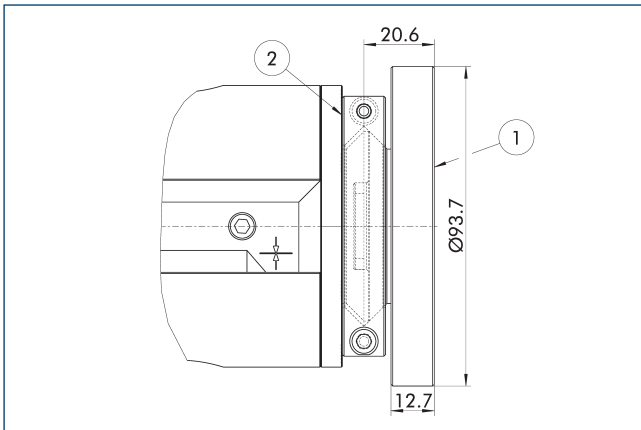
Deburring spindle

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	

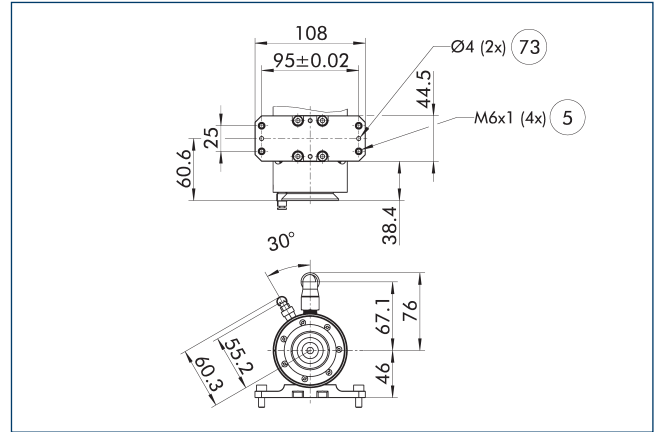
Adapter plates axial



- 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

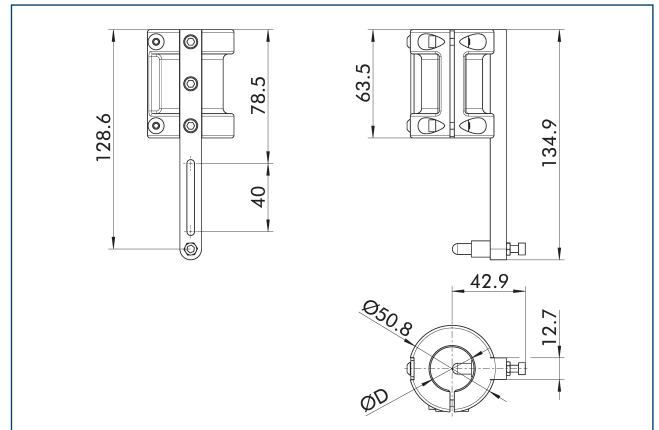


- ⑤ Through hole for connection ⑦③ Fit for centering pins with screws

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

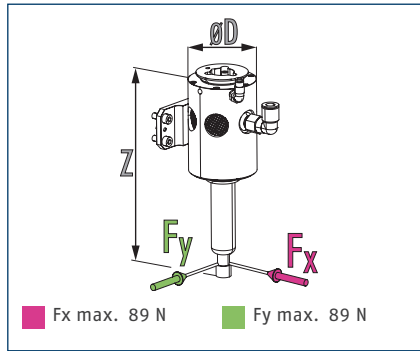
Description	ID	Diameter D [mm]
Profile follower		
RC-PF1-25,4mm	1453506	25.4

FDB 900

Deburring spindle



Dimensions and maximum loads

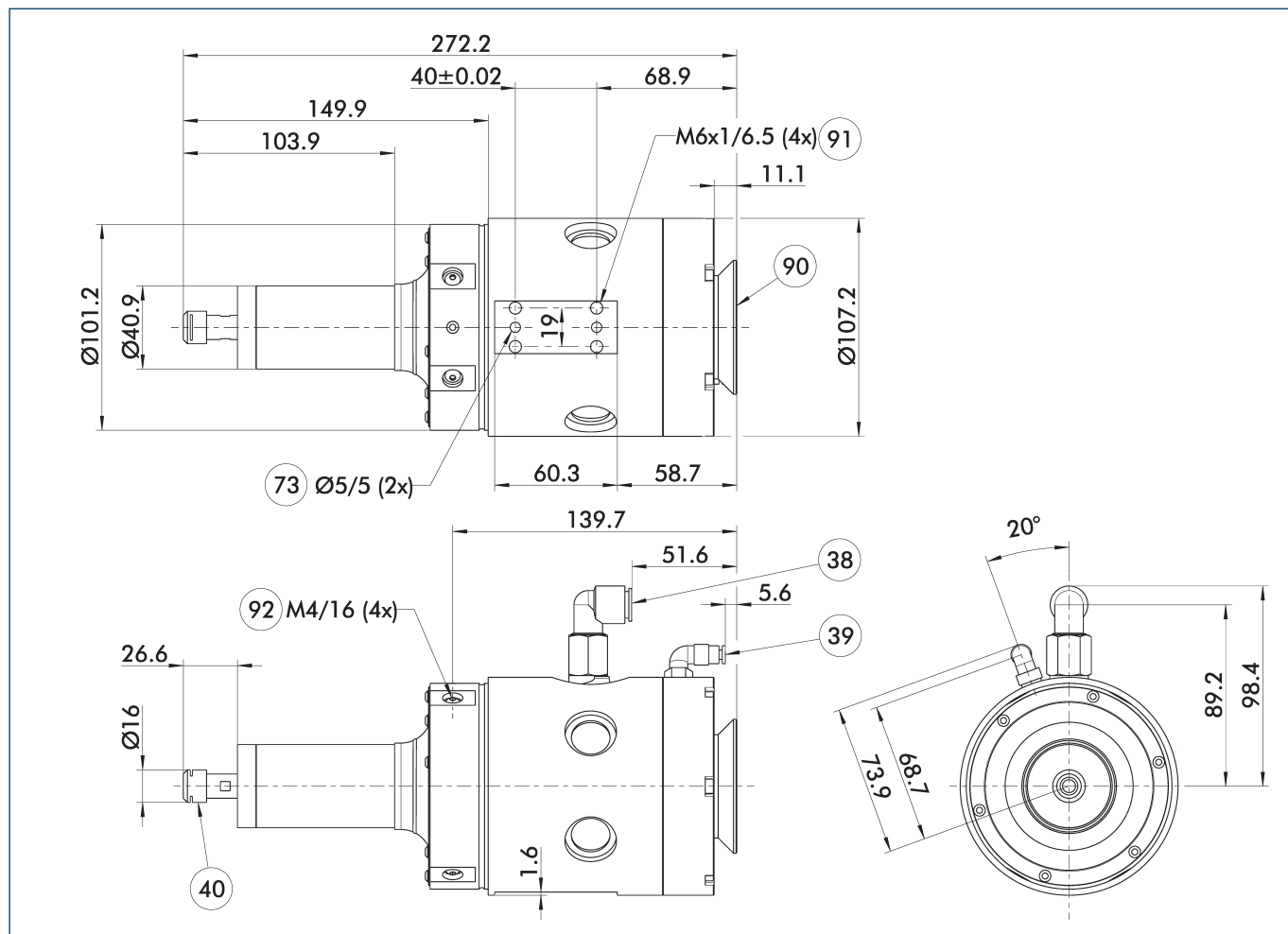


① The indicated forces show the maximum payload.

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



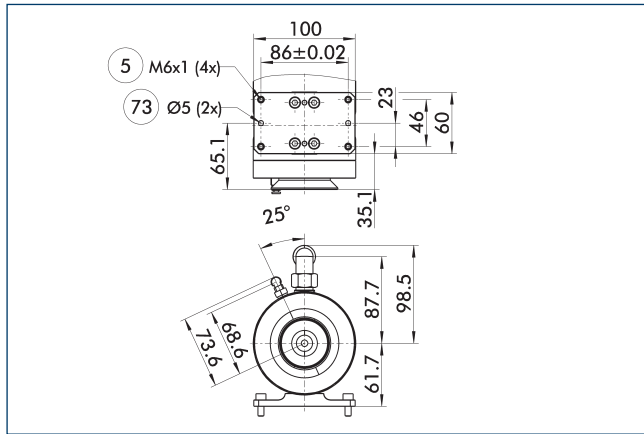
The main view shows the unit in its basic version.

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

FDB 900

Deburring spindle

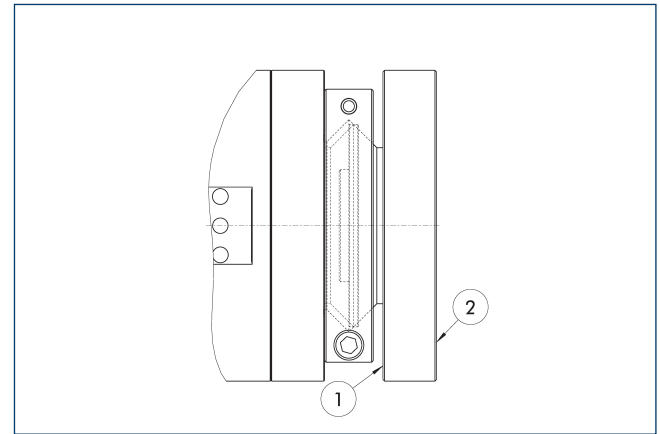
Adapter plates, radial



- 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

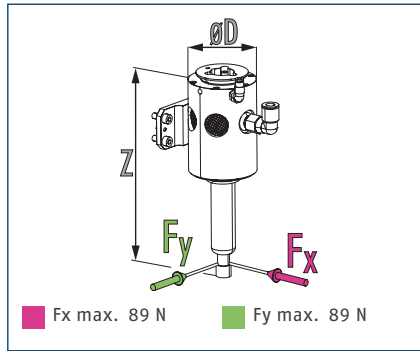
Description	ID
Adapter plate	
A-FDB-660-1040/RCE-710/AOV-Axial	0322211

FDB 1040

Deburring spindle



Dimensions and maximum loads

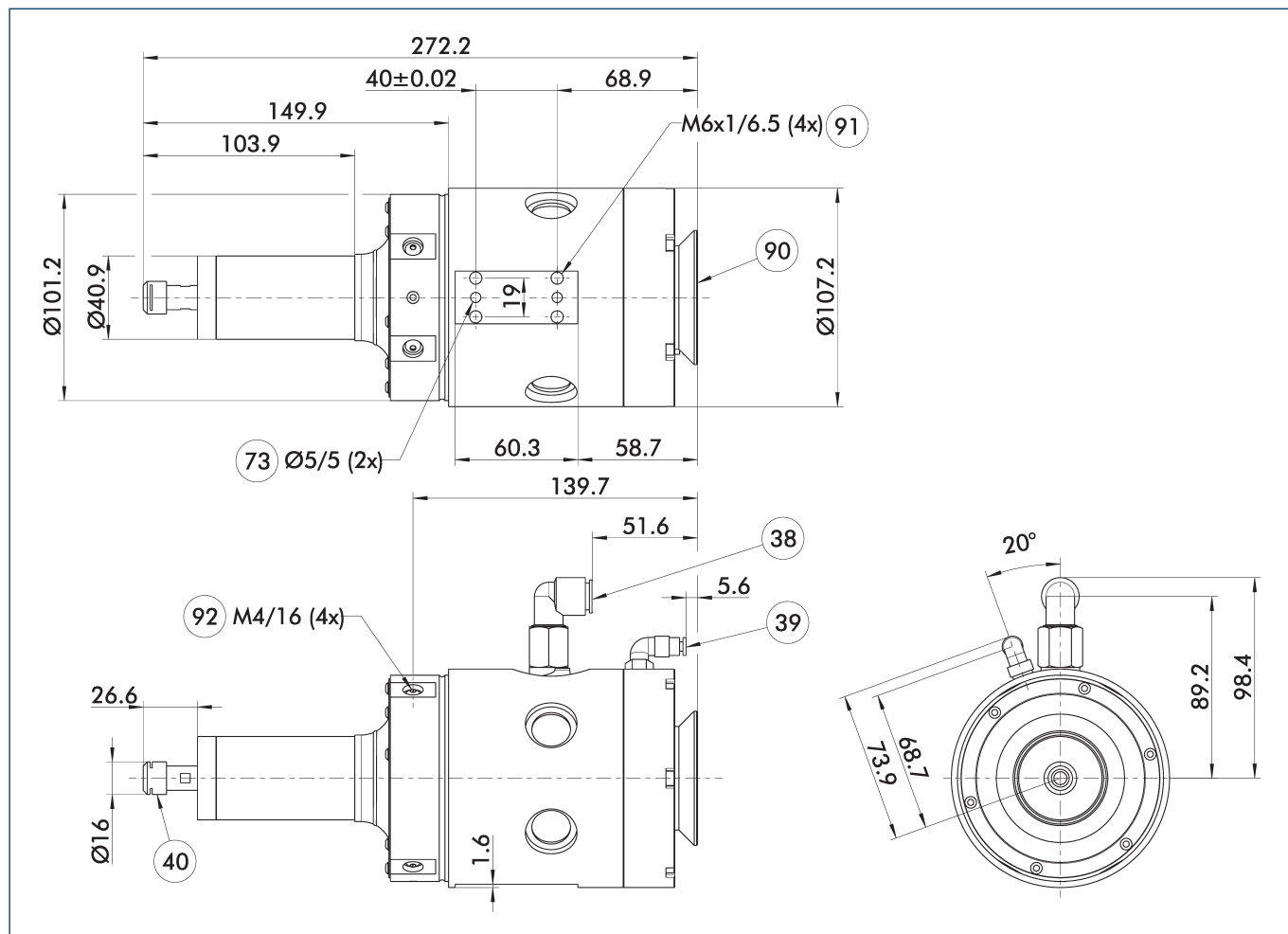


① The indicated forces show the maximum payload.

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



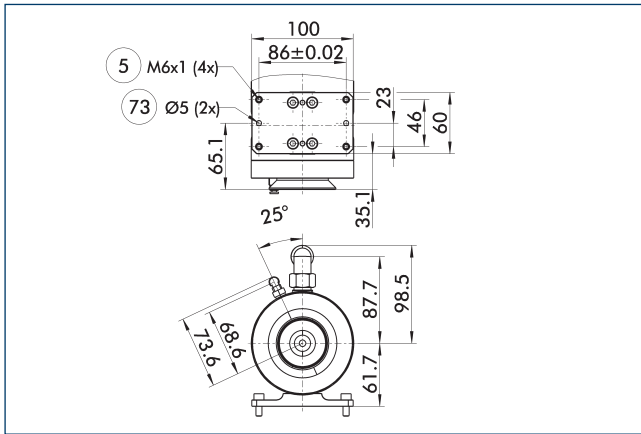
The main view shows the unit in its basic version.

- | | |
|--------------------------------|---|
| 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

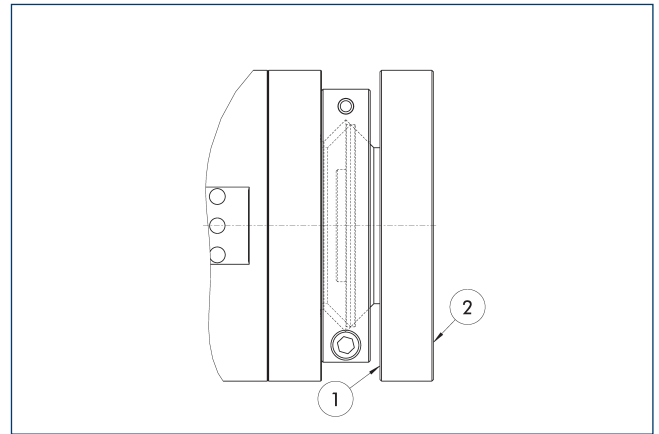
Adapter plates, radial



- 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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