Superior Clamping and Gripping

Product Information

Deburring spindle FDB

Compliant. Robust. Precise.

FDB deburring spindle

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

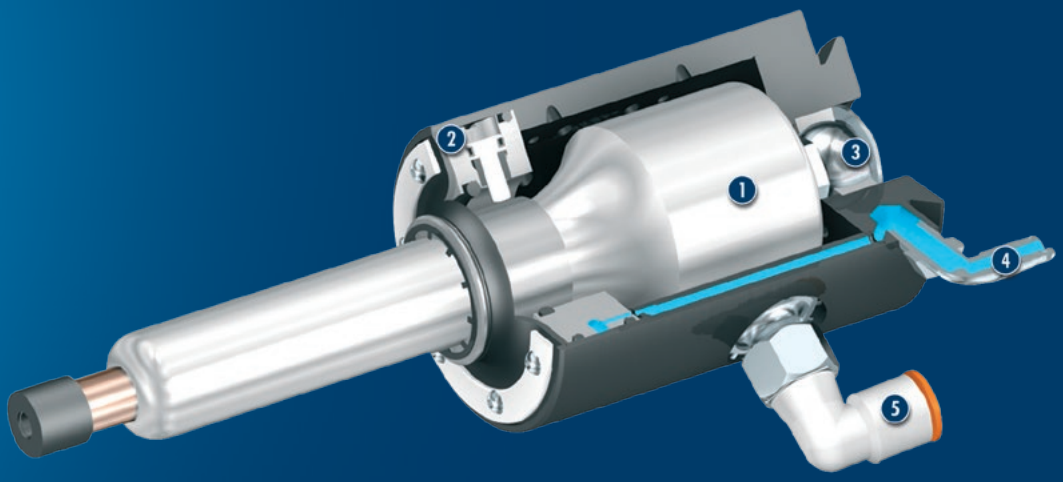
Flexible use on the robot arm or as a stationary unit

Sizes	Idle speed max.	Power
Quantity: 6	25000 .. 65000 1/min	150 .. 1040 W

Functional description

The drive of the unit is carried out via a pneumatic spindle with torque of up to 65,000 rpm per minute – depending on the module size. The spindle is swivel mounted for being able to maintain the tolerances of the whole machining contour.

The maximum length at the milling cutter tip amounts to ±9 mm. The force (rigidity) needed to move (oscillate) the spindle is controlled by a second air connection. Depending on the pressure, the force at the milling cutter's cross section amount to 3.1 N to 89 N.



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

CAD data, operating manuals and other current product documents can be found online.

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.

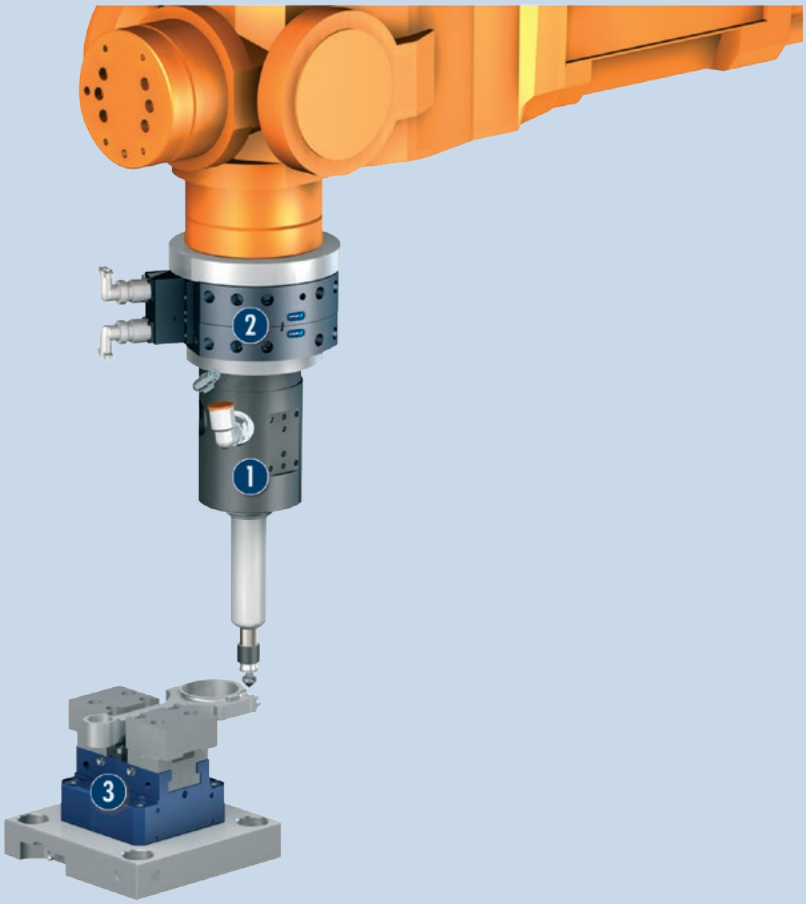
Warranty: 24 months

Ambient conditions: Please note that the unit is notsuitable 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. FDB flexible deburring spindle
2. SWS quick-change system
3. Clamping force block with workpiece



SCHUNK offers more ...

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

Collets

Quick-change Systems

manual gripper change systems

ⓘ Additional information regarding the products can be found on the following product pages or at www.schunk.com. Please contact us for further information: SCHUNK technical hotline +49-7133-103-2696

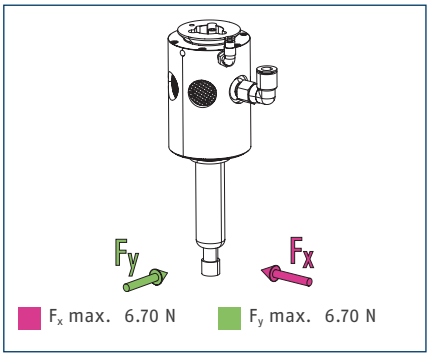
Options and special information

Universally: The FDB is not restricted to use on a robot arm, due to its flexible assembly possibilities. It can also be used as a fixed tool with a moving workpiece.

FDB 150

Deburring spindle

Forces and moments

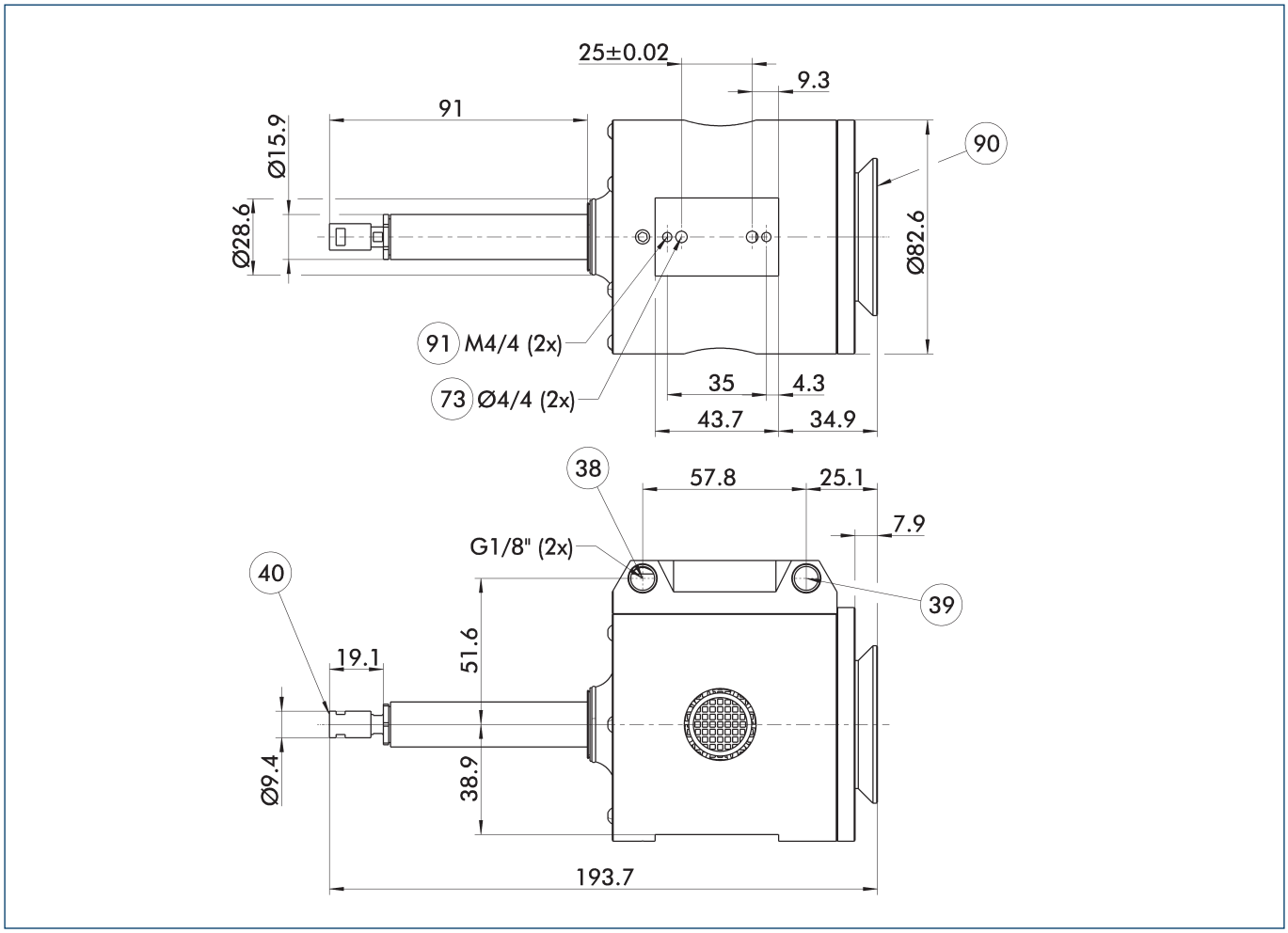


ⓘ The indicated forces show the maximum payload.

Technical data

Description		FDB-150	FDB-150-RS
ID		0322200	0322205
Power	[W]	150	150
max. compensation stroke	[mm]	± 5.1	± 5.1
max. compensation X	[mm]	± 5.1	± 5.1
max. compensation Y	[mm]	± 5.1	0
Recommended compensation path	[mm]	± 2.5	± 5.1
min. compliance force	[N]	3.1	3.1
max. compliance force	[N]	6.7	6.7
min. compliance pressure	[bar]	1.4	1.4
max. compliance pressure	[bar]	4.1	4.1
Idle speed	[1/min]	65000	65000
Idle air consumption	[l/s]	1.4	1.4
Stalled air consumption	[l/s]	3.8	3.8
Collet diameter	[mm]	3	3
Weight	[kg]	1.11	1.11
min./max. ambient temperature	[°C]	5/60	5/60

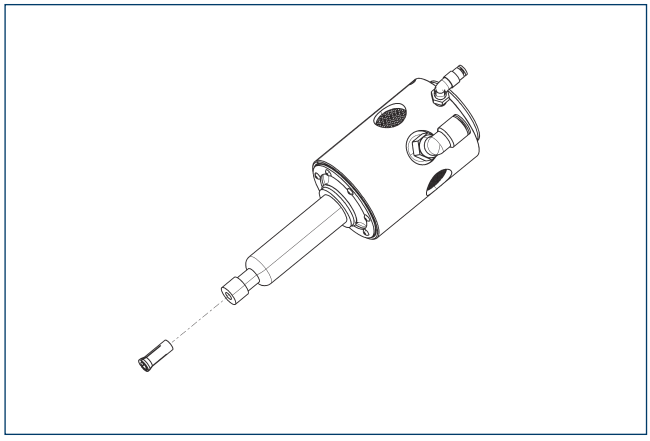
Main view



The main view shows the unit in its basic version.

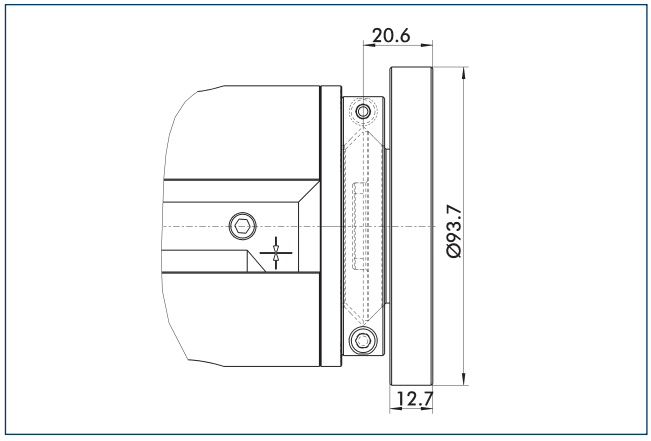
38 Air connection spindle
39 Compensation air connection
40 Collet chuck
73 Fit for centering pins
90 Axial connection
91 Radial connection

Collets



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

Adapter plates, axial

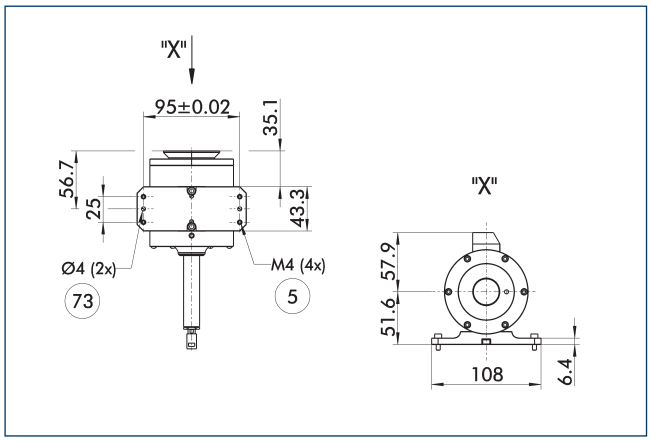


Description	ID	Height
		[mm]
Adapter plate		
A-FDB-axial-151-340	0322210	20.6

FDB 150

Deburring spindle

Adapter plates, radial



(5) Through hole for connection with screws

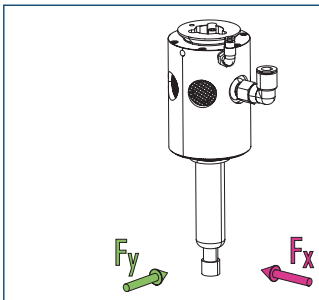
(73) Fit for centering pins

Description	ID	
Adapter plate		
A-FDB-radial-151	0322212	

FDB 300

Deburring spindle

Forces and moments

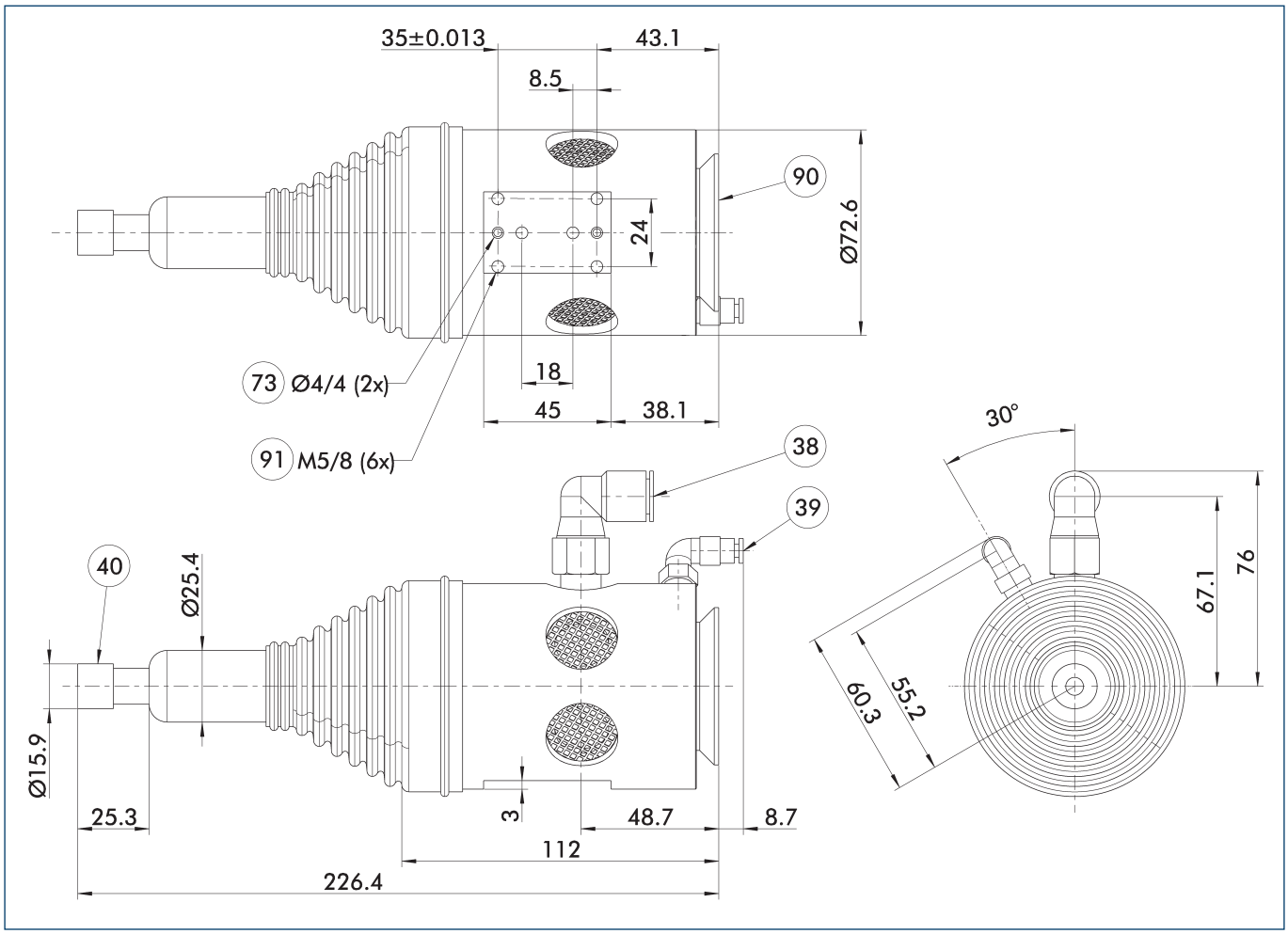


ⓘ The indicated forces show the maximum payload.

Technical data

Description		FDB-300
ID		0322202
Power	[W]	300
max. compensation stroke	[mm]	± 7.6
max. compensation X	[mm]	± 7.6
max. compensation Y	[mm]	± 7.6
Recommended compensation path	[mm]	± 3.8
min. compliance force	[N]	6.7
max. compliance force	[N]	42.3
min. compliance pressure	[bar]	0.3
max. compliance pressure	[bar]	4.1
Idle speed	[1/min]	30000
Idle air consumption	[l/s]	2.8
Stalled air consumption	[l/s]	10
Collet diameter	[mm]	6
Weight	[kg]	1.15
min./max. ambient temperature	[°C]	5/60

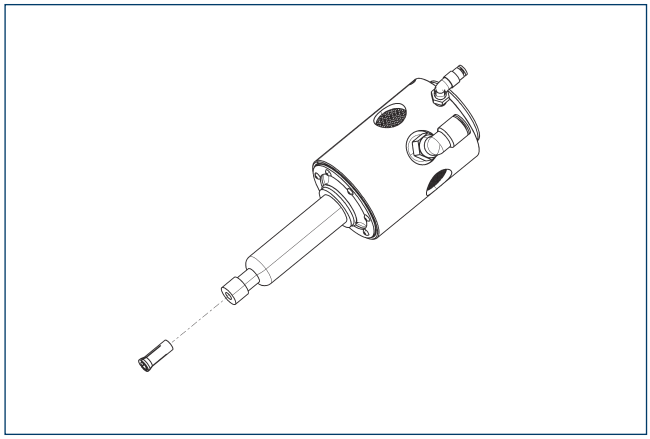
Main view



The main view shows the unit in its basic version.

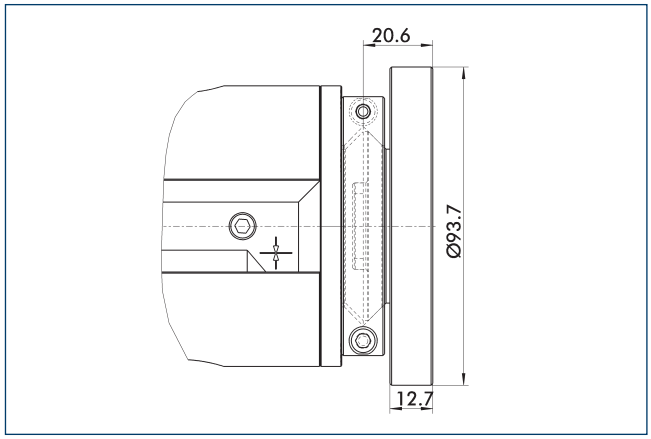
(38) Air connection spindle
(39) Compensation air connection
(40) Collet chuck
(73) Fit for centering pins
(90) Axial connection
(91) Radial connection

Collets



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

Adapter plates, axial

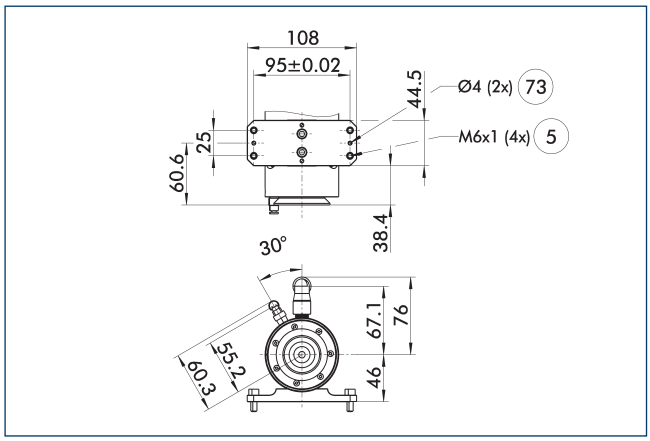


Description	ID	Height
		[mm]
Adapter plate		
A-FDB-axial-151-340	0322210	20.6

FDB 300

Deburring spindle

Adapter plates, radial



(5) Through hole for connection with screws

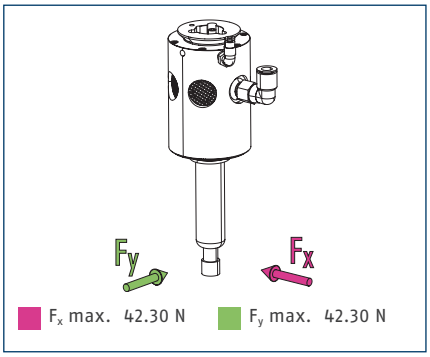
(73) Fit for centering pins

Description	ID	
Adapter plate		
A-FDB-radial-300-340	0322213	

FDB 340

Deburring spindle

Forces and moments

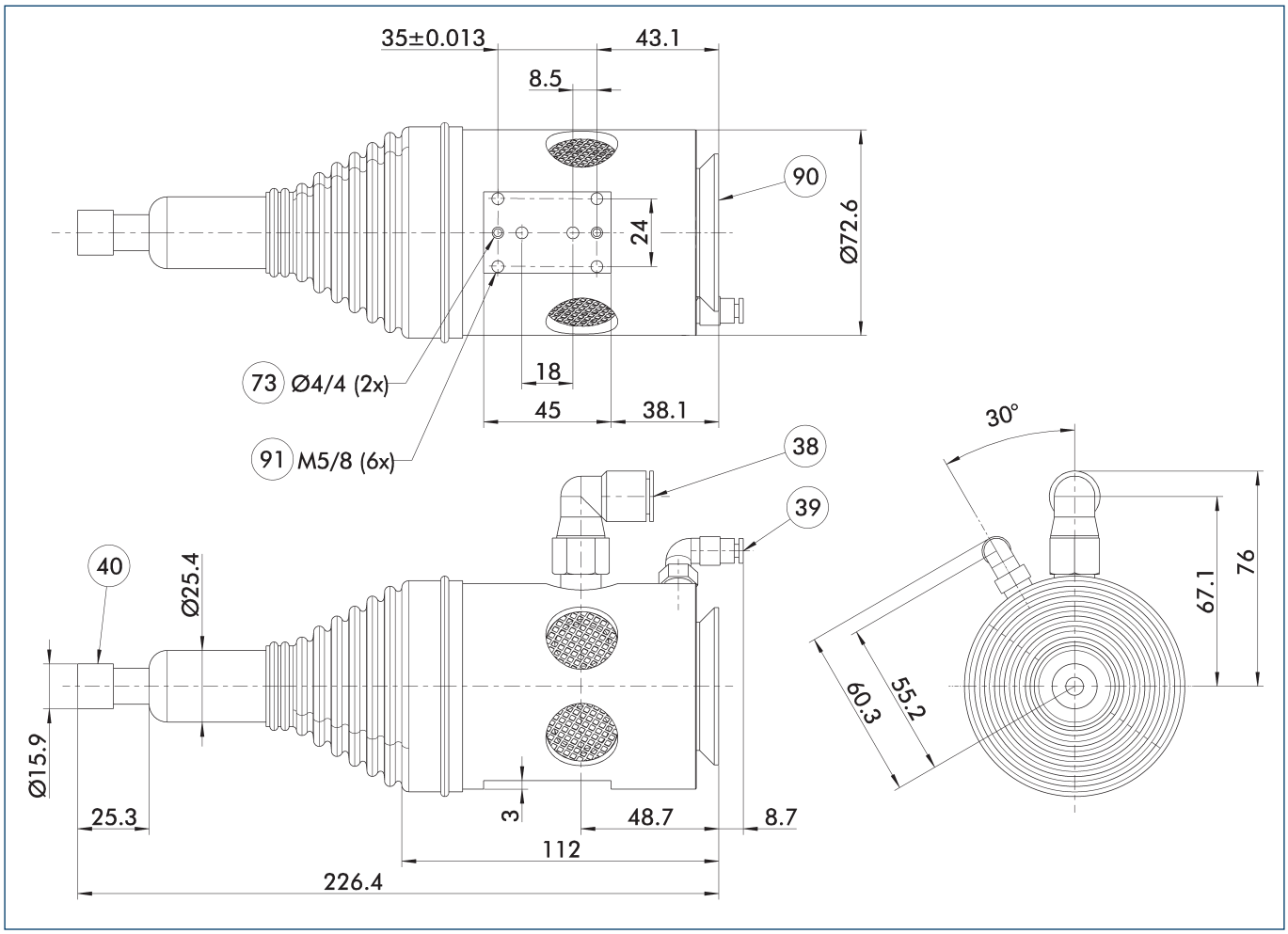


ⓘ The indicated forces show the maximum payload.

Technical data

Description		FDB-340	FDB-340-RS
ID		0322201	0322208
Power	[W]	340	340
max. compensation stroke	[mm]	± 7.6	± 7.6
max. compensation X	[mm]	± 7.6	± 5.6
max. compensation Y	[mm]	± 7.6	0
Recommended compensation path	[mm]	± 3.8	± 3.8
min. compliance force	[N]	12	8.9
max. compliance force	[N]	42	47
min. compliance pressure	[bar]	0.3	0.3
max. compliance pressure	[bar]	4.1	4.1
Idle speed	[1/min]	40000	40000
Idle air consumption	[l/s]	2.8	2.8
Stalled air consumption	[l/s]	10	10
Collet diameter	[mm]	6	6
Weight	[kg]	1.15	1.13
min./max. ambient temperature	[°C]	5/60	5/60

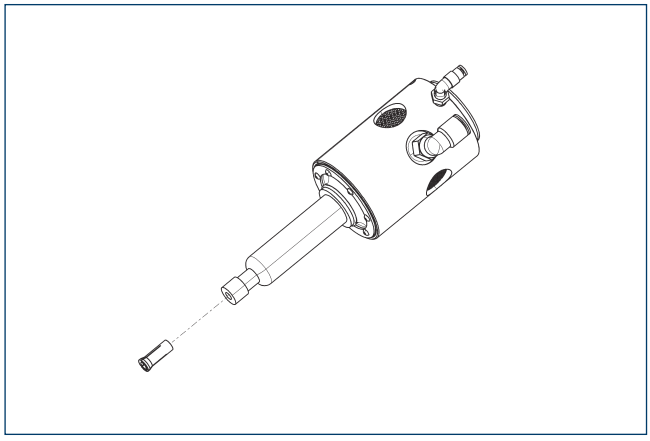
Main view



The main view shows the unit in its basic version.

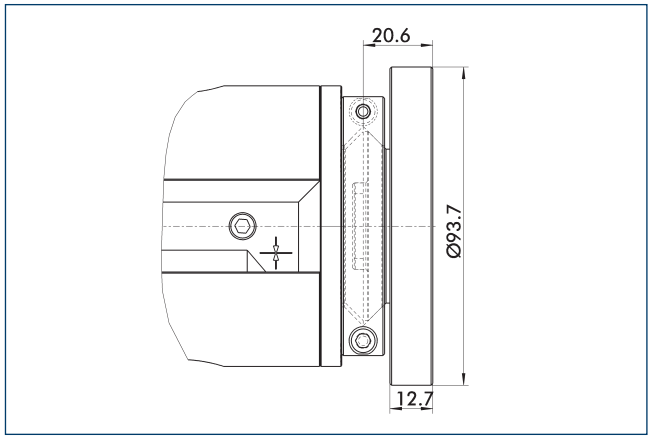
38 Air connection spindle
39 Compensation air connection
40 Collet chuck
73 Fit for centering pins
90 Axial connection
91 Radial connection

Collets



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

Adapter plates, axial

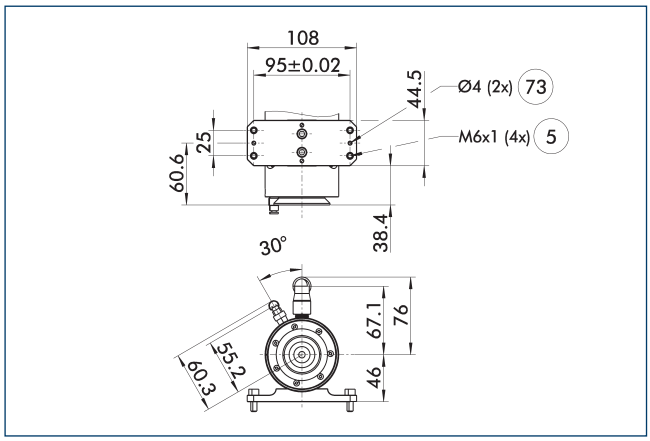


Description	ID	Height
		[mm]
Adapter plate		
A-FDB-axial-151-340	0322210	20.6

FDB 340

Deburring spindle

Adapter plates, radial



(5) Through hole for connection with screws

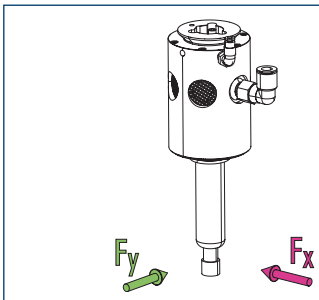
(73) Fit for centering pins

Description	ID	
Adapter plate		
A-FDB-radial-300-340	0322213	

FDB 660

Deburring spindle

Forces and moments

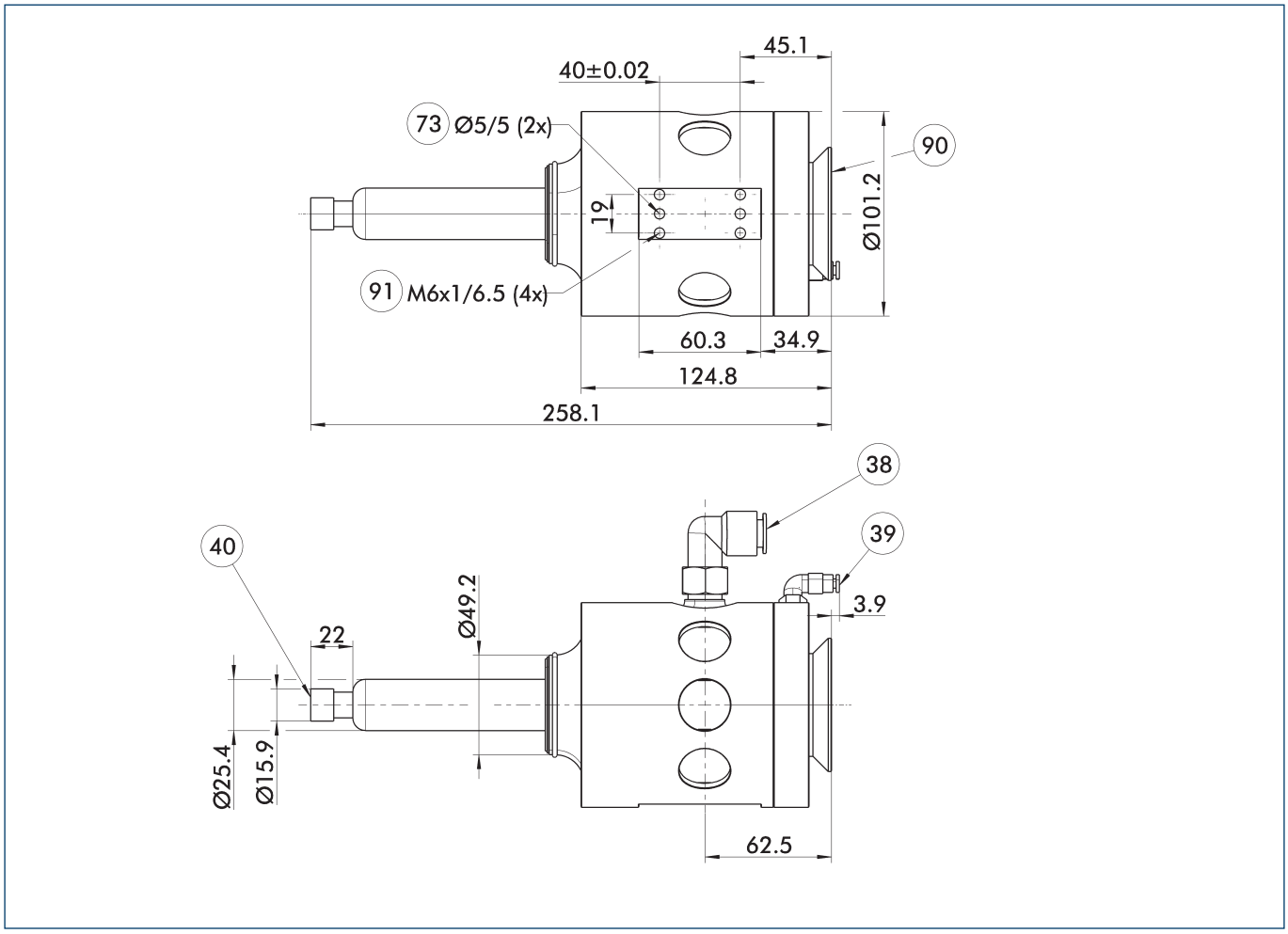


ⓘ The indicated forces show the maximum payload.

Technical data

Description		FDB-660
ID		0322203
Power	[W]	660
max. compensation stroke	[mm]	± 8.9
max. compensation X	[mm]	± 8.9
max. compensation Y	[mm]	± 8.9
Recommended compensation path	[mm]	± 4.4
min. compliance force	[N]	12
max. compliance force	[N]	42
min. compliance pressure	[bar]	0.3
max. compliance pressure	[bar]	4.1
Idle speed	[1/min]	40000
Idle air consumption	[l/s]	5.4
Stalled air consumption	[l/s]	18
Collet chuck		ER-11
Collet diameter	[mm]	6
Weight	[kg]	2.22
min./max. ambient temperature	[°C]	5/60

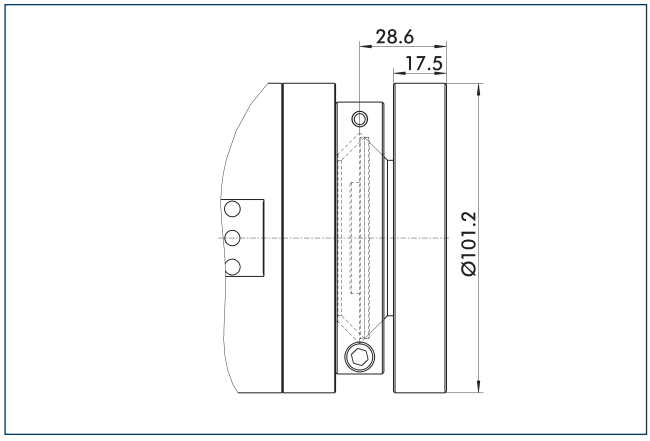
Main view



The main view shows the unit in its basic version.

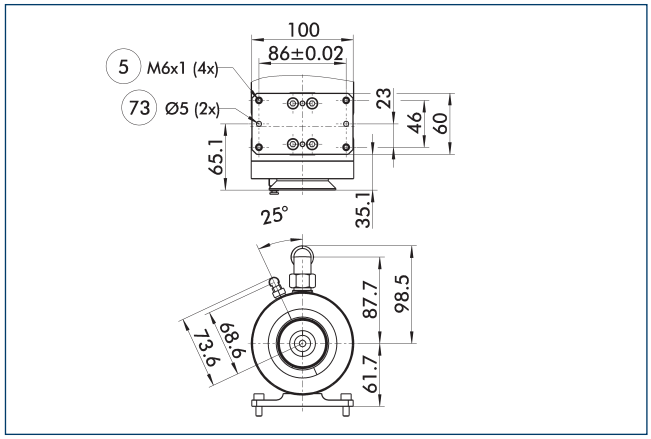
38 Air connection spindle
39 Compensation air connection
40 Collet chuck
73 Fit for centering pins
90 Axial connection
91 Radial connection

Adapter plates, axial



Description	ID	Height
		[mm]
Adapter plate		
A-FDB-axial-660	0322211	28.6

Adapter plates, radial



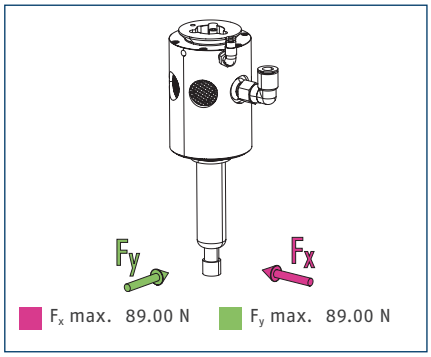
5 Through hole for connection with screws
73 Fit for centering pins

Description	ID	
Adapter plate		
A-FDB-radial-660	0322214	

FDB 900

Deburring spindle

Forces and moments

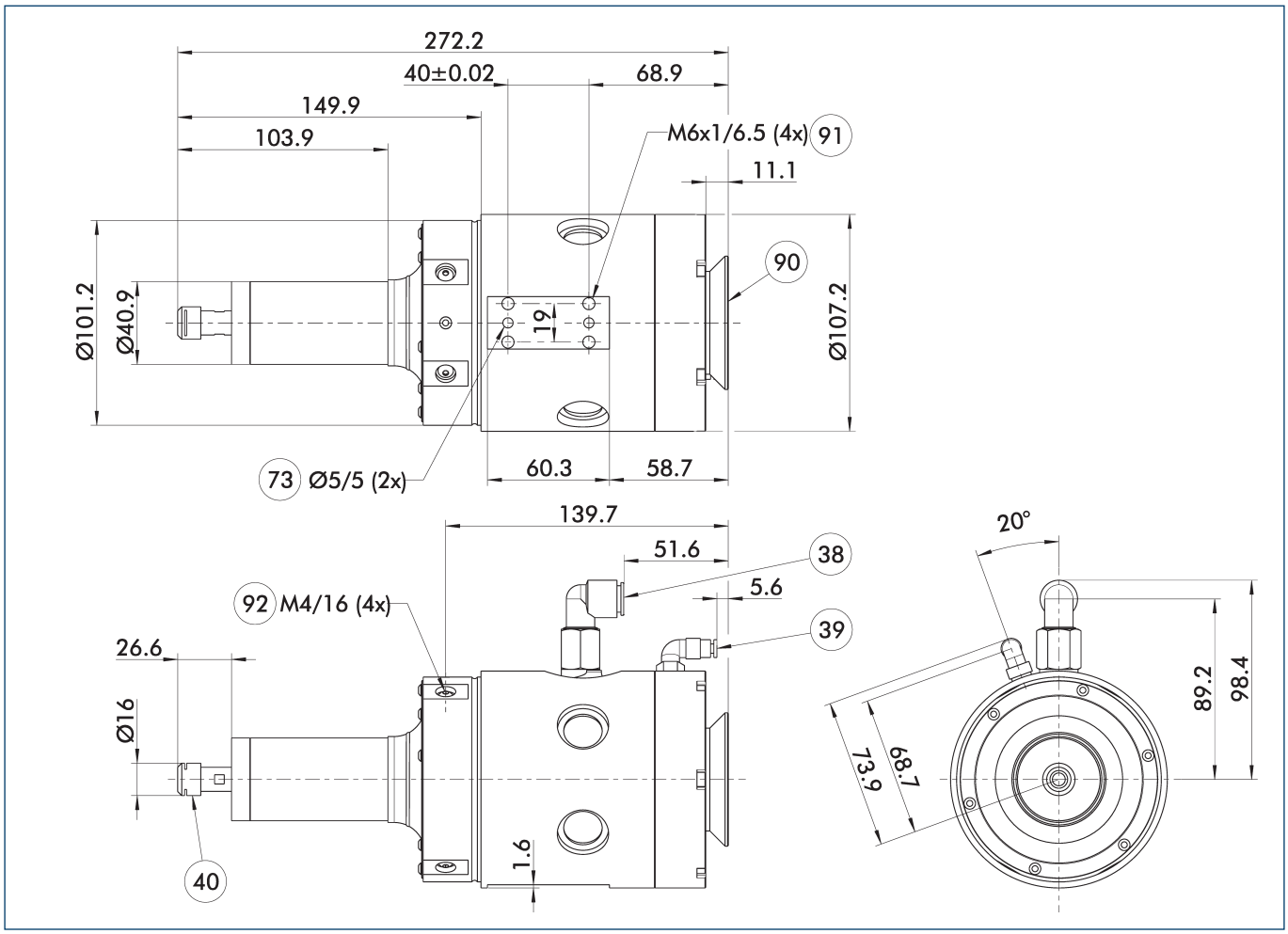


ⓘ The indicated forces show the maximum payload.

Technical data

Description		FDB-900
ID		0322240
Power	[W]	900
max. compensation stroke	[mm]	± 9.1
max. compensation X	[mm]	± 9.1
max. compensation Y	[mm]	± 9.1
Recommended compensation path	[mm]	± 4.8
min. compliance force	[N]	9.8
max. compliance force	[N]	89
min. compliance pressure	[bar]	1
max. compliance pressure	[bar]	4.1
Idle speed	[1/min]	25000
Idle air consumption	[l/s]	8.5
Stalled air consumption	[l/s]	19
Collet chuck		ER-11
Collet diameter	[mm]	6
Weight	[kg]	3.4
min./max. ambient temperature	[°C]	5/60

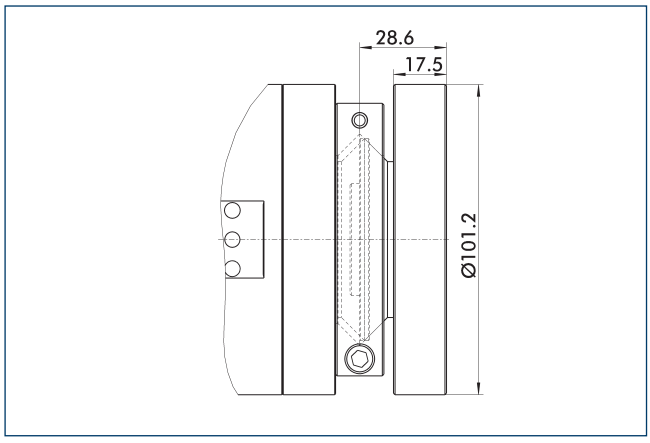
Main view



The main view shows the unit in its basic version.

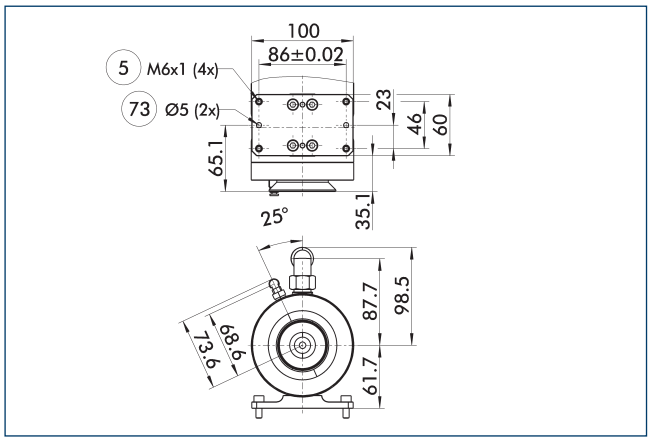
38 Air connection spindle
39 Compensation air connection
40 Collet chuck
73 Fit for centering pins
90 Axial connection
91 Radial connection
92 Screws for axis limitaton (optional)

Adapter plates, axial



Description	ID	Height
		[mm]
Adapter plate		
A-FDB-axial-660	0322211	28.6

Adapter plates, radial



(5) Through hole for connection with screws

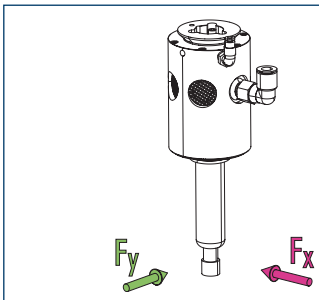
(73) Fit for centering pins

Description	ID	
Adapter plate		
A-FDB-radial-660	0322214	

FDB 1040

Deburring spindle

Forces and moments



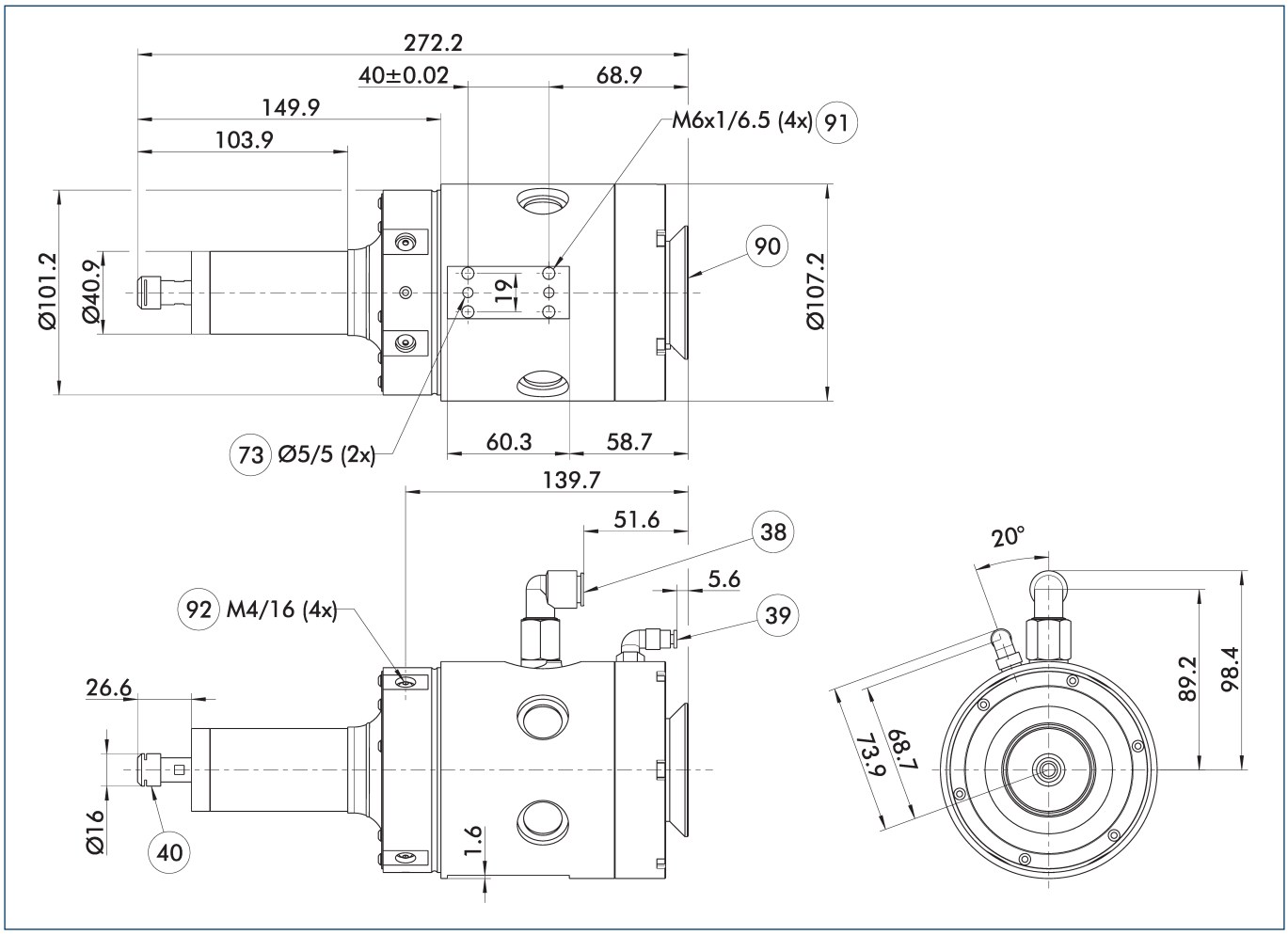
F_x max. 89.00 N F_y max. 89.00 N

ⓘ The indicated forces show the maximum payload.

Technical data

Description		FDB-1040
ID		0322245
Power	[W]	1040
max. compensation stroke	[mm]	± 9.1
max. compensation X	[mm]	± 9.1
max. compensation Y	[mm]	± 9.1
Recommended compensation path	[mm]	± 4.8
min. compliance force	[N]	9.8
max. compliance force	[N]	89
min. compliance pressure	[bar]	1
max. compliance pressure	[bar]	4.1
Idle speed	[1/min]	40000
Idle air consumption	[l/s]	7.6
Stalled air consumption	[l/s]	9
Collet chuck		ER-11
Collet diameter	[mm]	6
Weight	[kg]	4.53
min./max. ambient temperature	[°C]	5/60

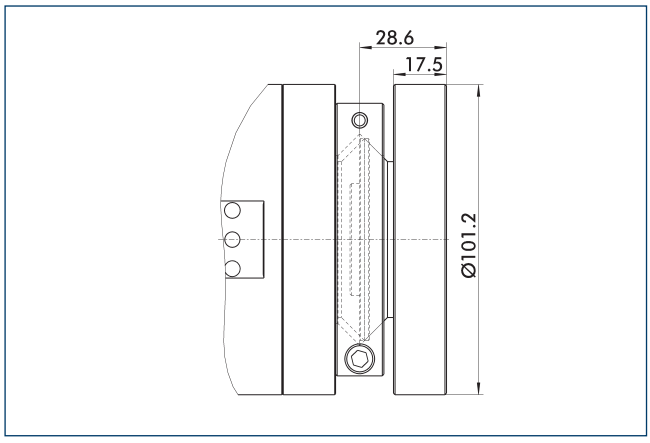
Main view



The main view shows the unit in its basic version.

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

Adapter plates, axial

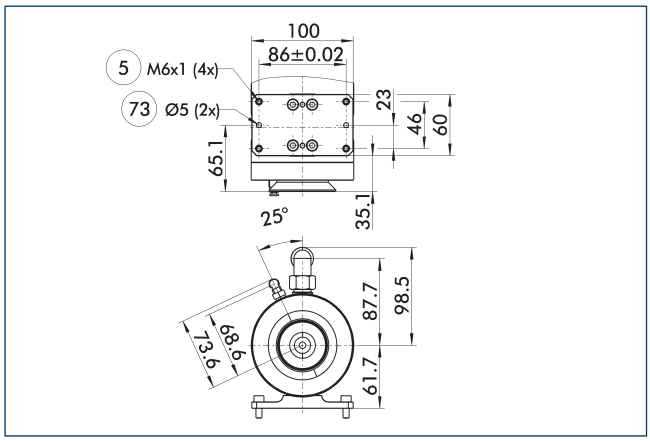


Description	ID	Height
		[mm]
Adapter plate		
A-FDB-axial-660	0322211	28.6

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-radial-660	0322214	

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