



Superior Clamping and Gripping



## Product Information

Deburring spindle FDB

# FDB

Deburring spindle

## 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  
Quantity: 6



Idle speed max.  
25000 .. 65000 1/  
min

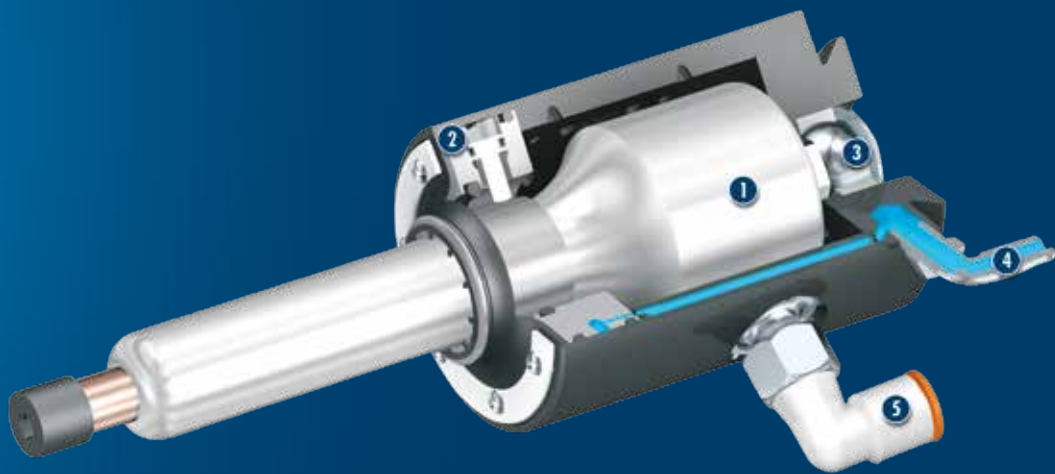


Power  
150 .. 1040 W

## 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  $\pm 9$  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.

# FDB

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## 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 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 ...

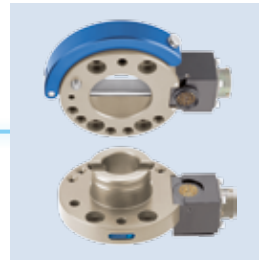
The following components make the product FDB even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.



Collets



Quick-change Systems



manual gripper change systems

① Additional information regarding the products can be found on the following product pages or at [www.schunk.com](http://www.schunk.com). Please contact us for further information: SCHUNK technical hotline +49-7133-103-2696

## Options and special information

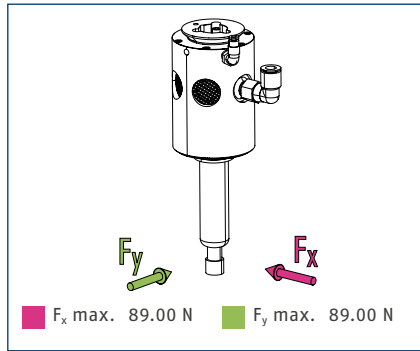
**Universally:** The FDB is not restricted to use on a robot arm, due to its flexible assembly possibilities. It can also be used as a fixed tool with a moving workpiece.

# FDB 1040

Deburring spindle



## Forces and moments

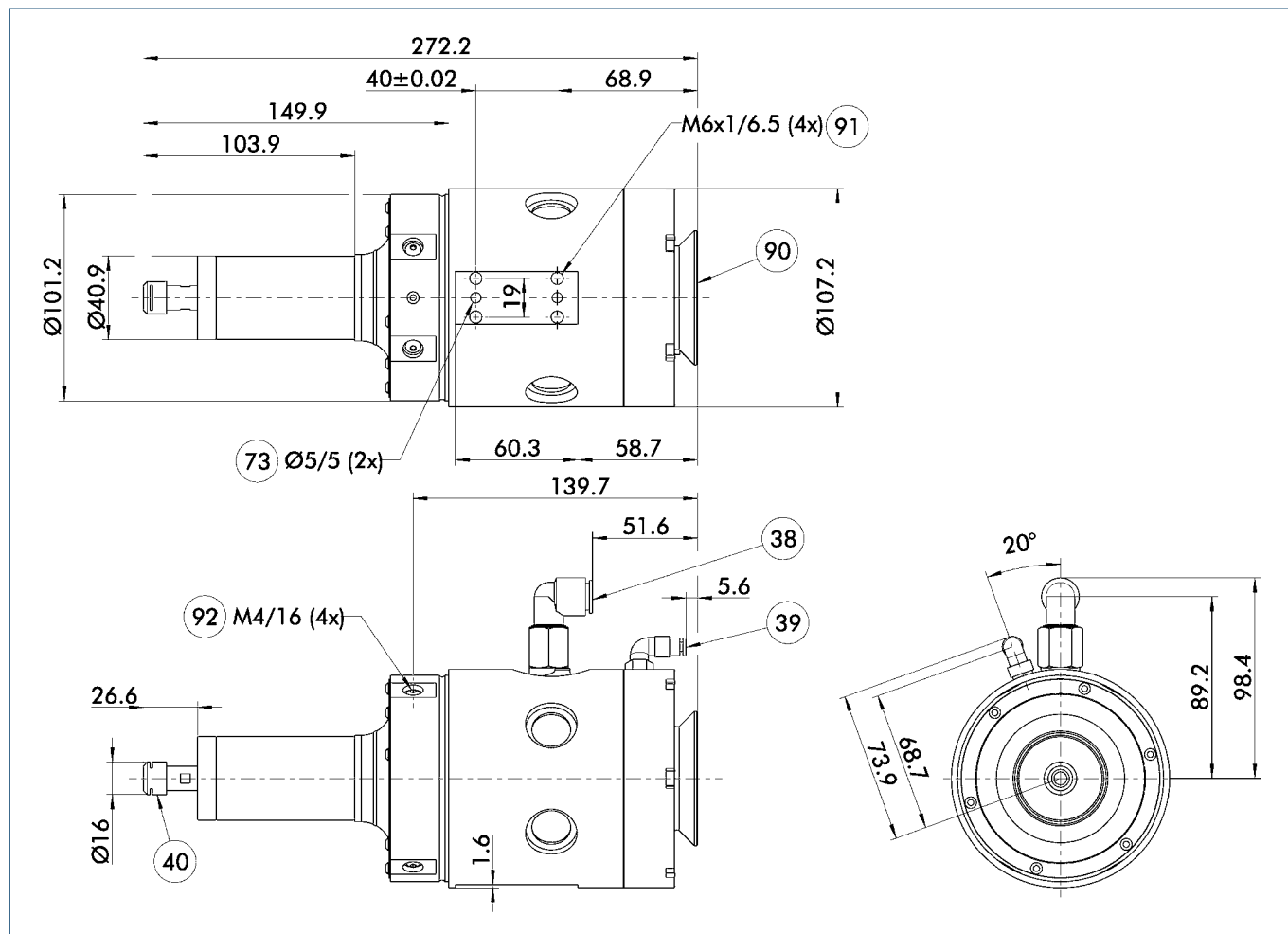


① The indicated forces show the maximum payload.

## 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

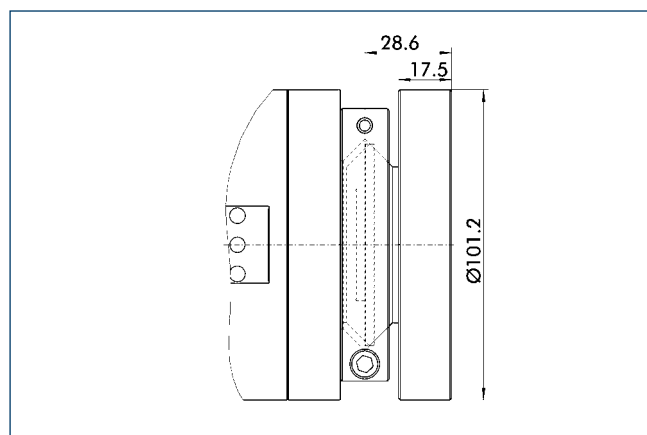
## Main view



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

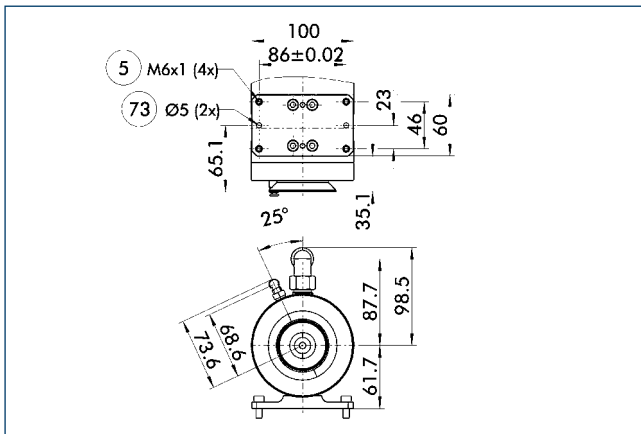


Description	ID	Height [mm]
Adapter plate		
A-FDB-axial-660	0322211	28.6

# 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	





**SCHUNK GmbH & Co. KG**  
**Spann- und Greiftechnik**

Bahnhofstr. 106 – 134  
D-74348 Lauffen/Neckar  
Tel. +49-7133-103-0  
Fax +49-7133-103-2239  
info@de.schunk.com  
www.schunk.com



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*J. Lehmann*

Jens Lehmann, German goalkeeper legend, SCHUNK brand ambassador since 2012 for precise gripping and safe holding.  
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