Superior Clamping and Gripping

Product Information

0-Ring Gripper ORG

Reliable. Flexible. Productive.

O-ring assembling gripper ORG

Grippers, attached with appropriate top fingers allows assembly of O-rings, including square rings and others both on shafts (external assembly) and in bores (internal assembly)

Field of application

The gripper should be used in a clean environment, particularly in automated assembly

Advantages – Your benefits

O.D. and I.D. assembly with one gripper for flexibility and cost-saving

Reliable performance due to new mounting principle for high availability

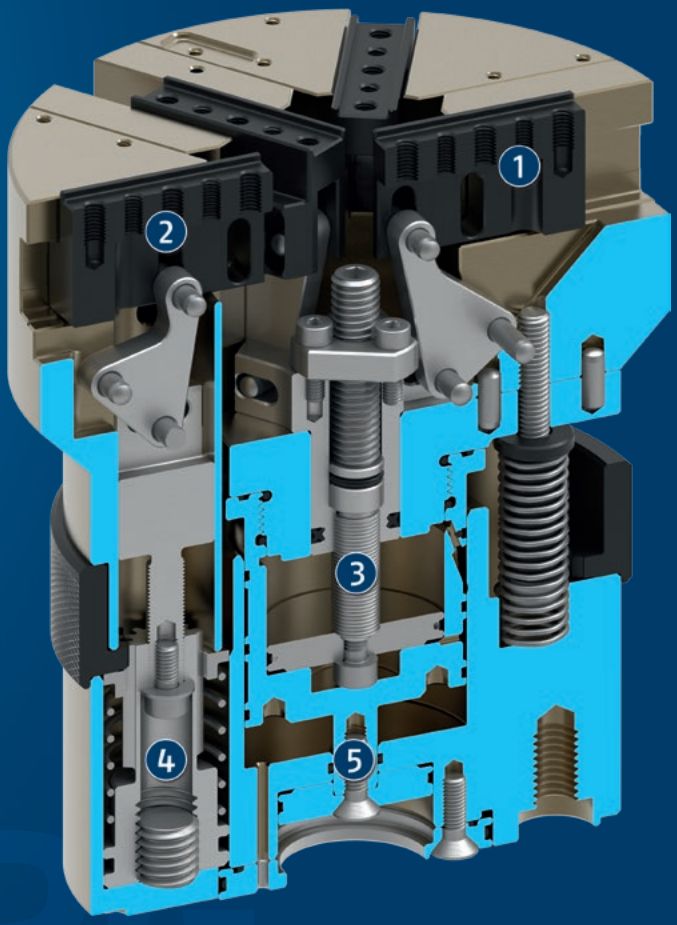
Standard assembly finger for O.D. assembly for conventional ring sizes for fast commissioning

Sizes	Weight	Repeat accuracy
Quantity: 1	1.35 kg	0.02 mm

Functional description

External assembly
The 0-ring is expanded by all six fingers, then the gripper is moved to the assembly groove on the shaft. First the three fingers of triple jaws A are retracted with the linear travel.
The 0-ring is fit through the triangle shape, which adjusts to the remaining hold of the three fingers of triple jaws B, already partially in the groove. The entire gripper is now retracted. The 0-ring is now forced completely into its assembly groove.

Internal assembly
The 0-ring is forced into a cloverleaf shape by the segment jaw of triple B and the finger of triple A. The gripper is moved with its fingers in the assembly bore. The segment jaws now press the 0-ring onto a majority of the groove's circumference.
The fingers are retracted and the 0-ring remains settles further in the groove. The fingers are now inside the 0-ring and the segment jaws press the 0-ring, forcing it into its groove.



① **Triple jaw A**
double-acting

② **Triple jaw B**
one-way acting

③ **Drive**
for triple jaws A

④ **Drive**
for triple jaws B

⑤ **Drive**
for linear travel

General notes about the series

Operating principle: Two independent triple-finger combinations deform the 0-ring in order to then install it.

Housing material: Aluminum

Base jaw material: Steel

Actuation: pneumatic, with filtered compressed air as per ISO 8573-1:2010 [7:4:4].

Warranty: 24 months

Scope of delivery: Centering sleeves, assembly instructions (operating manual with declaration of incorporation is available online)

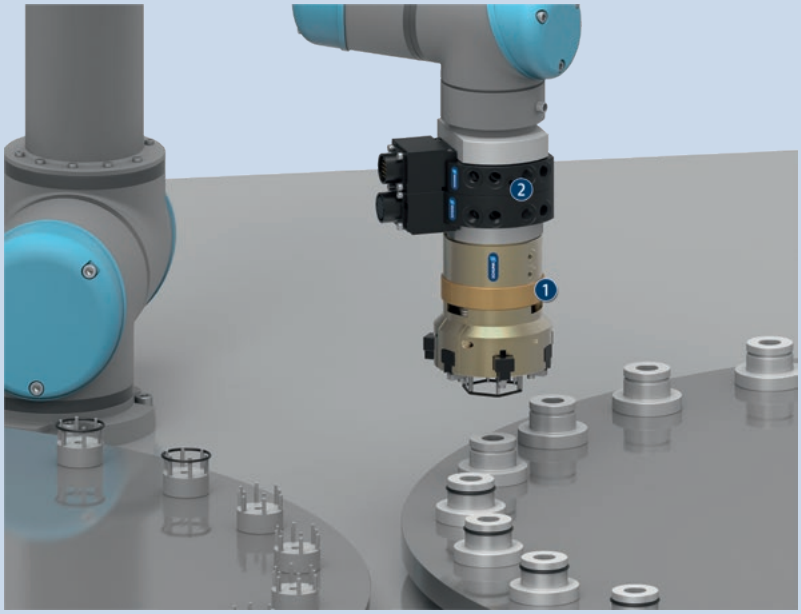
Gripping force: is the arithmetic sum of the individual force applied to each jaw at distance P (see illustration).

Finger length: is measured from the reference surface as the distance P in direction to the main axis.
The maximum permissible finger length applies until the nominal operating pressure is achieved. With higher pressures, the finger length must be reduced proportionally to the nominal operating pressure.

Repeat accuracy: is defined as a distribution of the end Position for 100 consecutive strokes.

Workpiece weight: is calculated for force-fit gripping with a coefficient of static friction of 0.1 and a safety factor of 2 against workpiece slippage at acceleration due to gravity g. For form-fit or capture gripping, there are significantly higher permissible workpiece weights.

Closing and opening times: are purely the times that the base jaws or fingers are in motion. Valve switching times, hose fill times, or PLC reaction times are not included, and are to be considered when cycle times are calculated.



Application example

Gripping unit for mounting 0-rings

1. 0-ring assembling gripper ORG
2. 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.

Assembly fingers

Inductive proximity switches

ⓘ For more information on these products can be found on the following product pages or at schunk.com.

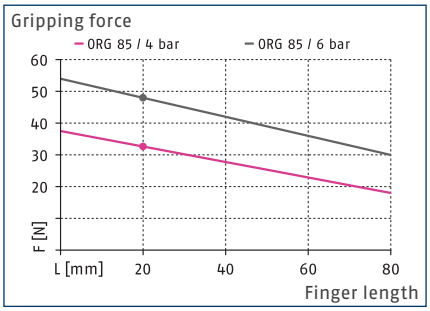
Options and special information

For standard 0-ring sizes SCHUNK offers standard assembly fingers for external assembly. Assembly fingers for internal assembly are always 0-ring specific. On request, they can be purchased as customized components from SCHUNK or manufactured by customers themselves. Drawings and design instructions can be found in the extensive operating manual that is available online as a PDF document.
Max. 0-ring cord thickness: The max. 0-ring cord thickness to be installed is a diameter of 4 mm.

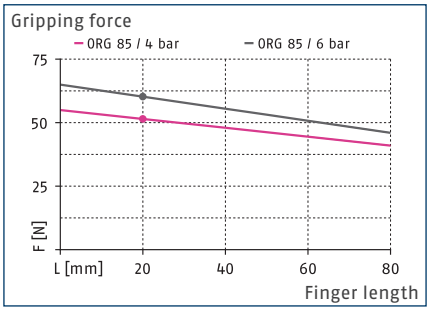
ORG 85

0-Ring Gripper

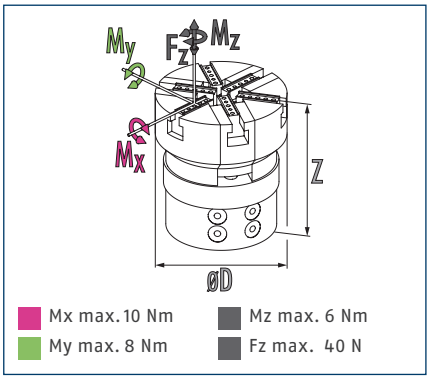
Triple jaws A outside gripping force



Triple jaws A inside gripping force



Dimensions and maximum loads



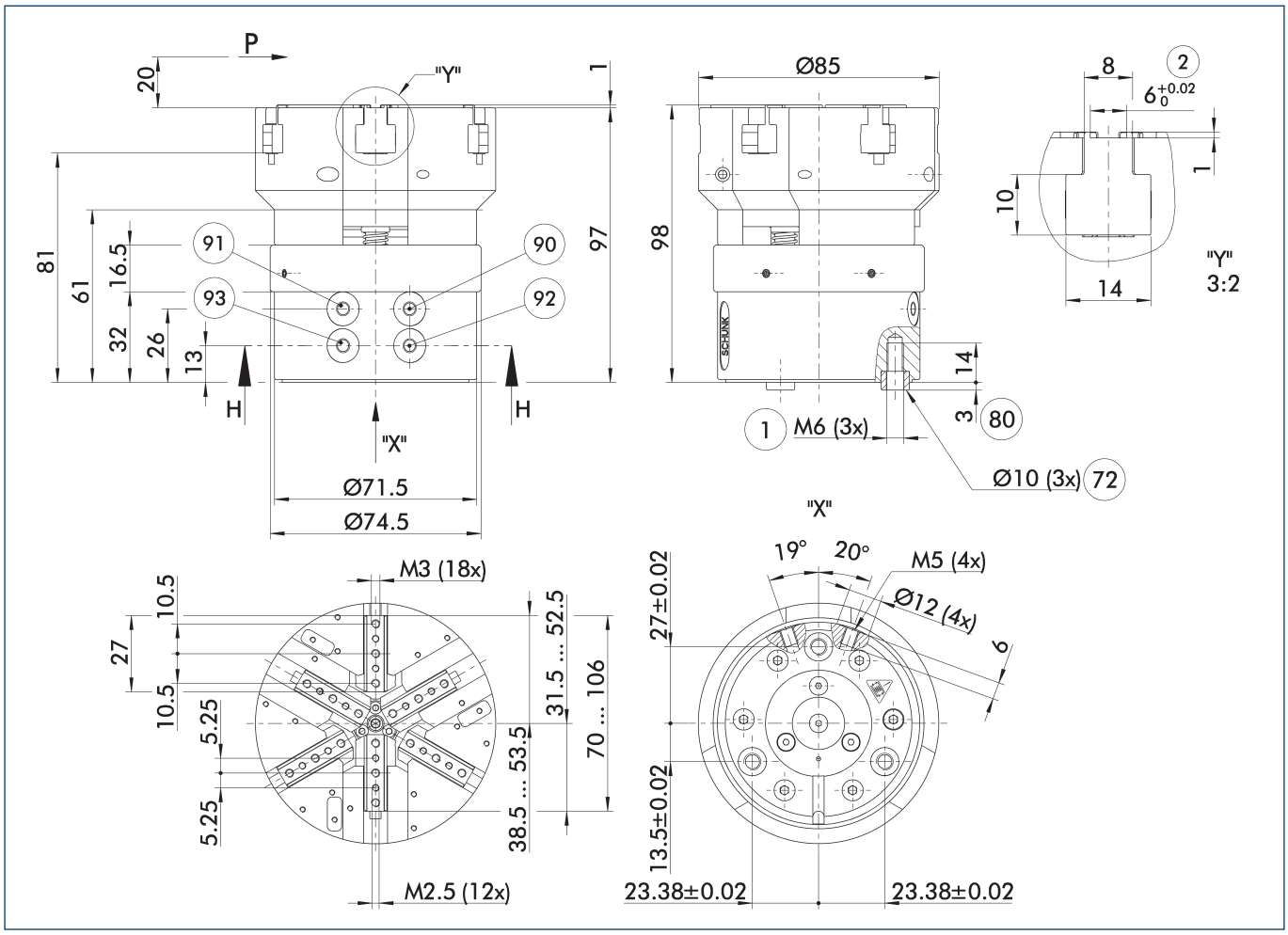
ⓘ The indicated moments and forces are statical values, apply for each base jaw and may appear simultaneously. Loads may additionally occur to the moment produced by the gripping force itself.

Technical data

Description		ORG 85
ID		0304120
Number of fingers		6
Triple jaws A: working principle		double-acting
Triple jaws A: stroke per finger	[mm]	21.0
Triple jaws A: closing force	[N]	45.0
Triple jaws A: opening force	[N]	55.0
Triple jaws A: retraction stroke	[mm]	5.0
Triple jaws A: retraction force	[N]	20.0
Triple jaws A: fluid consumption per double stroke	[cm³]	11
Triple jaws A: fluid consumption per retraction stroke	[cm³]	6
Triple jaws B: working principle		one-way acting
Triple jaws B: stroke per finger	[mm]	15.0
Triple jaws B: opening force	[N]	125.0
Triple jaws B: fluid consumption per opening stroke	[cm³]	9
Closing/opening time	[s]	0.1/0.12
Weight	[kg]	1.35
Min./nom./max. operating pressure	[bar]	4/6/8
Max. permissible finger length	[mm]	80.0
IP protection class		40
Min./max. ambient temperature	[°C]	5/90
Repeat accuracy	[mm]	0.02
Dimensions Ø D x Z	[mm]	85 x 98

ⓘ The principle mountability of O-rings depends on the shape (O-ring, square ring, etc.), shore hardness, inner diameter, and cord strength, as well as installation depth. In general, Ø 5 mm to Ø 160 mm O-rings can be mounted for outside assembly, and for internal assembly O-ring from Ø 10 mm to Ø 120 mm are used.
Triple jaws A and B can both be adjusted with regard to their opening travel – the closed position remains unaffected.
Please contact SCHUNK to ensure ultimate installation compatibility.

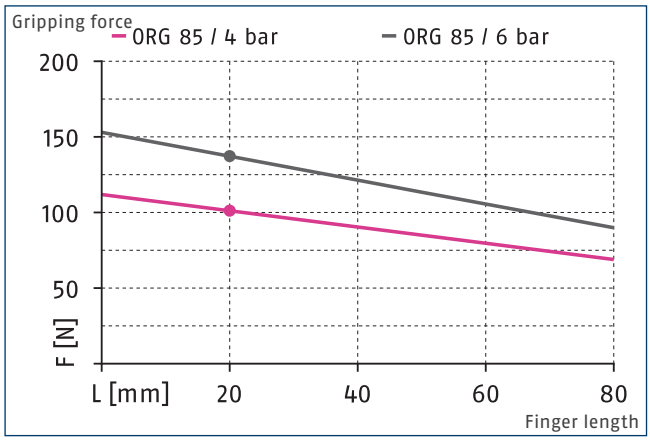
Main view



The drawing shows the gripper in the basic version with closed jaws, without dimensional consideration of the options described below.

1. Gripper connection
2. Finger connection
72. Fit for centering sleeves
80. Depth of the centering sleeve hole in the counter part
90. Main / direct connection, gripper jaw triple A opening
91. Main / direct connection, gripper jaw triple A closing
92. Main / direct connection, gripper jaw triple B opening
93. Main / direct connection, Z-Stroke Unit is retracted

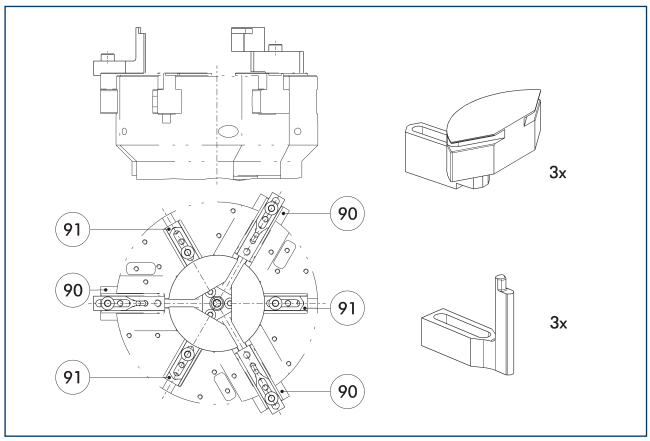
Triple jaws B inside gripping force



ORG 85

0-Ring Gripper

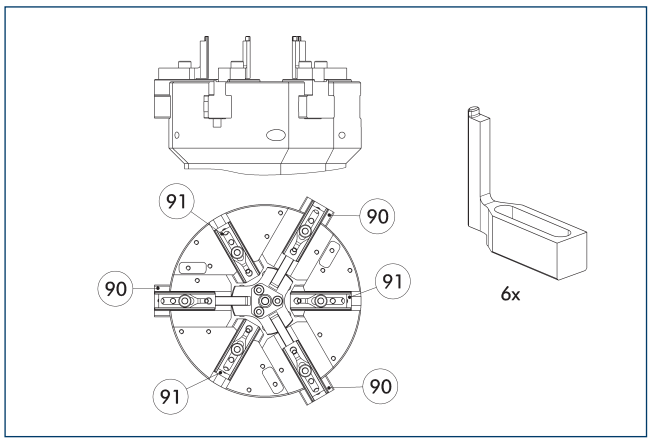
Internal assembly concept



(90) Triple jaw A (91) Triple jaw B

Three form fingers and three rod fingers are required for internal assembly. Their geometry is based on the dimensions of the ring to be mounted. See the downloadable operating manual of the ORG for design rules. SCHUNK offers engineering design and production services on request.

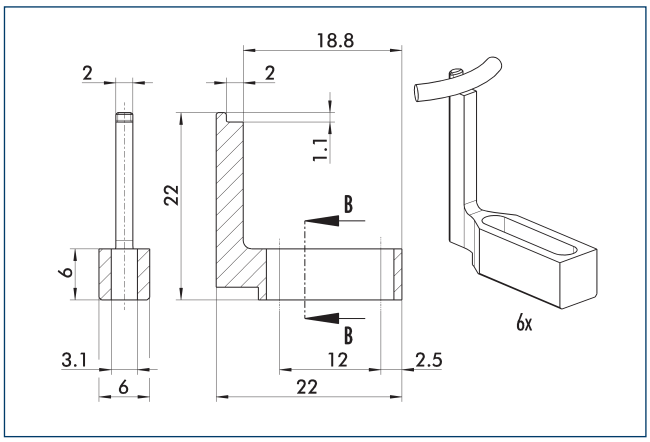
External assembly concept



(90) Triple jaw A (91) Triple jaw B

Six fingers are required for external assembly. See the downloadable operating manual of the ORG for design rules. SCHUNK offers engineering design and production services on request.

Finger blanks MFA-D2-0.5-1.0-ORG 85

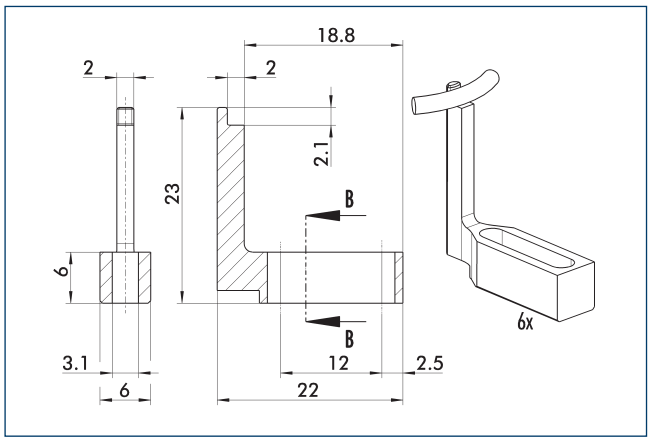


Standard fingers for external assembly of rings having cord strength 0.5 mm to 1.0 mm.

Description	ID	Material	Scope of delivery
Finger			
MFA-D2-0.5-1.0-ORG 85	0304113	Aluminum	1

ⓘ Six fingers are required.

Finger blanks MFA-D2-1.0-2.0-ORG 85

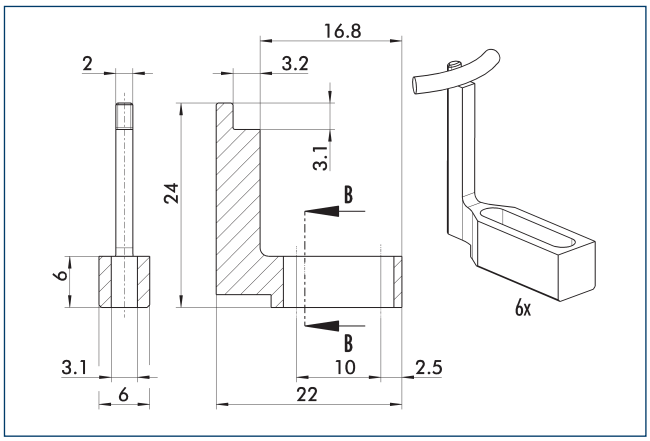


Standard fingers for external assembly of rings having cord strength 1.0 mm to 2.0 mm.

Description	ID	Material	Scope of delivery
Finger			
MFA-D2-1.0-2.0-ORG 85	0304114	Aluminum	1

ⓘ Six fingers are required.

Finger blanks MFA-D2-2.0-3.0-ORG 85

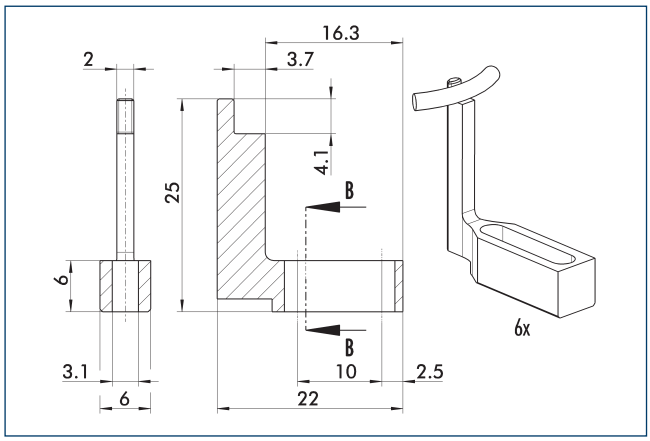


Standard fingers for external assembly of rings having cord strength 2.0 mm to 3.0 mm.

Description	ID	Material	Scope of delivery
Finger			
MFA-D2-2.0-3.0-ORG 85	0304115	Aluminum	1

ⓘ Six fingers are required.

Finger blanks MFA-D2-3.0-4.0-ORG 85

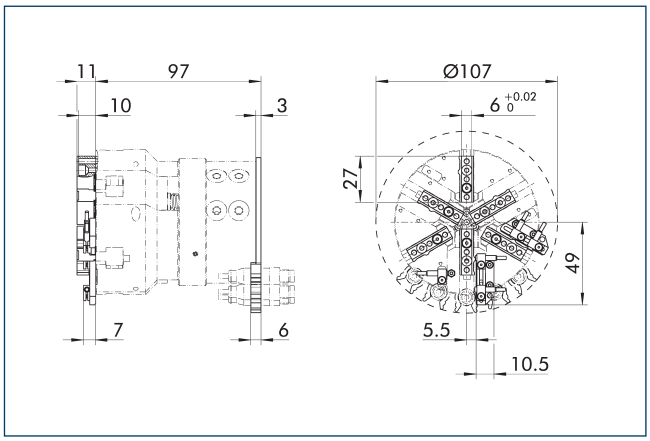


Standard fingers for external assembly of rings having cord strength 3.0 mm to 4.0 mm.

Description	ID	Material	Scope of delivery
Finger			
MFA-D2-3.0-4.0-ORG 85	0304116	Aluminum	1

ⓘ Six fingers are required.

Attachment kit for proximity switch

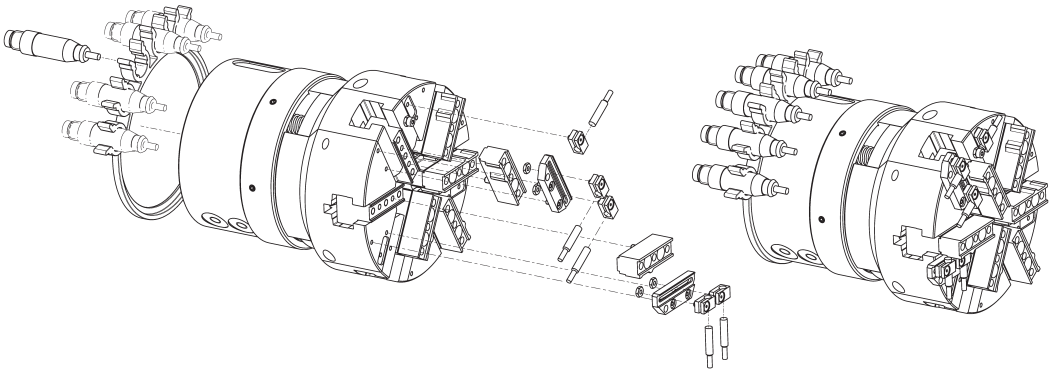


End position monitoring can be mounted with an attachment kit.

Description	ID	
Attachment kit for proximity switch		
AS-ORG 85-IN30K	1401277	

ⓘ This attachment kit needs to be ordered optionally as an accessory.

Inductive Proximity Switches



End position monitoring can be mounted with an attachment kit.

Description	ID	Often combined
Attachment kit for proximity switch		
AS-ORG 85-IN30K	1401277	
Inductive proximity switches		
IN 30K-S-M8-PNP	1001272	●

ⓘ Per unit five sensors (closer/S) are required for each unit, plus extension cables as an option. This attachment kit needs to be ordered optionally as an accessory. For sensor cables, note the minimum permissible bending radii. These are generally 35 mm.

SCHUNK GmbH & Co. KG
Spann- und Greiftechnik

Bahnhofstr. 106 - 134
D-74348 Lauffen/Neckar
Tel. +49-7133-103-0
Fax +49-7133-103-2399
info@de.schunk.com
schunk.com

Folgen Sie uns | *Follow us*