

2-Finger-Parallel-Gripper RH 901- 940

Assembly and Operating Manual



Imprint

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Technical changes:

We reserve the right to make alterations for the purpose of technical improvement.

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Dear customer,

congratulations on choosing a SCHUNK product. By choosing SCHUNK, you have opted for the highest precision, top quality and best service.

You are going to increase the process reliability of your production and achieve best machining results – to the customer's complete satisfaction.

SCHUNK products are inspiring.

Our detailed assembly and operation manual will support you.

Do you have further questions? You may contact us at any time – even after purchase.

Kindest Regards

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1 About this manual

This instruction is an integral part of the product and contains important information for a safe and proper assembly, commissioning, operation, maintenance and help for easier trouble shooting.

Before using the product, read and note the instructions, especially the chapter "Basic safety notes".

1.1 Warnings

To make risks clear, the following signal words and symbols are used for safety notes.

	! DANGER Danger for persons. Non-compliance will inevitably cause irreversible injury or death.
	! WARNING Dangers for persons. Ignoring a safety note like this can lead to irreversible injury and even death.
	! CAUTION Dangers for persons. Non-observance can cause minor injuries.
	NOTICE Material damage Information about avoiding material damage.

1.2 Applicable documents

- General terms of business
- Catalog data sheet of the purchased product
- Assembly and Operating manuals of the accessories

The documents listed here, can be downloaded on our homepage www.schunk.com

2 Basic safety notes

2.1 Intended use

The product was designed to grip and to temporarily and securely hold workpieces and objects.

The product is intended for installation in a machine/system. The requirements of the applicable guidelines must be observed and complied with.

The product may be used only in the context of its defined application parameters ([👉 6, Page 10](#)).

The product is designed for industrial use.

To use this unit as intended, it is also essential to observe the technical data and installation and operation notes in this manual and to comply with the maintenance intervals.

2.2 Not intended use

Use which is not specified as an intended use is for instance when the product is for example used as a pressing tool, stamping tool, lifting tool, guide for tools, cutting tool, tensioning mean, boring tool.

2.3 Environmental and operating conditions

- Make sure that the product and the top jaws are a sufficient size for the application.
- Make sure that the environment is free from splash water and vapors as well as from abrasion or processing dust. Exceptions are products that are designed especially for contaminated environments.

2.4 Product safety

Dangers arise from the product, if:

- the product is not used in accordance with its intended purpose.
- the product is not installed or maintained properly.
- the safety and installation notes are not observed.

Avoid any manner of working that may interfere with the function and operational safety of the product.

Wear protective equipment.

NOTE

More information are contained in the relevant chapters.

2.4.1 Protective equipment

Provide protective equipment per EC Machinery Directive.

2.4.2 Demands on the top jaws

Arrange the top jaws such that when the product is depressurized it can reach one of the end positions either open or closed and therefore no residual energy can be released when changing the top jaws.

2.4.3 Constructional changes, attachments, or modifications

Additional drill holes, threads, or attachments that are not offered as accessories by SCHUNK may be attached only with permission of SCHUNK.

2.5 Personnel qualification

The assembly, initial commissioning, maintenance, and repair of the product may be performed only by trained specialist personnel. Every person called upon by the operator to work on the product must have read and understood the complete assembly and operating manual, especially the chapter "Basic safety notes" ([👉 2, Page 5](#)). This applies particularly to personnel only used occasionally, such as maintenance personnel.

2.6 Using personal protective equipment



When using this product, observe the relevant industrial safety regulations and use the personal protective equipment (PPE) required!



- Use protective gloves, safety shoes and safety goggles.
- Observe safe distances.
- Minimal safety requirements for the use of equipment.

2.7 Notes on particular risks

Generally valid:

- Remove the energy supplies before installation, modification, maintenance, or adjustment work.
- Make sure that no residual energy remains in the system.
- Do not move parts by hand when the energy supply is connected.
- Do not reach into the open mechanism or the movement area of the unit.
- Perform maintenance, modifications, and additions outside the danger zone.
- Secure the product during all operations against uncontrolled activation.
- Take a precautionary approach by maintenance and disassembly.
- Only specially trained staff should disassemble the product.

	 WARNING
	Risk of injury due to squeezing and bumping during movement of the gripper jaws and breaking or loosening of the gripper fingers !

	 WARNING
	Risk of injury from objects falling and being ejected <ul style="list-style-type: none">• The danger zone must be surrounded by a safety fence during operation.

	 WARNING
	While disassembling uncontrollable moves of parts of the gripper possible!

3 Warranty

If the product is used as intended, the warranty is valid for 24 months from the date of delivery from the production facility under the following conditions:

- Observe the applicable documents ([👉 1.2, Page 4](#))
- Observance of the ambient conditions and operating conditions ([👉 2.3, Page 5](#))

Parts touching the workpiece and wearing parts are not part of the warranty.

4 Scope of delivery

The scope of delivery includes:

- 2-Finger-Parallel-Gripper RH 901-940 in the ordered model.
- Accessory pack

5 Accessories

A wide range of accessories are available for this module.

For information about which accessories can be used with the appropriate product version [👉 catalog](#).

5.1 Sensors

Overview of the compatible sensors

Designation	Type	Note
Micro-photo-sensor for stroke monitoring	FS	only for RH 901, RH 901 ST 10, RH 905 The micro-photo-sensor can not be retrofitted!
Inductive proximity switches	IN 8	RH 907
Inductive proximity switches	IN 50	RH 925

- Exact type designation of the compatible sensors see [👉 catalog](#).
- If you require further information on sensor operation, contact your SCHUNK contact person or download information from our homepage.



6 Technical data

Pressure medium	Compressed air, compressed air quality according to ISO 8573-1:7 4 4
Min. pressure [bar]	2
Max. pressure [bar]	7
Nominal working pressure [bar]	6
Min. ambient temperature [°C]	5
max. ambient temperature [°C]	60
IP rating	30
Noise emission [dB(A)]	≤ 70

Further technical data can be found in the catalog data sheet.
The most recent version applies.

7 Assembly

7.1 Mechanical connection

	 WARNING
	<p>Risk of injury during assembly!</p> <ul style="list-style-type: none"> • Switch off the energy supply.

Check the evenness of the bolting surface

The values relate to the entire bolting surface.

Requirements for levelness of the bolting surface (Dimensions in mm)

Diameter	Permissible unevenness
< 100	< 0.02
> 100	< 0.05

Assembly

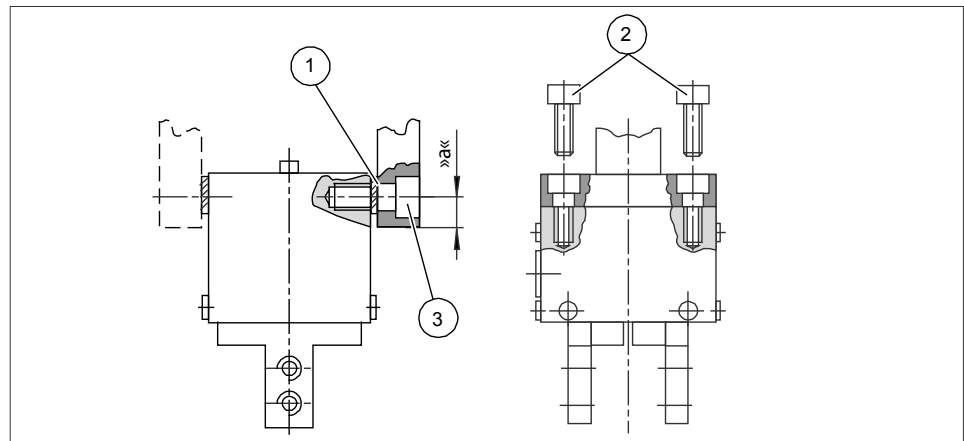


Fig. 1 Assembly options


1	Screw 1 (2x)
2	Screw 2 (2x)
3	Spacer (only for RH 901, RH 901 ST 10, RH 905)


The grippers can be fastened with 2 screws on the base side or at the lateral sides.

Please consider the starting torques and the dimension of the adaptor plate (dimension »a«) at lateral fastening.

Type	Thread	Depth	Dimension "a"	Max. tightening torque	
				Screw 1	Screw 2
RH 901 K / 901 ST 10	M3	5 mm	3 mm	0.5 Nm	0.9 Nm
RH 905	M4	6 mm	5 mm	1.8 Nm	2.2 Nm
RH 907	M4	7 mm	5 mm	1.8 Nm	2.2 Nm
RH 925	M5	10 mm	6 mm	2.5 Nm	1.5 Nm
RH 940	M6	15 mm	10 mm	7.5 Nm	7.5 Nm

7.2 Air connection

	NOTICE
	<p>Damage to the gripper is possible! If the maximum permissible finger weight or the permissible mass moment of inertia of the fingers is exceeded, the gripper can be damaged.</p> <ul style="list-style-type: none"> A jaw movement always has to be without jerks and bounce. You must therefore implement sufficient reduction and/or damping. Observe the diagrams and information in the catalog data sheet.

	NOTICE
	<p>Observe the requirements for the air supply (👉 6, Page 10).</p>

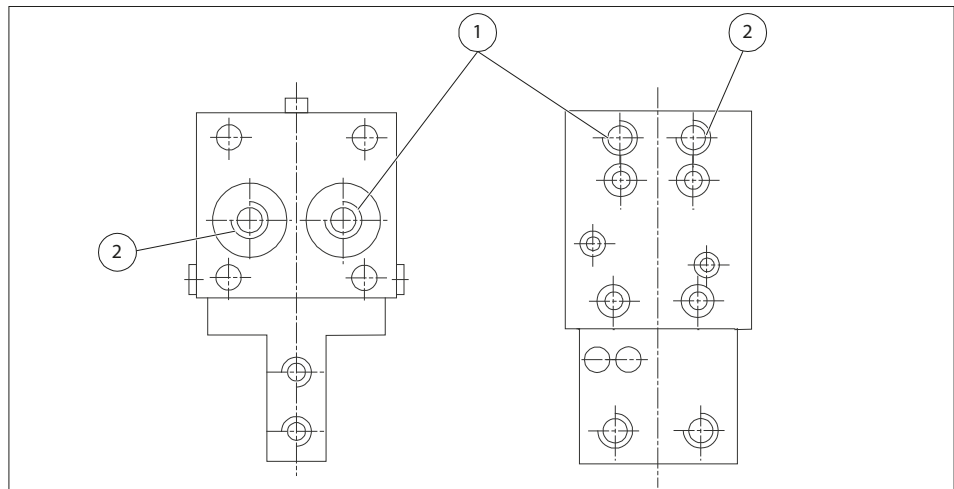


Fig. 2 Air connections

1	Open	2	Closed
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For connecting the gripper use throttle check valves (exhaust air throttled)

-
- RH 901 K,** Two air connections on the lateral side
RH 901 ST 10,
RH 905
- RH 901 K: 2 x M3 / 3 deep
 - RH 901 ST 10: 2 x M3 / 3 deep
 - RH 905: 2 x M5 / 5 deep

- RH 907,** Two air connections on the lateral side
RH 925,
RH 940
- RH 907: 2 x M5 / 3 deep
 - RH 925: 2 x M5 / 5 deep
 - RH 940: 2 x M5 / 5 deep

7.3 Sensors

- If you require further information on sensor operation, contact your SCHUNK contact person or download information from our homepage.
- Technical data for the sensors can be found in the data sheets (included in the scope of delivery).

7.3.1 Photo sensor (RH 901 K, RH 901 ST10, RH 905)

NOTE

Micro-photo sensors can not be retrofitted! They have to be ordered together with the gripper used for your application and we will ship them assembled.

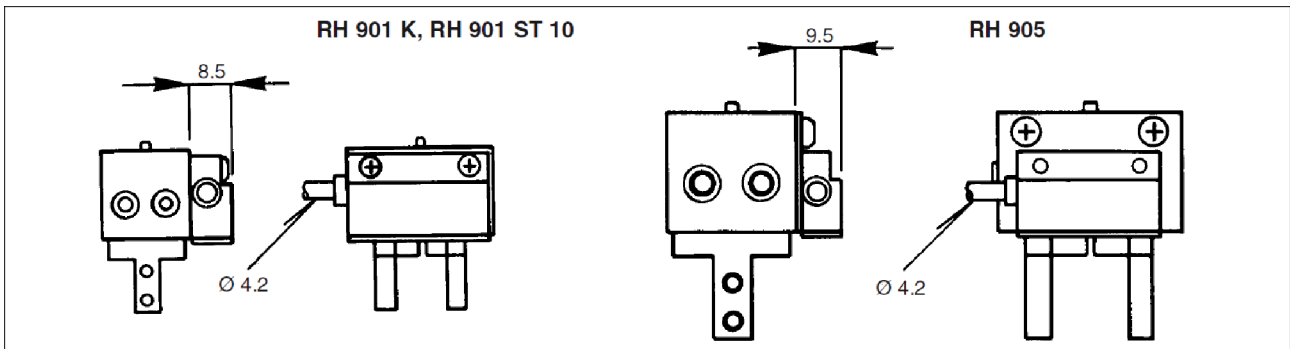


Fig. 3

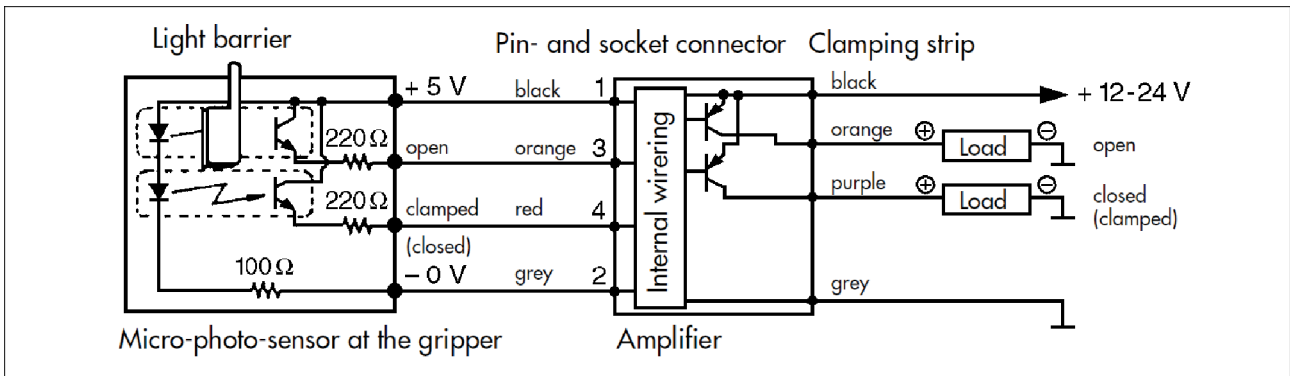


Fig. 4

- 1 Connect the micro-photo-sensor with the amplifier.
- 2 Connect the amplifier with the customer- side control unit.

7.3.2 Proximity switch IN8 (RH 907)

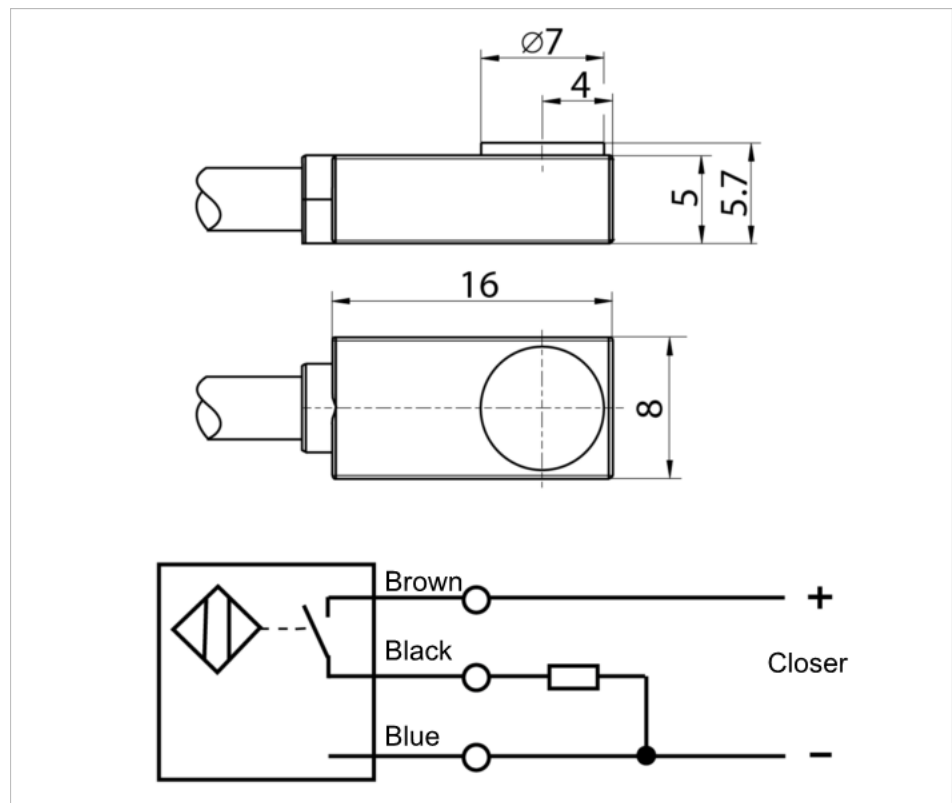


Fig. 5

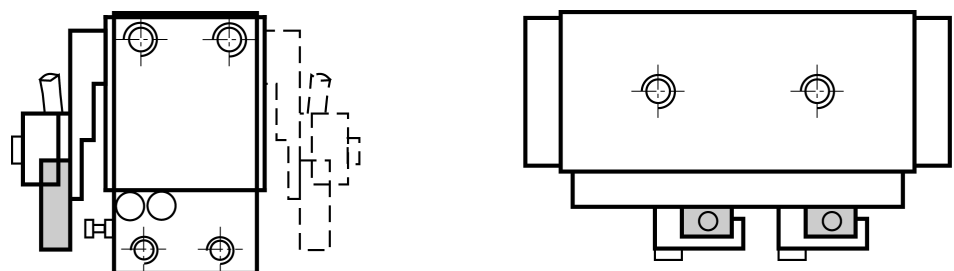


Fig. 6

- 1 Mount proximity switch into the mounting kit
- 2 Adjust the proximity switch so that it is actuated by the switching cam in the required position.

7.3.3 Proximity switch IN 50 (RH 925, RH 940)

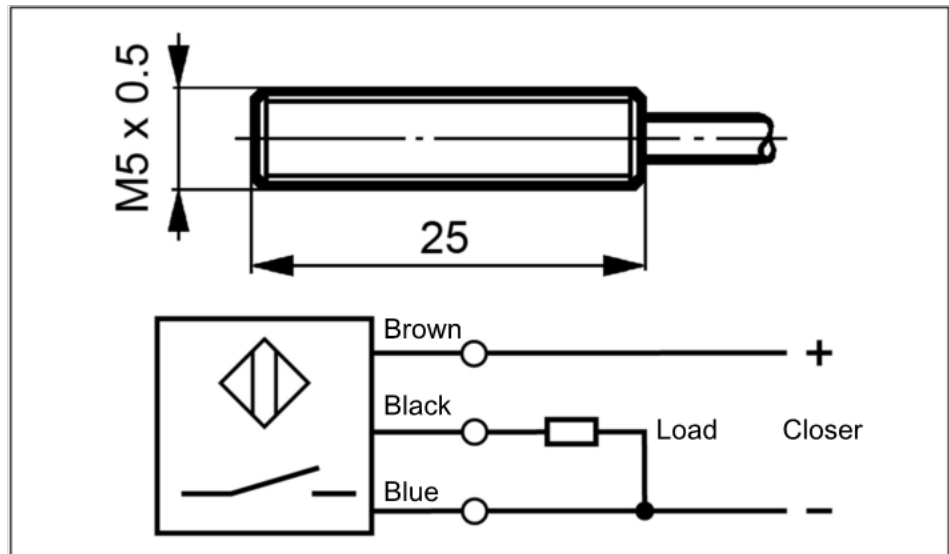


Fig. 7

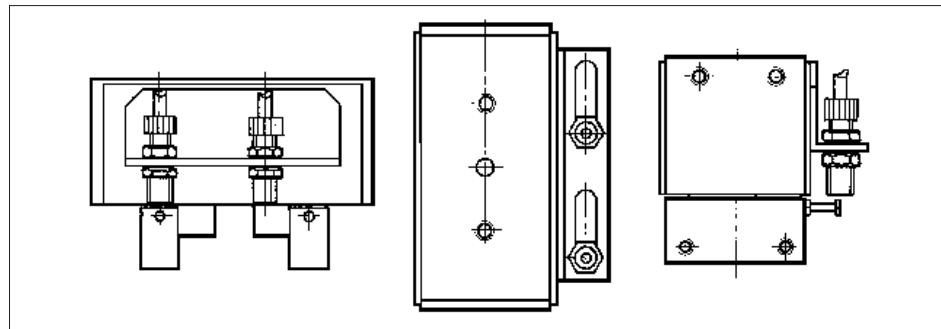


Fig. 8

- 1 Mount the proximity switch in the oblong hole of the mounting bracket.
- 2 Adjust the proximity switch so that it is actuated by the switching cam in the required position.

8 Maintenance

The gripper is maintenance-free.

Clean the gripper carefully with a soft cloth when dirty.

Do not use solvents.

Do not disassemble the gripper Do not disassemble the gripper. All screws are fixed with a high-strength adhesive.

The Micro-photo-sensors and the proximity switches can be exchanged.



9 Translation of original declaration of incorporation

in terms of the Directive 2006/42/EG, Annex II, Part 1.B of the European Parliament and of the Council on machinery.

Manufacturer/ SCHUNK GmbH & Co. KG Spann- und Greiftechnik
Distributor Bahnhofstr. 106 – 134
D-74348 Lauffen/Neckar

We hereby declare that on the date of the declaration the following incomplete machine complied with all basic safety and health regulations found in the directive 2006/42/EC of the European Parliament and of the Council on machinery. The declaration is rendered invalid if modifications are made to the product.

Product designation: 2-Finger-Parallel-Gripper / RH 901-940 /
ID number 0360131 ... 0360321

The incomplete machine may not be put into operation until conformity of the machine into which the incomplete machine is to be installed with the provisions of the Machinery Directive (2006/42/EC) is confirmed.

Applied harmonized standards, especially:

EN ISO Safety of machinery - General principles for design - Risk assessment
12100:2011-03 and risk reduction

The manufacturer agrees to forward on demand the relevant technical documentation for the partly completed machinery to state offices.

The special technical documents according to Appendix VII, Part B belonging to the incomplete machine have been compiled.

Person authorized to compile the technical documentation:
Robert Leuthner, Address: see manufacturer's address



Lauffen/Neckar, January 2014

p.p. Ralf Winkler,
Head of Gripping Systems Development

