

Hole Gripper LOG 20 - 99

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

The following key words and symbols are used to highlight dangers.

1.1.1 Key words

DANGER	Dangers for persons. Non-compliance will inevitably cause irreversible injury or death.
WARNING	Dangers for persons. Non-compliance may cause irreversible injury or death.
CAUTION	Dangers for persons. Non-observance may cause minor injuries.
NOTICE	Information about avoiding material damage

1.1.2 Symbols



Warning about a danger point



Warning about hand injuries



General mandatory sign to prevent material damage

1.2 Applicable documents

- General terms of business
- SCHUNK catalog Gripping modules
- 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 9](#)).

For appropriate use of this unit, it is also essential to observe the technical data and assembly and operation notes in this manual.

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.
- Ensure that the environment is clean.
- Make sure that the environment is free from splash water and vapors as well as from abrasion or processing dust. This excludes products that are designed specially for contaminated environments.
- Prevent the LOG hole grippers remain pressurized with compressed air for a long time (> 1 hour) (e.g. in case of machine shutdown or overnight). In addition, idle strokes (opening the gripper without a workpiece) are to be avoided.
- For production reasons, it is possible that powder granules come loose on the gripper (inside and outside) during operation. Therefore, the use of a filter for the compressed air is recommended.

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

	 CAUTION
	<p>Danger of crushing between the gripper housing and base jaws Fingers or body parts can be crushed if they get into the openings between the gripper housing and base jaws during operation.</p> <ul style="list-style-type: none"> • When the air supply is connected, do not reach into the openings between the gripper housing and base jaws.

3 Warranty

If the product is used as intended, the warranty is valid for 12 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](#))
- Observe the maximum mileage ([👉 6, Page 9](#)).
- Observance of the maintenance and lubrication intervals ([👉 9, Page 14](#))

Wearing surfaces that come into contact with the workpiece are excluded from the warranty.

At high temperatures a shorter life span can be expected.

The product is not considered defective if it warps plastically within the specified limits. The permissible warp is dependent on the workpiece diameter.

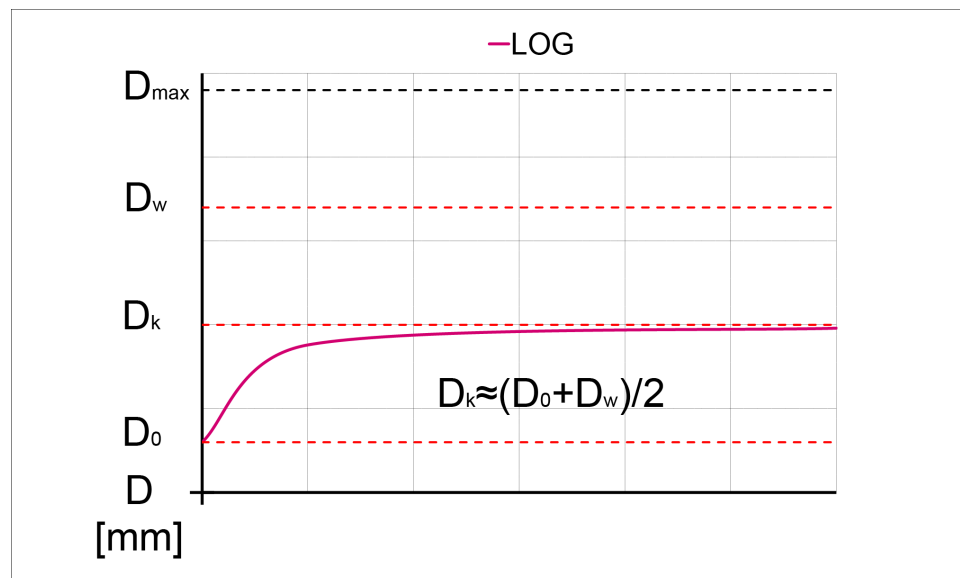


Fig. 1

Symbol [mm]	Designation
D_0	Gripper - $\varnothing D$
D_k	Max. value to which the gripper - $\varnothing D$ creeps
D_w	Workpiece diameter
D_{max}	Max. workpiece diameter


4 Scope of delivery

The scope of delivery includes:

- Hole Gripper LOG in the ordered model.

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.

6 Technical Data

Technical Data

Designation	LOG 20 - 99
Pressure medium	Compressed air, compressed air quality according to ISO 8573-1:7 4 4
Nominal working pressure [bar]	6
Max. pressure [bar]	6
Noise emission [dB(A)]	≤ 70

The gripping force can be set directly by the operating pressure. At a lower pressure than the nominal operating pressure, the full stroke cannot be achieved.

Warranty

Designation	LOG 20 - 99
Warranty duration [months]	12
or maximum cycles [piece]	5.000.000

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

7 Assembly

7.1 Mechanical connection

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

Mounting The product can be mounted in a threaded hole or a through hole with a corresponding counter nut.

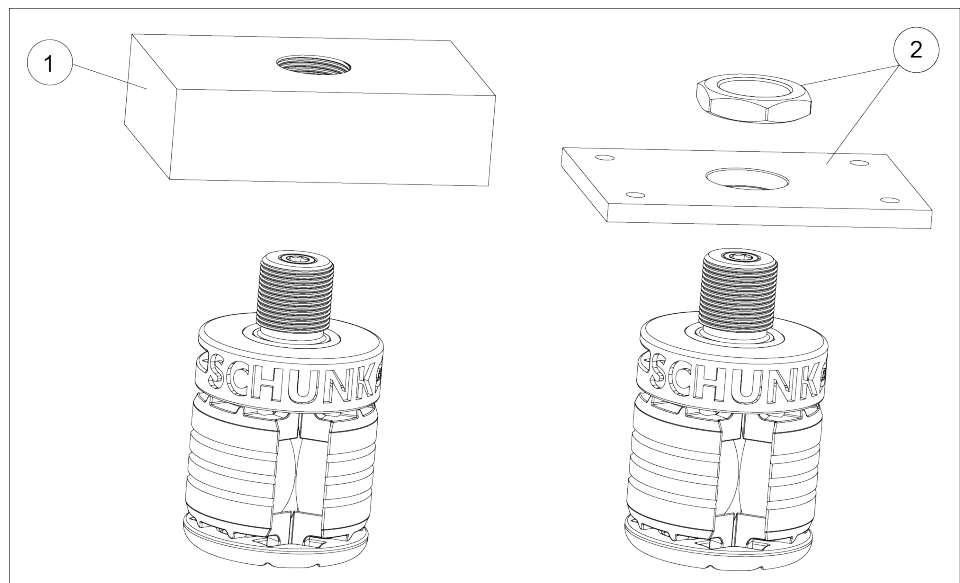



Fig. 2 Assembly options

1	Mounting with threaded hole
2	Mounting with through hole and nut

Mounting thread

Description	LOG		
	20 - 25	26 - 63	64 - 99
Mounting thread on the module	M14 × 1.5 Length 17 mm	M16 × 1 Length 17 mm	M20 × 1.5 Length 17 mm

7.2 Air connections

	NOTICE
	<p>Observe the requirements for the air supply. (→ 6, Page 9) "Technical Data"</p>

The product has an air connection, but has two ways of supplying air.

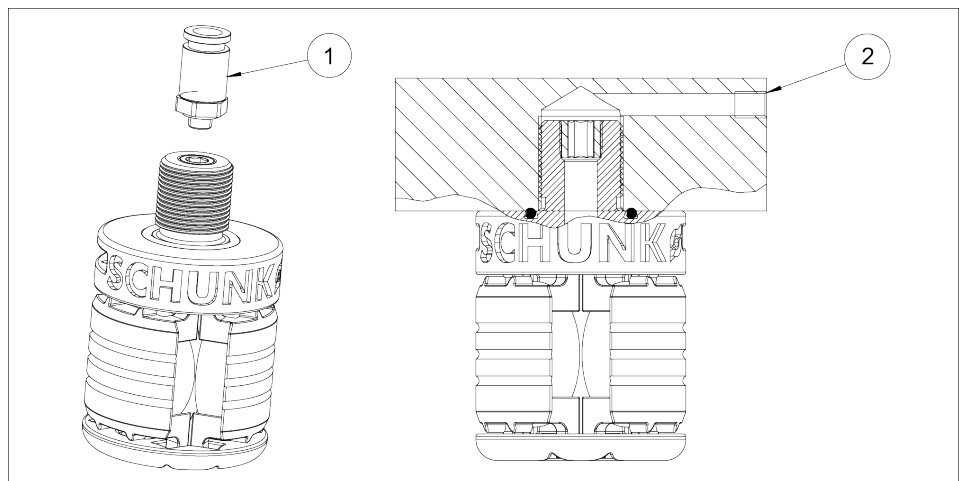


Fig. 3 Air connections

1	<p>Air connection from above (hose connection) M5 (LOG 20 - 63) and G 1/8' (LOG 64 - 99)</p>
2	<p>Internal air supply (hose-free direct connection) The connection is sealed by the O-ring. A suitable surface finish in the plate is required.</p>

8 Troubleshooting

8.1 Product does not move?

Possible cause	Corrective action
Pressure drops below minimum.	Check the air supply. (☞ 7.2, Page 11)
Component is broken, e.g. through overloading	Replace the gripper completely. Make sure that the product was only used in the context of its defined application parameters (☞ 6, Page 9).

8.2 The product does not travel through the entire stroke?

Possible cause	Corrective action
Dirt deposits between the end stops	Clean the product.
Pressure drops below minimum.	Check the air supply. (☞ 7.2, Page 11)
Mounting surface is not even enough	Check the levelness of the bolting surface. (☞ 7.1, Page 10)
Component is broken, e.g. through overloading	Replace the gripper completely.

8.3 Product opens or closes abruptly?

Possible cause	Corrective action
Compressed air lines are blocked	Check the compressed air lines for crushing or damage.

8.4 The gripping force drops?

Possible cause	Corrective action
Compressed air can escape	Check seals, replace product if necessary.
Pressure drops below minimum.	Check the air supply. (☞ 7.2, Page 11)

8.5 Product does not achieve the opening and closing times?

Possible cause	Corrective action
Compressed air lines are not installed optimally.	<p>Check compressed air lines.</p> <p>Inner diameter of the compressed air lines are sufficiently large relative to the compressed air consumption</p> <p>Compressed air lines between module and control valve should be kept as short as possible.</p> <p>Flow rate of valve is sufficiently large relative to the compressed air consumption.</p>

9 Maintenance and care

The hole gripper LOG is not intended for maintenance. Disassembly for maintenance or repair is not possible.

A damaged gripper has to be replaced completely.

10 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: Hole Gripper / LOG 20 - 99 / pneumatic
ID number 0398920 ... 0398999

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, March 2014

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

