SCHUNK

Assembly and Operating Manual PPG-F

2-Finger-parallel-Gripper

Translation of the original manual

Hand in hand for tomorrow

Imprint

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

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Dear Customer,

Thank you for trusting our products and our family-owned company, the leading technology supplier of robots and production machines.

Our team is always available to answer any questions on this product and other solutions. Ask us questions and challenge us. We will find a solution!

Best regards,

Your SCHUNK team

Customer Management
Tel. +49-7133-103-2503
Fax +49-7133-103-2189
cmg@de.schunk.com

Please read the operating manual in full and keep it close to the product.

Table of Contents

1 General

1.1 About this manual

This manual contains important information for a safe and appropriate use of the product.

This manual is an integral part of the product and must be kept accessible for the personnel at all times.

Before starting work, the personnel must have read and understood this operating manual. Prerequisite for safe working is the observance of all safety instructions in this manual.

In addition to these instructions, the documents listed under ▸ 1.1.2 [🗋 6] are applicable.

NOTE: The illustrations in this manual are intended to provide a basic understanding and may deviate from the actual version.

1.1.1 Presentation of Warning Labels

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

⚠ DANGER

Dangers for persons!

Non-observance will inevitably cause irreversible injury or death.

⚠ WARNING

Dangers for persons!

Non-observance 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.

1.1.2 Applicable documents

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

The documents labeled with an asterisk (*) can be downloaded from **schunk.com**.

1.1.3 Variants

This operating manual applies to the following variations:

- PPG-F without gripping force maintenance
- PPG-F with gripping force maintenance

1.2 Warranty

If the product is used as intended, the warranty is valid for 24 months from the ex-works delivery date under the following conditions:

- Observe the specified maintenance and lubrication intervals
- Observe the ambient conditions and operating conditions

Parts touching the workpiece and wear parts are not included in the warranty.

1.3 Scope of delivery

The scope of delivery includes

- 2-Finger-parallel-Gripper PPG-F in the version ordered (without top jaws and without proximity switch)
- 2 O-rings Ø 4 x 1.5 mm Pos. 35 for PPG-F 65
- 2 O-rings Ø 3 x 1 mm Pos. 35 for PPG-F 40 and 80

1.4 Accessories

A wide range of accessories are available for this product

For information regarding which accessory articles can be used with the corresponding product variants, see catalog data sheet.

1.4.1 Sensors

Designation	Type
Inductive proximity switches	IN

- Exact type designation of the compatible sensors see catalog.
- Information on handling sensors is available at schunk.com or from SCHUNK contact persons.

1.4.2 Seal kit lists

Tab.: PPG-F 40 Id.-No. 0370539

Item	ID number	Designation	Quantity
17	9610092	Square ring AS568A NBR 70 26.70 x 1,78 mm 4023	1
19	9610023	Square ring AS568A NBR 70 25.07 x 2.62 mm 4120	1
20	9610111	Square ring AS568A NBR 70 8.20 x 1.78 mm 4012A	1
35	9611054	O-ring DIN 3771 NBR 70 3.00 x 1.00 mm	2

Tab.: PPG-F 65 Id.-No. 0370540

Item	ID number	Designation	Quantity
17	9611133	O-ring DIN 3771 NBR 70 28.00 x 2.00 mm	1
19	9610024	Square ring AS586A NBR 70 26.64 x 2.62 mm 4121	1
20	9610111	Square ring AS568A NBR 70 8.20 x 1.78 mm 4012A	1
35	9611112	O-ring DIN 3771 NBR 70 4.00 x 1.50 mm	2

Tab.: PPG-F 80 Id.-No. 0370541

Item	ID number	Designation	Quantity
17	9611132	O-ring DIN 3771 NBR 70 40.00 x 2.50 mm	1
19	9610028	Square ring AS568A NBR 70 39.34 x 2.62 mm 4129	1
20	9610099	Square ring AS568A NBR 70 10.20 x 2.62 mm 4111A	1
35	9611054	O-ring DIN 3771 NBR 70 3.00 x 1.00 mm	2

Tab.: PPG-F 80 / 20 Id.-No. 0370542

Item	ID number	Designation	Quantity
17	9611132	O-ring DIN 3771 NBR 70 40.00 x 2.50 mm	1
19	9610028	Square ring AS568A NBR 70 39.34 x 2.62 mm 4129	2
20	9610099	Square ring AS568A NBR 70 10.20 x 2.62 mm 4111A	2
24	9611023	O-ring DIN 3771 NBR 70 41.00 x 1.78 mm	1
27	9611112	O-ring DIN 3771 NBR 70 4.00 x 1.50 mm	2
35	9611112	O-ring DIN 3771 NBR 70 4.00 x 1.50 mm	2

contents of the sealing kit, Assembly drawing.

2 Basic safety notes

2.1 Intended use

The product is designed exclusively for gripping and temporarily holding workpieces or objects.

- The product may only be used within the scope of its technical data, ▶ 3 [🗋 16].
- The product is intended for installation in a machine/ automated system. The applicable guidelines for the machine/ automated system must be observed and complied with.
- The product is intended for industrial and industry-oriented use. Its use outside enclosed spaces is only permitted if suitable protective measures are taken against outdoor exposure. The product is not suitable for use in salty air.
- The product can be used within the permissible load limits and technical data for holding workpieces during simple machining operations, but is not a clamping device according to EN 1550:1997+A1:2008.
- Appropriate use of the product includes compliance with all instructions in this manual.
- Any utilization that exceeds or differs from the appropriate use is regarded as misuse.

2.2 Not intended use

It is not intended use if the product is used, for example, as a pressing tool, stamping tool, lifting gear, guide for tools, cutting tool, clamping device or a drilling tool.

- Any utilization that exceeds or differs from the appropriate use is regarded as misuse.

2.3 Constructional changes

Implementation of structural changes

By conversions, changes, and reworking, e.g. additional threads, holes, or safety devices can impair the functioning or safety of the product or damage it.

- Structural changes should only be made with the written approval of SCHUNK.

2.4 Spare parts

Use of unauthorized spare parts

Using unauthorized spare parts can endanger personnel and damage the product or cause it to malfunction.

- Use only original spare parts or spares authorized by SCHUNK.

2.5 Gripper fingers

Requirements of gripper fingers

Accumulated energy can make the product unsafe and risk the danger of serious injuries and considerable material damage.

- Execute the gripper fingers in such a way that the product reaches either the "open" or "closed" position in a de-energized state.
- Only change gripper fingers if no residual energy can be released.
- Make sure that the product and the top jaws are a sufficient size for the application.

2.6 Ambient conditions and operating conditions

Required ambient conditions and operating conditions

Incorrect ambient and operating conditions can make the product unsafe, leading to the risk of serious injuries, considerable material damage and/or a significant reduction to the product's life span.

- Make sure that the product is used only in the context of its defined application parameters, ▶ 3 [🗋 16].
- Make sure that the product is 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.

2.7 Personnel qualification

Inadequate qualifications of the personnel

If the personnel working with the product is not sufficiently qualified, the result may be serious injuries and significant property damage.

- All work may only be performed by qualified personnel.
- Before working with the product, the personnel must have read and understood the complete assembly and operating manual.
- Observe the national safety regulations and rules and general safety instructions.

The following personal qualifications are necessary for the various activities related to the product:

Trained electrician Due to their technical training, knowledge and experience, trained electricians are able to work on electrical systems, recognize and avoid possible dangers and know the relevant standards and regulations.

Qualified personnel Due to its technical training, knowledge and experience, qualified personnel is able to perform the delegated tasks, recognize and avoid possible dangers and knows the relevant standards and regulations.

Instructed person Instructed persons were instructed by the operator about the delegated tasks and possible dangers due to improper behaviour.

Service personnel of the manufacturer Due to its technical training, knowledge and experience, service personnel of the manufacturer is able to perform the delegated tasks and to recognize and avoid possible dangers.

2.8 Personal protective equipment

Use of personal protective equipment

Personal protective equipment serves to protect staff against danger which may interfere with their health or safety at work.

- When working on and with the product, observe the occupational health and safety regulations and wear the required personal protective equipment.
- Observe the valid safety and accident prevention regulations.
- Wear protective gloves to guard against sharp edges and corners or rough surfaces.
- Wear heat-resistant protective gloves when handling hot surfaces.
- Wear protective gloves and safety goggles when handling hazardous substances.
- Wear close-fitting protective clothing and also wear long hair in a hairnet when dealing with moving components.

2.9 Notes on safe operation

Incorrect handling of the personnel

Incorrect handling and assembly may impair the product's safety and cause serious injuries and considerable material damage.

- Avoid any manner of working that may interfere with the function and operational safety of the product.
- Use the product as intended.
- Observe the safety notes and assembly instructions.
- Do not expose the product to any corrosive media. This does not apply to products that are designed for special environments.

- Eliminate any malfunction immediately.
- Observe the care and maintenance instructions.
- Observe the current safety, accident prevention and environmental protection regulations regarding the product's application field.

2.10 Transport

Handling during transport

Incorrect handling during transport may impair the product's safety and cause serious injuries and considerable material damage.

- When handling heavy weights, use lifting equipment to lift the product and transport it by appropriate means.
- Secure the product against falling during transportation and handling.
- Stand clear of suspended loads.

2.11 Malfunctions

Behavior in case of malfunctions

- Immediately remove the product from operation and report the malfunction to the responsible departments/persons.
- Order appropriately trained personnel to rectify the malfunction.
- Do not recommission the product until the malfunction has been rectified.
- Test the product after a malfunction to establish whether it still functions properly and no increased risks have arisen.

2.12 Disposal

Handling of disposal

The incorrect handling of disposal may impair the product's safety and cause serious injuries as well as considerable material and environmental harm.

- Follow local regulations on dispatching product components for recycling or proper disposal.

2.13 Fundamental dangers

General

- Observe safety distances.
- Never deactivate safety devices.
- Before commissioning the product, take appropriate protective measures to secure the danger zone.

- Disconnect power sources before installation, modification, maintenance, or calibration. Ensure that no residual energy remains in the system.
- If the energy supply is connected, do not move any parts by hand.
- Do not reach into the open mechanism or movement area of the product during operation.

2.13.1 Protection during handling and assembly

Incorrect handling and assembly

Incorrect handling and assembly may impair the product's safety and cause serious injuries and considerable material damage.

- Have all work carried out by appropriately qualified personnel.
- For all work, secure the product against accidental operation.
- Observe the relevant accident prevention rules.
- Use suitable assembly and transport equipment and take precautions to prevent jamming and crushing.

Incorrect lifting of loads

Falling loads may cause serious injuries and even death.

- Stand clear of suspended loads and do not step into their swiveling range.
- Never move loads without supervision.
- Do not leave suspended loads unattended.

2.13.2 Protection during commissioning and operation

Falling or violently ejected components

Falling and violently ejected components can cause serious injuries and even death.

- Take appropriate protective measures to secure the danger zone.
- Never step into the danger zone during operation.

2.13.3 Protection against dangerous movements

Unexpected movements

Residual energy in the system may cause serious injuries while working with the product.

- Switch off the energy supply, ensure that no residual energy remains and secure against inadvertent reactivation.
- Never rely solely on the response of the monitoring function to avert danger. Until the installed monitors become effective, it must be assumed that the drive movement is faulty, with its

action being dependent on the control unit and the current operating condition of the drive. Perform maintenance work, modifications, and attachments outside the danger zone defined by the movement range.

- To avoid accidents and/or material damage, human access to the movement range of the machine must be restricted. Limit/prevent accidental access for people in this area due through technical safety measures. The protective cover and protective fence must be rigid enough to withstand the maximum possible movement energy. EMERGENCY STOP switches must be easily and quickly accessible. Before starting up the machine or automated system, check that the EMERGENCY STOP system is working. Prevent operation of the machine if this protective equipment does not function correctly.

2.13.4 Protection against electric shock

Possible electrostatic energy

Components or assembly groups may become electrostatically charged. When the electrostatic charge is touched, the discharge may trigger a shock reaction leading to injuries.

- The operator must ensure that all components and assembly groups are included in the local potential equalisation in accordance with the applicable regulations.
- While paying attention to the actual conditions of the working environment, the potential equalisation must be implemented by a specialist electrician according to the applicable regulations.
- The effectiveness of the potential equalisation must be verified by executing regular safety measurements.

2.14 Notes on particular risks

⚠ DANGER

Risk of fatal injury from suspended loads!

Falling loads can cause serious injuries and even death.

- Stand clear of suspended loads and do not step within their swiveling range.
- Never move loads without supervision.
- Do not leave suspended loads unattended.
- Wear suitable protective equipment.

⚠ WARNING

Risk of injury from objects falling and being ejected!

Falling and ejected objects during operation can lead to serious injury or death.

- Take appropriate protective measures to secure the danger zone.

⚠ WARNING

Risk of injury due to unexpected movements!

If the power supply is switched on or residual energy remains in the system, components can move unexpectedly and cause serious injuries.

- Before starting any work on the product: Switch off the power supply and secure against restarting.
- Make sure, that no residual energy remains in the system.

⚠ WARNING

Risk of injury from crushing and impacts!

Serious injury could occur during movement of the base jaw, due to breakage or loosening of the gripper fingers or if the workpiece is lost.

- Wear suitable protective equipment.
- Do not reach into the open mechanism or the movement area of the product.

⚠ WARNING

Risk of injury from sharp edges and corners!

Sharp edges and corners can cause cuts.

- Use suitable protective equipment.

⚠ WARNING

Risk of injury due to spring forces!

Parts are under spring tension on products which clamp using spring force or which have gripping force maintenance. While disassembling components can move unexpectedly and cause serious injuries.

- Disassemble the product cautiously.
- Make sure that no residual energy remains in the system.

⚠ WARNING

Risk of injury from objects falling during energy supply failure

Products with a mechanical gripping force maintenance can, during energy supply failure, still move independently in the direction specified by the mechanical gripping force maintenance.

- Secure the end positions of the product with SCHUNK SDV-P pressure maintenance valves.

3 Technical data

Size	40	65	80
Actuation	pneumatic, compressed air dry, filtered (10 microns) and lubrified		
Operating pressure range [bar]	4,5 – 8		
Operating temperature range [°C]	5 – 60		
Gripping force at 6 bar [N]	400	530	930
Stroke per jaw [mm]	5,0	7,5	10,0
Air consumption [cm^3]	13	20	55
Opening time [s]	0,06	0,09	0,12
Closing time [s]	0,05	0,07	0,10
Weight [kg]	0,2	0,5	0,85
Mass moment of inertia [kg/cm^2]	1	4	10
Noise emission [dB(A)]	≤ 70		

More technical data is included in the catalog data sheet. Whichever is the latest version.

4 Assembly

4.1 Fastening of the gripper

a) 4-thread bores at the bottom:

PPG-F 40	M4
PPG-F 65 / 80	M6

or 2 through holes for screws M6 DIN 912 laterally in the housing (only applies for PPG-F 65 and 80)

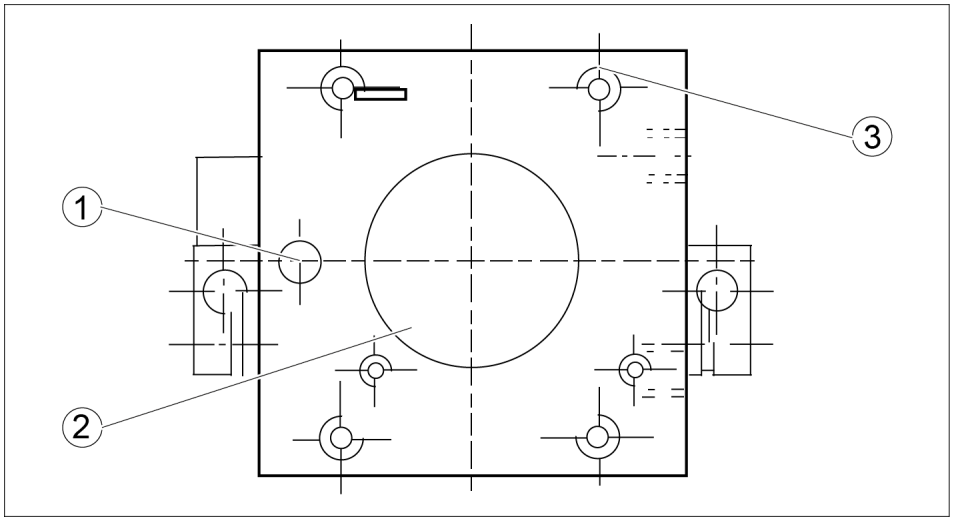
b) For centering, you will find a center bore at the bottom:

PPG-F 40	Ø 20^{H7}
PPG-F 65	Ø 28^{H7}
PPG-F 80	Ø 37^{H7}

and a locating bore:

PPG-F 40/65	Ø 4^{H7}
PPG-F 80	Ø ^{5H7}

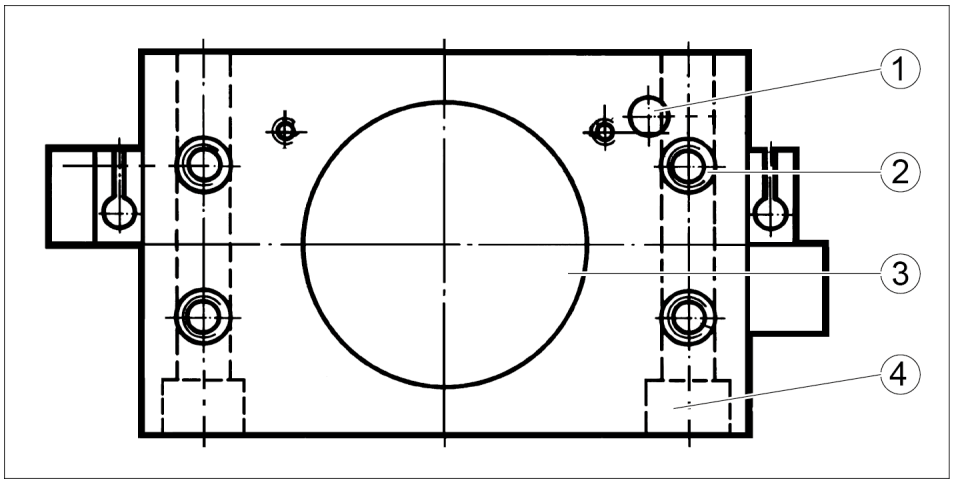
PPG-F 40



Fastening of the gripper

1	Location bore	2	Centering thread	3	Fastening thread

PPG-F 65/80



Fastening of the gripper

1	Location bore	3	Centering bore
2	Fastening thread	4	through hole

4.2 Pneumatic connection

NOTE

- Observe the requirements for the compressed air supply, ▶ 3 [🗋 16].
- In case of compressed air loss (cutting off the energy line), the components lose their dynamic effects and do not remain in a secure position. However, the use of a SDV-P pressure maintenance valve is recommended in this case in order to maintain the dynamic effect for some time. Product variants are also offered with mechanical gripping force via springs, which also ensure a minimum clamping force in the event of a pressure drop.

NOTE

Prior to commissioning, spray the oil into the air connection bores and actuate the gripper several times with a compressed air gun.

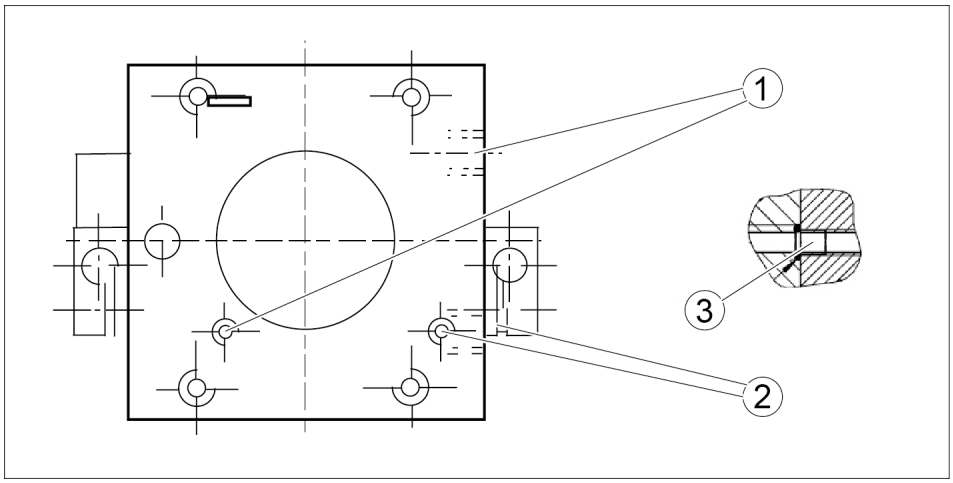
At the side of the housing are two M5 connections (for all types).

Two connections are located in the base:

Size	Connection thread
PPG-F 40	M3
PPG-F 65	M5
PPG-F 80	M3

- In case of hose-free direct connection, use the two O-rings Ø4 x 1.5 mm for M5 or the two O-rings Ø3 x 1 mm M3 from the accessory kit.
- Close the unused air supplies with suitable dummy plugs (M3 and M5).

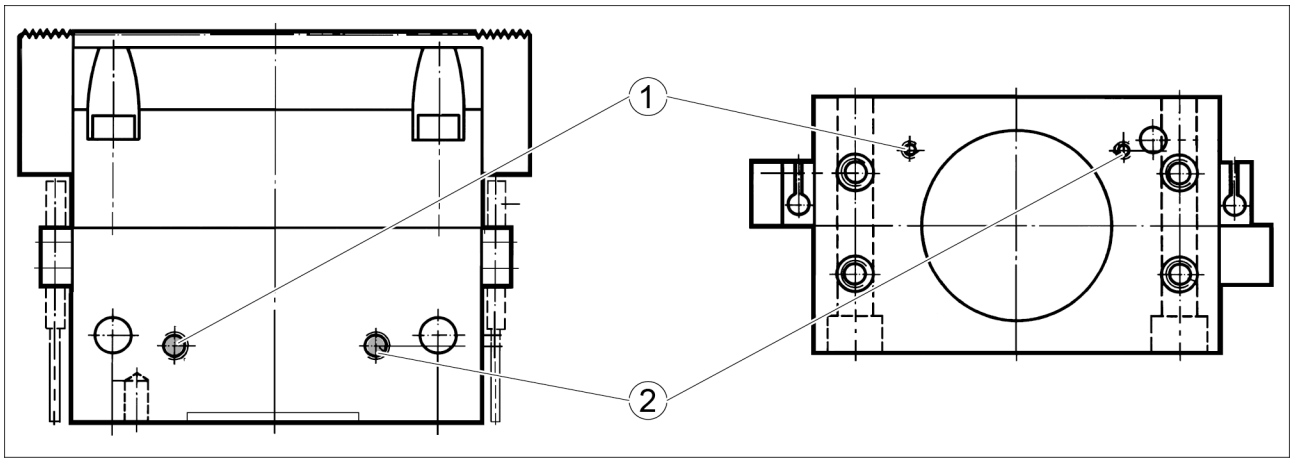
PPG-F 40



Air connection

1	Air connection Gripper open	2	Air connection Gripper closed
3	Detail view Hose-free direct connection		

PPG-F 65/80



Air connection

1	Air connection Gripper open	2	Air connection Gripper closed

4.3 Mounting the sensor

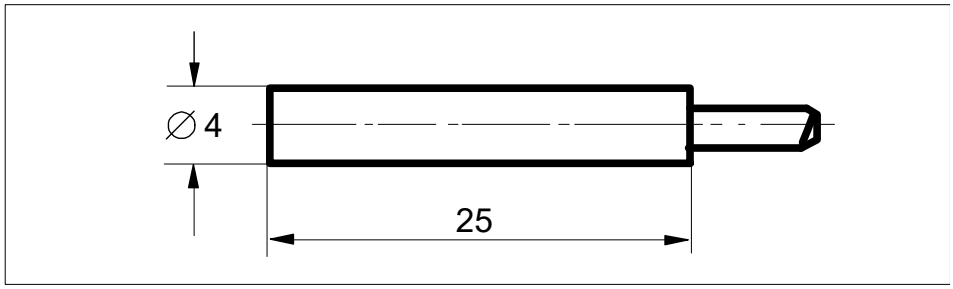
NOTE

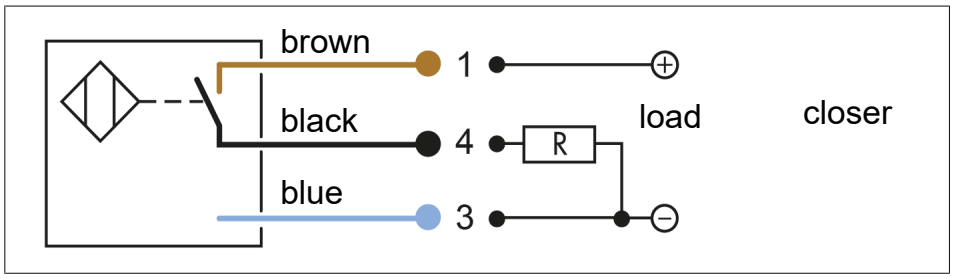
Observe the assembly and operating manual of the sensor for mounting and connecting.

The product is prepared for the use of sensors.

- For the exact type designations of suitable sensors, please see catalog datasheet and Link Übersicht Sensoren.
- For technical data for the suitable sensors, see assembly and operating manual and catalog datasheet.
  - The assembly and operating manual and catalog datasheet are included in the scope of delivery for the sensors and are available at schunk.com.
- Information on handling sensors is available at schunk.com or from SCHUNK contact persons.

4.3.1 IN 40 inductive proximity switch





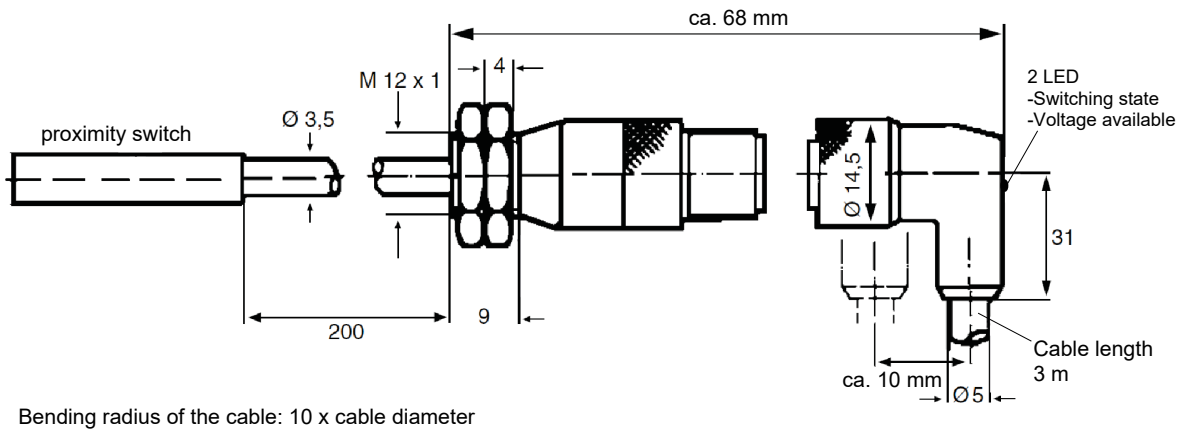
The proximity switch is reverse polarity and circuit protected.

When proper handling of the proximity switch following should be noted:

- Do not pull the cable of the sensor.
- Do not let the sensor dangling at the cable.
- Do not over-tighten screws or terminals.
- Maintain the permissible bending radius of the cable (☞ catalogue).
- Avoid the contact of the proximity switches to hard objects as well as to chemicals, especially nitric-,chrome- and sulphuric acid.

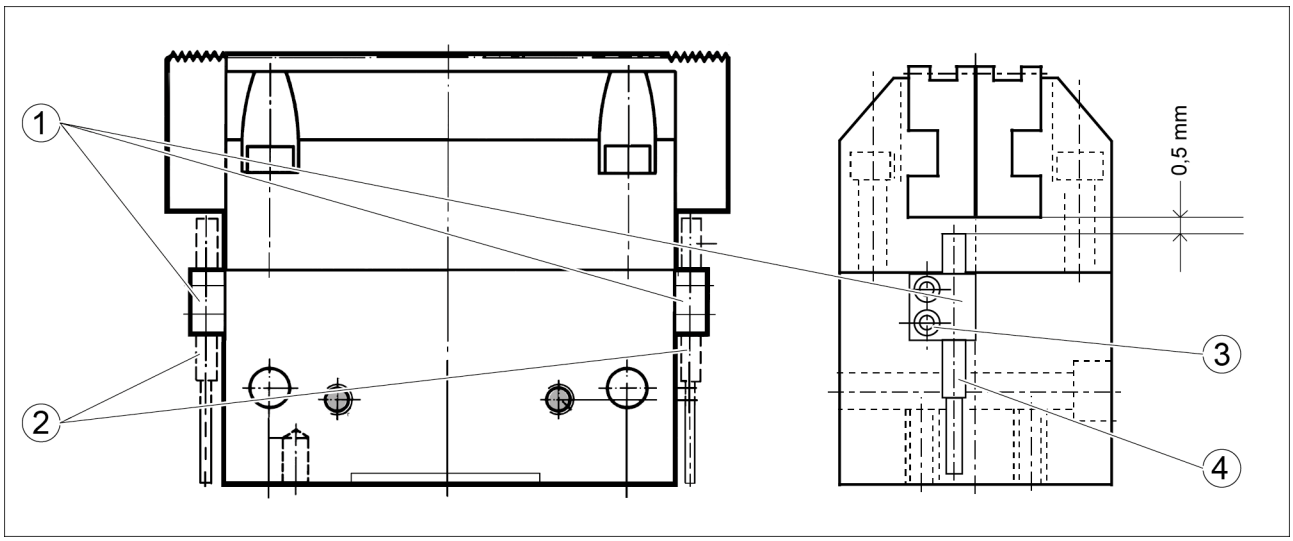
The proximity switch is an electronic component which may be sensitive to high frequency interference or electromagnetic fields.

- Check attachment and installation of the cable. The distance to high frequency interference sources and their supply line must be sufficient.
- The parallel connection of multiple sensor outputs of the same type (npn, pnp) is allowed, but does not increase the permissible load current.
- It should be noted that the leakage current of the individual sensors (about 2 mA) adds itself.



Bending radius of the cable: 10 x cable diameter

Assembly of the proximity switches IN 40



1	Bracket for proximity switch	3	Clamping screw
2	Proximity switches	4	Proximity switch

The switching points of the position "open" and "closed" must be set by the customer.

Gripper open:

1. Put the gripper into "open" position.
2. Carefully move the proximity switch into the bracket, until it contacts the base jaw.
3. Draw back the proximity switch by appr. 0,5 mm.
4. Locate the proximity switch with a clamping screw.
5. Put the gripper into "open" position and control function.

Gripper closed:

1. Put the gripper into "closed" position.
2. Carefully move the proximity switch into the bracket, until it contacts the base jaw.
3. Draw back the proximity switch by appr. 0,5 mm.
4. Locate the proximity switch with a clamping screw.
5. Put the gripper into "closed" position and control function.

5 Maintenance and care

NOTE

The base jaws, the housing and the cover housing are adjusted to each other. For exchange of these components the complete gripperhas to be returned to SCHUNK together with a repair order.

For grippers with "gripping force safety device with spring tension", we recommend to return the gripper for maintenance and exchange of seals to SCHUNK. The piston and the cylinder piston have to be adjusted and assembled with an assembly device.

If this should not be possible, you may do the maintenance work and the exchange of sealings yourself.
For disassembly of the PPG-F with "gripping force safety device with spring tension", see description inthis chapter.
You will find a drawing for construction of a device in chapter "Assembly device" . ▸ 5.6.1 [🗋 28].

5.1 Notes

Original spare parts

Use only original spare parts of SCHUNK when replacing spare and wear parts.

Replacement of the housing and base jaws

The base jaws and the guides in the housing are matched to each other. To replace these parts, send the product to SCHUNK with a repair order.

5.2 Maintenance and lubrication intervals

NOTICE

Material damage due to hardening lubricants!

Lubricants harden more quickly at temperatures above 60°C, leading to possible product damage.

- Reduce the lubricant intervals accordingly.

Size	40 – 80
Interval [Mio. cycles]	2

5.3 Lubricants/Lubrication points

SCHUNK recommends the lubricants listed.

Lubricant point	Lubricant
Metallic sliding surfaces	Rivolta F.L.G. GT-2
All seals	Rivolta F.L.G. GT-2
Bore hole at the piston	Rivolta F.L.G. GT-2

The product contains food-compliant lubricants as standard. **The requirements of standard EN 1672-2:2020 are not fully met.**

During maintenance, treat all greased areas with lubricant. Thinly apply lubricant with a lint-free cloth.

NOTE

- Change contaminated food-compliant lubricant.
- Observe information in the safety data sheet from the lubricant manufacturer.

5.4 Dismantle product

⚠ WARNING

There is a risk of injury to grippers using spring force.

Damaged grippers with "gripping force safety device with spring tension" may have a spring tension inside the housing.

- Special care must be taken when dismantling such units.

Position of the item numbers ▸ 5.7 [🗋 28]

Disassembly of the grippers without "gripping force safety device with spring tension"

1. Remove all air feeding lines.
2. Turn out the screws (12).
3. Draw off the housing.
4. Untighten the screw (13) and remove the cylinder piston (5) and the intermediate disk (6).
5. Mark the position of installation of the piston (3) and of the base jaws in the cover housing.
6. Draw out the components.
7. Remove all sealings.

Disassembly of the gripper with "gripping force safety device with spring tension"

1. Remove the air feedon
2. Carefully clamp the gripper between "a" and "b" see drawing on page 12.
3. Remove all screws (12) and slowly unclamp.
4. Take off the housing. Carefully clamp the gripper between "a" and "c".
5. Remove the screw (13) and slowly unclamp until the spring is in a relaxed position.
6. Mark the position of installation of the piston (3) and of the base jaws in the cover housing.
7. Remove all sealings.

5.5 Maintain product

⚠ WARNING

Risk of injury due to spring forces!

The cover may be ejected due to the high spring forces.

- Dismantle the product carefully.

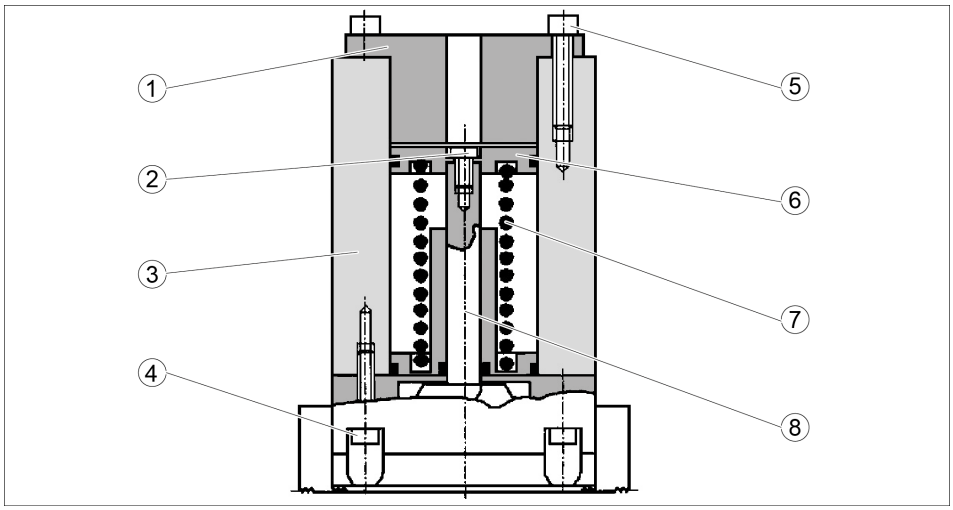
- Clean all parts thoroughly and check for damage and wear.
- Replace all wear parts / seals.
- The seals are in the enclosed sealing kit. ▸ 1.4.2 [🗋 7]
- Treat all greased areas with lubricant. ▸ 5.3 [🗋 25]
- Oil or grease bare external steel parts.

5.6 Assembly product

Assembly takes place in the opposite order to disassembly. Observe the following:

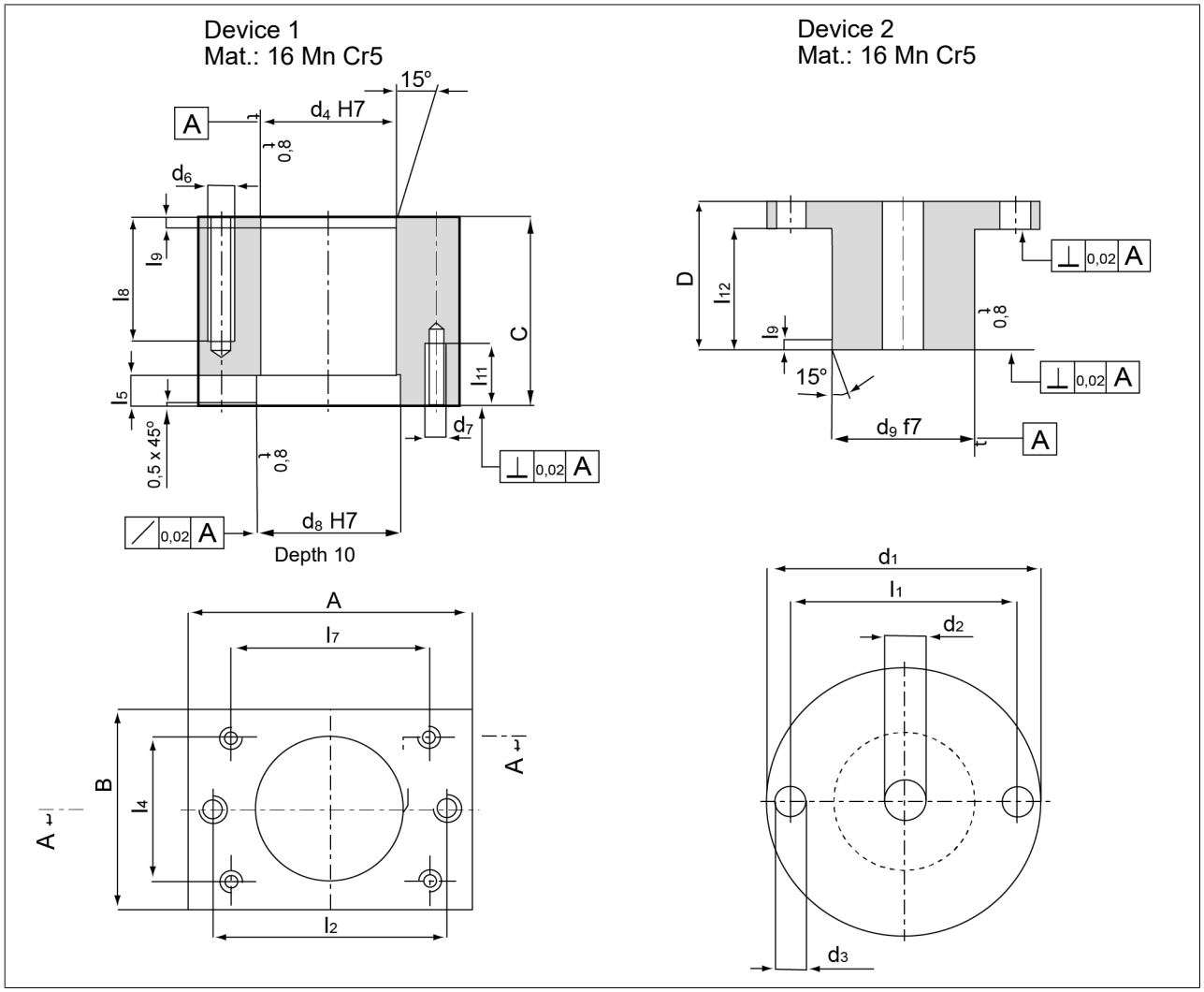
- Grippers with gripping force can only be assembled by an assembly device.
- Unless otherwise specified, secure all screws and nuts with Loctite no. 243 and tighten with the appropriate tightening torque.

Assembly "Gripper with gripping force"

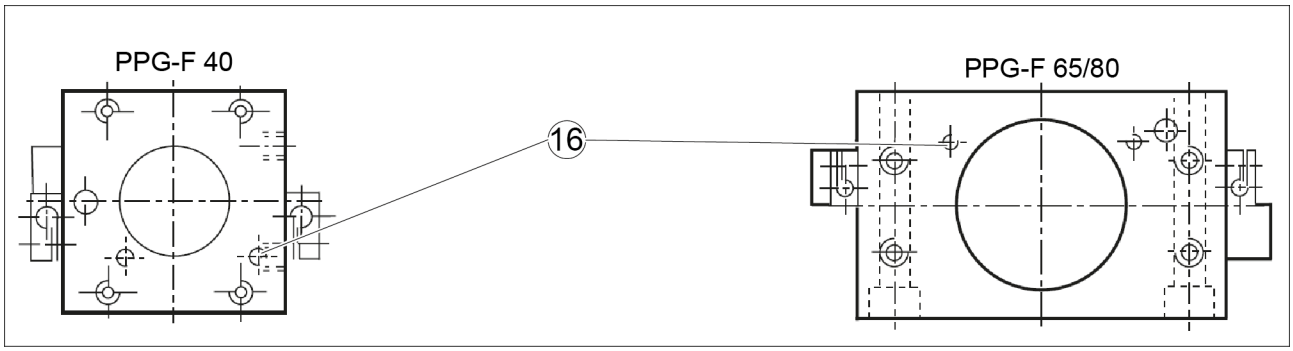


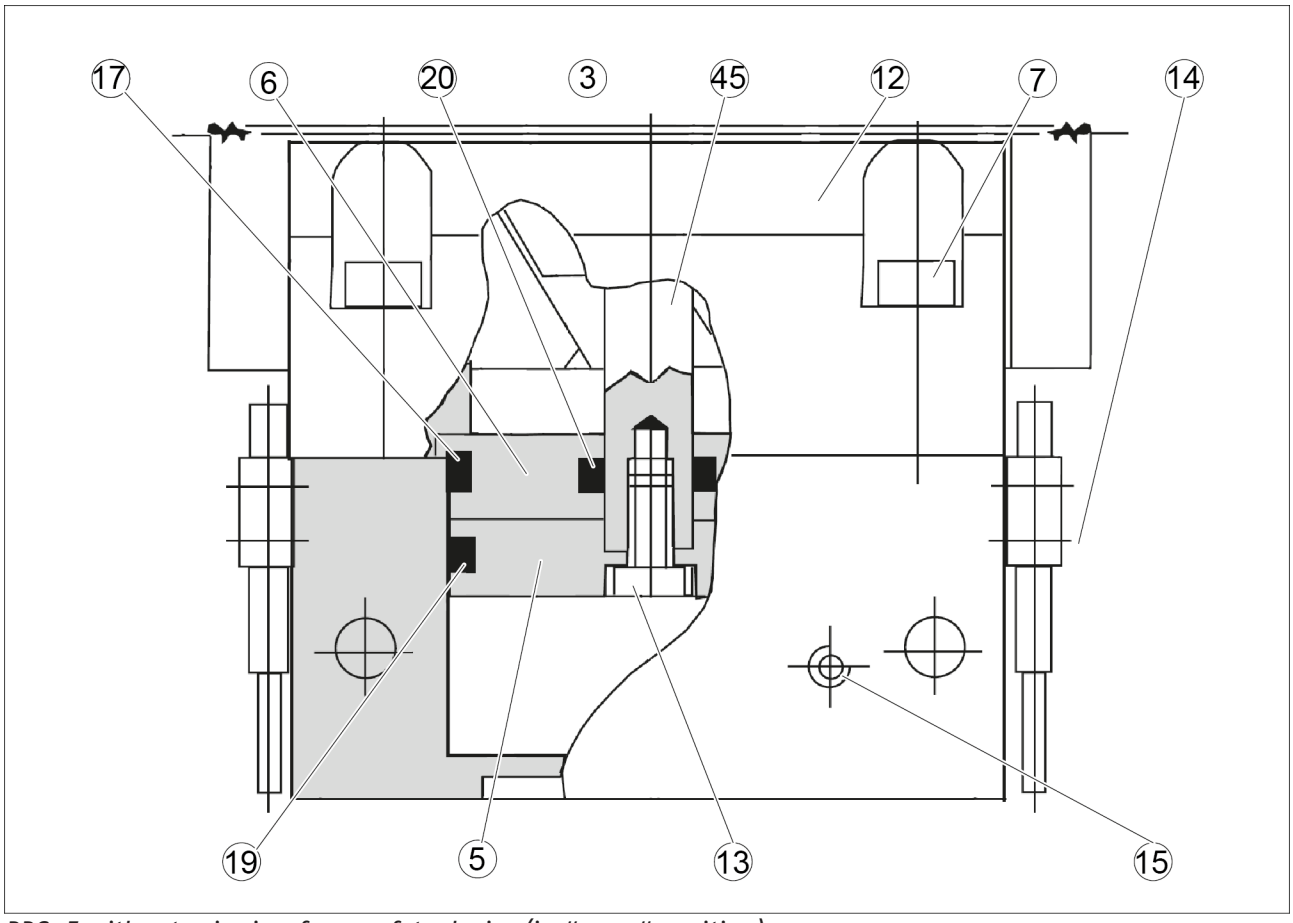
1. Assemble the gripper except for the screws (4) and (2), the spring (7), the cylinder piston (6) and the bottom of the housing.
   The components have to be assembled with an assembly device.
2. Assemble device 1 (3) with screws (4)
3. Grease the center bore.
4. Insert the spring (7) through the center bore in the housing.
5. Locate the cylinder (6) at the center bore and press it manually and evenly into the bore (Caution, do not jam), until it contacts the spring.
6. Insert the screw (2) into the cylinder piston.
7. Use device 2 (1) now and fasten it evenly on device 1 (3) with screws (5)
8. Tighten the screw (2) into the piston (8).
9. Remove the device (1)/(2) and assemble the housing.

5.6.1 Assembly device

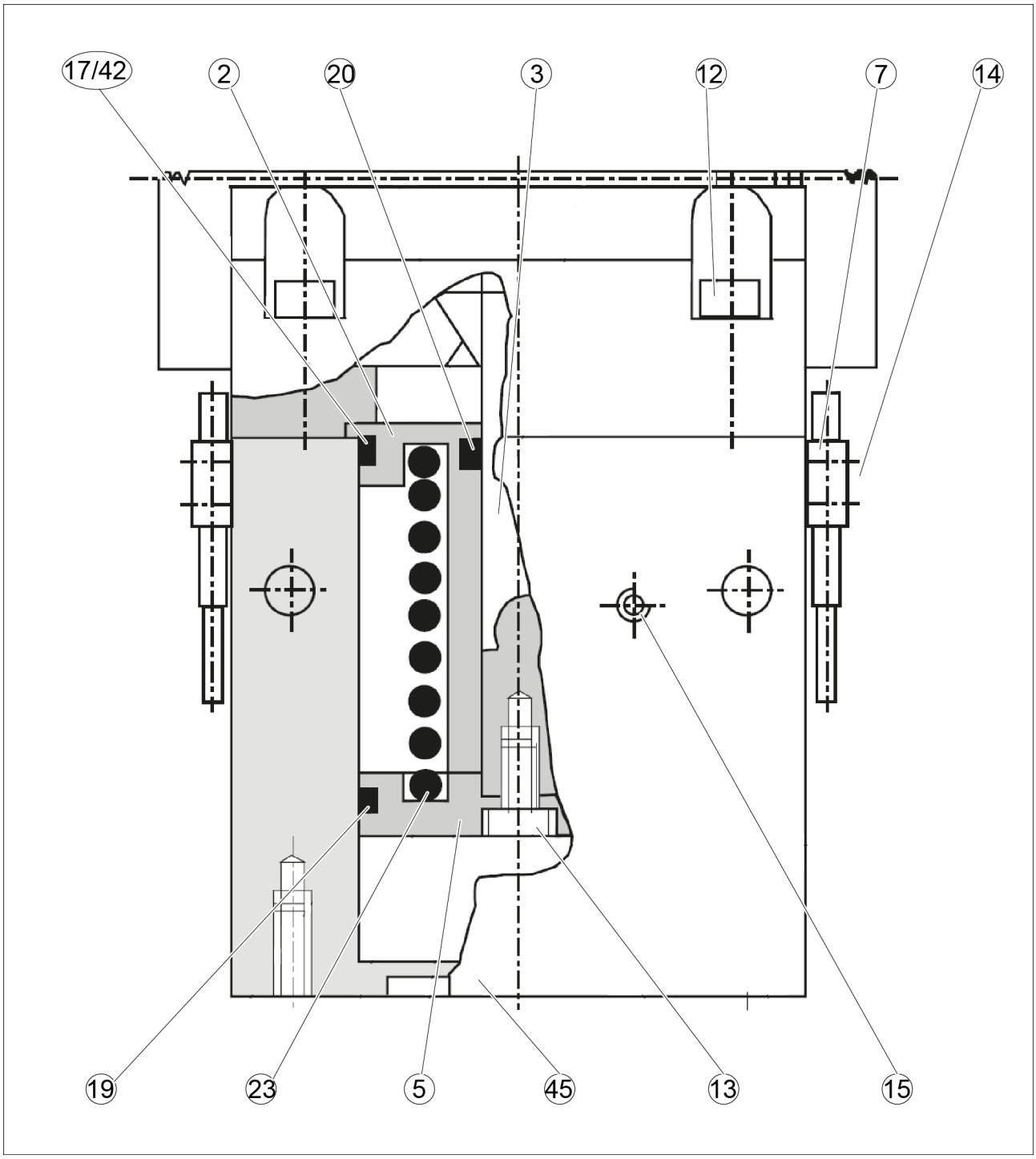


5.7 Assembly drawings





PPG-F without gripping force safety device (in "open" position)



PPG-F with gripping force safety device (in "open" position)

6 Error correction

Fehler	Possible cause /Corrective action
The gripper does not move	• check the air supply. • the air- or control lines are misaligned. • the proximity switch is damaged or misaligned • Air feeding lines, which are not used at the moment, are not closed. • the screws at the piston are broken (overload) • the piston rod is broken (overload)
The gripper does not move the "full" stroke	• Dirt in the guidances or in the groove of the base jaws.
The gripping force reduces	• check the sealings.
The gripper moves jerkily	• the operating pressure is too low. • relubrify the steel guidances.

7 Translation of the 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.

Hersteller/ Inverkehrbringer	SCHUNK GmbH & Co. KG Clamping and gripping technology Bahnhofstr. 106 – 134 D–74348 Lauffen/Neckar

We hereby declare that on the date of the declaration the following partly completed 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 / PPG–F / pneumatic
ID number	0300251...0301525

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

Applied harmonized standards, especially:

EN ISO 12100:2010	Safety of machinery – General principles for design – Risk assessment and risk reduction

The manufacturer agrees to forward on demand the relevant technical documentation for the partly completed machinery in electronic form to national authorities.

The relevant technical documentation according to Annex VII, Part B, belonging to the partly completed machinery, has been created.

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

Signature: see original declaration

Lauffen/Neckar, March 2023

Dr.–Ing. Manuel Baumeister,
Technology & Innovation

8 UKCA declaration of incorporation

in accordance with the Supply of Machinery (Safety) Regulations 2008.

Manufacturer/ Distributor	SCHUNK Intec Limited Clamping and gripping technology 3 Drakes Mews, Crownhill MK8 0ER Milton Keynes

We hereby declare that on the date of the declaration the following partly completed machine complied with all basic safety and health regulations found in the
"Supply of Machinery (Safety) Regulations 2008".
The declaration shall be rendered invalid if modifications are made to the product.

Product designation:	2-Finger-parallel-Gripper / PPG-F / pneumatic
ID number	0300251...0301525

The partly completed machine may not be put into operation until it has been confirmed that the machine into which the partly completed machine is to be installed complies with the provisions of the "Supply of Machinery (Safety) Regulations 2008".

Applied harmonized standards, especially:

EN ISO 12100:2010	Safety of machinery - General principles for design - Risk assessment and risk reduction

The manufacturer agrees to forward on demand the relevant technical documentation for the partly completed machinery in electronic form to national authorities.

The relevant technical documentation according to Annex VII, Part B, belonging to the partly completed machinery, has been created.

Person authorized to compile the technical documentation:
Marcel Machado, address: refer to manufacturer's address

Lauffen/Neckar, March 2023

Dr.-Ing. Manuel Baumeister,
Technology & Innovation

9 Annex to declaration of Incorporation

in accordance with 2006/42/EC, Appendix II, no. 1 B

as well as

in accordance with the Supply of Machinery (Safety) Regulations 2008.

1. Description of the basic safety and health protection requirements, as per 2006/42/EC, Annex I and per the Supply of Machinery (Safety) Regulations 2008, that apply to and are fulfilled for the scope of the incomplete machine:

Product designation	2-Finger-parallel-Gripper
Type designation	PPG-F
ID number	0300251...0301525

Legend:

To be provided by the System Integrator for the overall machine	👤
Fulfilled for the scope of the partly completed machine	✓
Not relevant	⊘

1.1	**Essential Requirements**	
1.1.1	Definitions	✓
1.1.2	Principles of safety integration	✓
1.1.3	Materials and products	✓
1.1.4	Lighting	✓
1.1.5	Design of machinery to facilitate its handling	✓
1.1.6	Ergonomics	✓
1.1.7	Operating positions	👤
1.1.8	Seating	👤
1.2	**Control Systems**	
1.2.1	Safety and reliability of control systems	✓
1.2.2	Control devices	✓
1.2.3	Starting	✓
1.2.4	Stopping	✓
1.2.4.1	Normal stop	✓
1.2.4.2	Operational stop	✓
1.2.4.3	Emergency stop	✓
1.2.4.4	Assembly of machinery	✓
1.2.5	Selection of control or operating modes	✓

1.2	**Control Systems**	
1.2.6	Failure of the power supply	👤
1.3	**Protection against mechanical hazards**	
1.3.1	Risk of loss of stability	👤
1.3.2	Risk of break-up during operation	👤
1.3.3	Risks due to falling or ejected objects	👤
1.3.4	Risks due to surfaces, edges or angles	✓
1.3.5	Risks related to combined machinery	👤
1.3.6	Risks related to variations in operating conditions	👤
1.3.7	Risks related to moving parts	✓
1.3.8	Choice of protection against risks arising from moving parts	👤
1.3.8.1	Moving transmission parts	✓
1.3.8.2	Moving parts involved in the process	👤
1.3.9	Risks of uncontrolled movements	👤
1.4	**Required characteristics of guards and protective devices**	
1.4.1	General requirements	👤
1.4.2	Special requirements for guards	👤
1.4.2.1	Fixed guards	👤
1.4.2.2	Interlocking movable guards	👤
1.4.2.3	Adjustable guards restricting access	👤
1.4.3	Special requirements for protective devices	👤
1.5	**Risks due to other hazards**	
1.5.1	Electricity supply	✓
1.5.2	Static electricity	✓
1.5.3	Energy supply other than electricity	✓
1.5.4	Errors of fitting	✓
1.5.5	Extreme temperatures	👤
1.5.6	Fire	👤
1.5.7	Explosion	👤
1.5.8	Noise	👤
1.5.9	Vibrations	👤
1.5.10	Radiation	⊘
1.5.11	External radiation	⊘

1.5	**Risks due to other hazards**	
1.5.12	Laser radiation	⊘
1.5.13	Emissions of hazardous materials and substances	👤
1.5.14	Risk of being trapped in a machine	⊘
1.5.15	Risk of slipping, tripping or falling	⊘
1.5.16	Lightning	👤
1.6	**Maintenance**	
1.6.1	Machinery maintenance	✓
1.6.2	Access to operating positions and servicing points	✓
1.6.3	Isolation of energy sources	✓
1.6.4	Operator intervention	✓
1.6.5	Cleaning of internal parts	✓
1.7	**Information**	
1.7.1	Information and warnings on the machinery	✓
1.7.1.1	Information and information devices	✓
1.7.1.2	Warning devices	✓
1.7.2	Warning of residual risks	✓
1.7.3	Marking of machinery	⊘
1.7.4	Instructions	⊘
1.7.4.1	General principles for the drafting of instructions	⊘
1.7.4.2	Contents of the instructions	⊘
1.7.4.3	Sales literature	⊘
	The classification from Annex 1 is to be supplemented from here forward.	
2	Supplementary essential health and safety requirements for certain categories of machinery	👤
2.1	Foodstuffs machinery and machinery for cosmetics or pharmaceutical products	👤
2.2	Portable hand-held and/or guided machinery	👤
2.2.1	Portable fixing and other impact machinery	👤
2.3	Machinery for working wood and material with similar physical characteristics	👤
3	Supplementary essential health and safety requirements to offset hazards due to the mobility of machinery	✓
4	Supplementary essential health and safety requirements to offset hazards due to lifting operations	✓

	The classification from Annex 1 is to be supplemented from here forward.	
5	Supplementary essential health and safety requirements for machinery intended for underground work	
6	Supplementary essential health and safety requirements for machinery presenting particular hazards due to the lifting of persons	✓

SCHUNK GmbH & Co. KG
Clamping and gripping technology

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

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