

Assembly and Operating Manual

MPG

2-Finger Parallel-Gripper

Translation of the original manual

Hand in hand for tomorrow

Imprint

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Technical changes:

We reserve the right to make technical improvements.

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Dear Customer

Dear Customer,

Thank you for putting your trust in 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. We look forward to your challenging questions. We will find a solution!

Best regards,

Your SCHUNK team

Customer Management

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

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1 General

1.1 About this Manual

This manual contains important information for the safe, correct use of the product.

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

Personnel must have read and understood this manual before beginning any work. The observance of all safety notes in this manual is the precondition for all safe working.

Besides this manual, other documents which apply are those listed under ▶ 1.1.2 [6].

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

1.1.1 Illustration of safety notes

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



⚠ DANGER

Danger to individuals!

Ignoring a safety note such as this will certainly lead to irreversible injury and even death.



⚠ WARNING

Danger to individuals!

Ignoring a safety note such as this can lead to irreversible injury and even death.



⚠ CAUTION

Danger to individuals!

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/downloads.

1.1.3 Sizes

This manual applies to the following sizes:

- MPG 16
- MPG 20
- MPG 25
- MPG 32
- MPG 40
- MPG 50
- MPG 64
- MPG 80

1.1.4 Variants

This operating manual applies to the following variations:

- MPG without gripping force maintenance
- MPG with gripping force maintenance "O.D. gripping" (AS)
- MPG with gripping force maintenance "I.D. gripping" (IS)
- MPG high-temperature (V/HT)
- MPG-FPS

1.2 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:

- Observance of the specified maintenance and lubrication intervals
- Observance of the ambient conditions and operating conditions

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

1.3 Scope of delivery

The scope of delivery includes:

- 2-Finger Parallel-Gripper MPG in the version ordered
- Assembly and Operating Manual
- Accessory pack

1.3.1 Accessories pack

Contents of the accessory kit:

MPG 20:

- 2 x centering sleeves for mounting

MPG 25 – 64:

- 2 x centering sleeves for mounting
- 2 x O-rings for hose-free direct connection
- 2 x locking screws for hose connections
- **Only MPG 25:** 2 x set-screws

Accessory pack for	ID number	
	MPG	MPG High-temperature (HT)
MPG 16	5522713	5522713
MPG 20	5511369	5511369
MPG 25	5510172	395510172
MPG 32 / 40	5510173	395510173
MPG 50 / 64	5510591	395510591

Tab.: ID.-No. of the accessory pack

1.4 Accessories

A wide range of accessories is 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 Seal kit

Accessory pack for	ID number	
	MPG	MPG High-temperature (HT)
MPG 16	5516929	-
MPG 20	0370865	0370875
MPG 25	0370807	0370876
MPG 32	0370808	0370813
MPG 40	0370809	0370877
MPG 50	0370866	0370878
MPG 64	0370867	0370879
MPG 80	5516930	-

Tab.: ID.-No. of the seal kit

contents of the sealing kit, ► 7.6 [35].

2 Basic safety notes

2.1 Appropriate 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 [15].
- 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 use that exceeds or differs from the appropriate use is regarded as misuse.

2.2 Structural changes

Implementation of structural changes

Modifications, changes or reworking, e.g. additional threads, holes, or safety devices, can damage the product or impair its functionality or safety.

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

2.3 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 and spares authorized by SCHUNK.

2.4 Gripper fingers

Requirements of gripper fingers

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

- Only change gripper fingers if no residual energy can be released.
- Make sure that the product and the gripper finger are sufficient in size for the workpiece.

2.5 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 only used within its defined application parameters, ▶ 3 [15].

2.6 Personnel qualification

Inadequate qualification of personnel

Work on the product by inadequately qualified personnel can lead to serious injuries and considerable material damage.

- Order all work to be performed only by appropriately qualified personnel.
- Personnel must have read and understood the complete manual before beginning any work on the product.
- Observe national accident prevention regulations and the general safety notes.

The following personnel qualifications are required for the various types of work on 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 have been instructed by the user regarding the tasks entrusted to them and the potential dangers of inappropriate behavior.

Manufacturer's service personnel

The manufacturer's service personnel have the specialized training, knowledge, and experience to perform the work entrusted to them and to recognize and avoid potential dangers.

2.7 Personal protective equipment

Use of personal protective equipment

Personal protective equipment serves to protect staff in the event of a danger that 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.

2.8 Notes on safe operation

Incorrect manner of working by personnel

An incorrect manner of working can make the product unsafe and risk the danger of serious injuries and considerable material damages.

- 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. Products for special ambient conditions are excluded.
- Rectify malfunctions as soon as they occur.
- Observe the care and maintenance instructions.
- Observe the current safety, accident prevention, and environmental protection regulations for the application field of the product.

2.9 Transport

Handling during transport

Incorrect handling during transport can make the product unsafe and risk serious injuries and considerable material damage.

- When handling heavy weights, use lifting equipment to lift the product and transport it by appropriate means.
- During transport and handling, secure the product to prevent it from falling.
- Do not walk under suspended loads.

2.10 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.

2.11 Disposal

Handling of disposal

Incorrect handling during disposal can make the product unsafe and risks serious injuries and considerable material and environmental harm.

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

2.12 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.

2.12.1 Protection during handling and assembly

Incorrect handling and assembly

Incorrect handling and assembly can make the product unsafe and pose a risk of serious injuries and considerable material damage.

- Order all work to be performed only by appropriately qualified personnel.
- For all work, secure the product against accidental operation.
- Observe the relevant accident prevention regulations.
- Use suitable assembly and transport equipment and take precautions to prevent jamming and crushing.

Incorrect lifting of 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.

2.12.2 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.

2.12.3 Protection against dangerous movements

Unexpected movements

If the system still retains residual energy, serious injuries can be caused while working on 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 through technical safety measures. The protection 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 commissioning 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.

2.12.4 Protection against electric shock

Possible electrostatic energy

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

- The operator must ensure that all components and assembly groups are included in the local equipotential bonding in line with the applicable regulations.

- The equipotential bonding must be implemented by a specialist electrician in line with the applicable regulations while paying particular attention to the actual conditions in the working environment.
- The effectiveness of the equipotential bonding must be verified by regular safety measurements.

2.13 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 suitable protective measures to secure the danger zone.



⚠ WARNING

Risk of injury from sharp edges and corners!

Sharp edges and corners can cause cuts.

- Wear suitable protective equipment.



⚠ WARNING

Risk of injury due to sudden movements!

If the energy supply is switched on or if residual energy is still present in the system, this can cause components to move unexpectedly, which may result in serious injuries.

- Before starting any work on the product: Switch off the energy supply and secure against re-connection.
- Ensure 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 due to spring forces!

Products that use spring force or have maintenance of gripping force contain parts that are under spring tension. This can cause components to move unexpectedly when being dismantled, which may result in serious injuries.

- Dismantle the product carefully.
- Ensure 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

Designation	MPG
Pressure medium	Compressed air, compressed air quality according to ISO 8573-1:2010 [7:4:4]
Nominal working pressure [bar]	6
Min. pressure [bar] without gripping force maintenance	2 4
Max. pressure [bar] without gripping force maintenance	8 6.5
Noise emission [dB(A)]	≤ 70

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

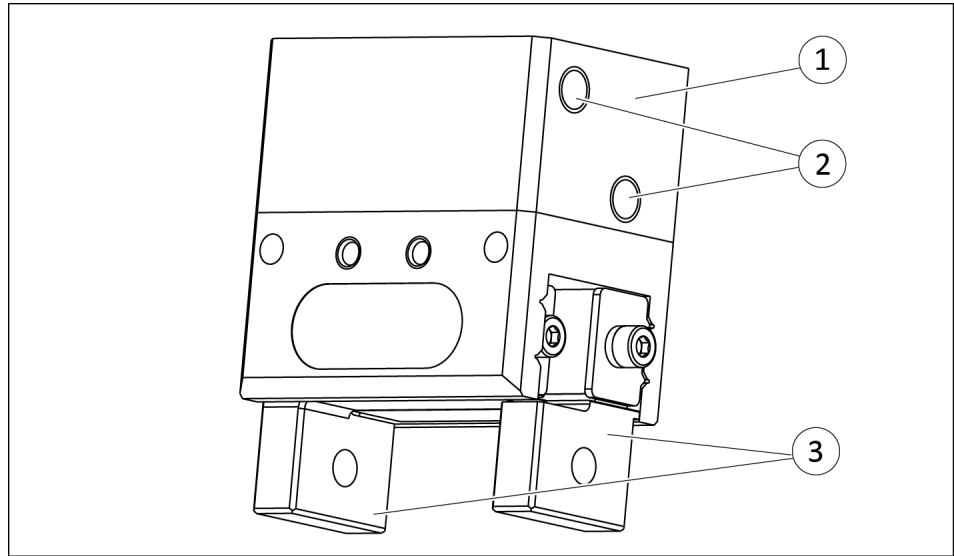
Ambient conditions and operating conditions

Designation	MPG
Ambient temperature [°C] min.	+5
max.	+90
Protection class IP *	30
Noise emission [dB(A)]	≤ 70

* For use in dirty ambient conditions (e.g. sprayed water, vapors, abrasion or processing dust) SCHUNK offers corresponding product options as standard. SCHUNK also offers customized solutions for special applications in dirty ambient conditions.

4 Design and description

4.1 Configuration



2-Finger Parallel-Gripper

- | | |
|---|----------------------|
| 1 | Housing |
| 2 | Main air connections |
| 3 | Base jaws |

4.2 Description

2-finger parallel gripper with smooth roller guides on the base jaws.

5 Assembly

5.1 Assemble and connect



⚠ WARNING

Risk of injury due to sudden movements!

If the energy supply is switched on or if residual energy is still present in the system, this can cause components to move unexpectedly, which may result in serious injuries.

- Before starting any work on the product: Switch off the energy supply and secure against re-connection.
- Ensure that no residual energy remains in the system.

NOTICE

Damage to the gripper possible!

Exceeding the maximum permissible finger weight or the permissible mass moment of inertia of the fingers can damage the gripper.

- Jaw movement must always be impact- and bounce-free.
- If necessary, provide sufficient throttling and/or damping.
- Observe the information in the catalog data sheet.

NOTE

- Observe the requirements for the compressed air supply, ▶ 3 [15].
- 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.

1. Check the flatness of the mounting surface, ▶ 5.2.1 [18].
2. Only open the required air connections (main connection or direct connection), ▶ 5.2.2 [20].
3. Connect the product via the hose-free direct connection.
 - ⇒ Use O-rings from the accessory kit.
 - ⇒ Seal main air connections which are not required with locking screws.
4. OR: Connect compressed air lines to the main air connections, ▶ 5.2.2 [20].
 - ⇒ Screw in air connections (plug connections).
OR: Screw on throttle valve in order to be able to perform sufficient throttling and/or damping.
5. Screw the product to the machine/system, ▶ 5.2.1 [18].
 - ⇒ Use suitable connecting elements (adapter plates) if necessary.
 - ⇒ Observe maximum tightening torque, depth of engagement and if required strength class.
6. Secure the gripper fingers to the base jaws, ▶ 5.2.1 [18].
7. Connect the sensor, see Sensor Assembly and Operating Manual.
8. Mount the sensor, ▶ 5.3 [21].

5.2 Connections

5.2.1 Mechanical connection

Evenness of the mounting surface

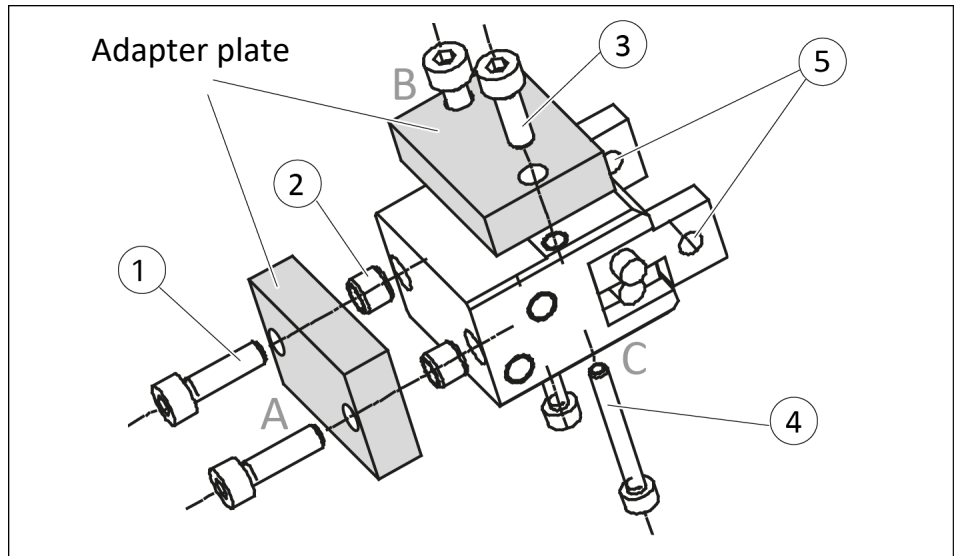
The values apply to the whole mounting surface to which the product is mounted.

Edge length	Permissible unevenness
< 100	< 0.02
> 100	< 0.05

Tab.: Requirements for evenness of the mounting surface (Dimensions in mm)

Connections at the product

The product can be mounted from three sides.
When selecting the mounting screws, observe the values prescribed by SCHUNK, see table below.



Assembly options

Item	Mounting	MPG							
		16	20	25	32	40	50	64	80
Side A									
1	Screw	M2	M2.5	M3	M4	M4	M5	M5	M6
	Max. depth of engagement [mm]	4	6	7.4	8	9	11	11	12.9
2	Centering sleeve [mm]	∅3	∅4	∅5	∅6	∅6	∅8	∅8	∅10
Side B									
3	Screw	M2	M2.5	M3	M4	M4	M5	M5	M6
	Max. depth of engagement [mm]	4	3.5	6	6	8	10	10	13.9
2	Centering sleeve [mm]	∅3	-	-	-	-	-	-	-
Side C									
4	Screw	-	M2x20	M2.5x25	M3x25	M3x30	M4x35	M4x40	M5x55
	Screw according to standard	DIN EN ISO 4762 Max. strength class 8.8							
2	Centering sleeve [mm]	∅3	-	-	-	-	-	-	-
Connections at the base jaws									
5	Bore for mounting screws [mm]	∅2.5	∅3	∅3	∅4	∅4	∅5	∅6	∅8

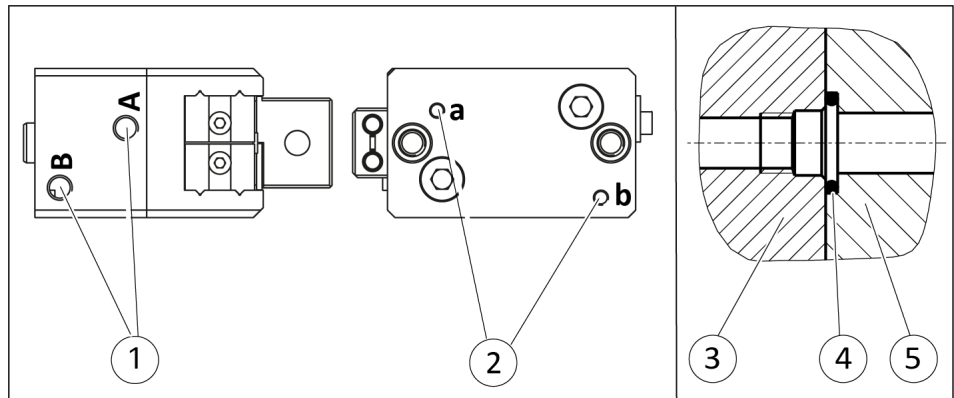
5.2.2 Pneumatic connection

NOTE

The central compressed air supply line must be equipped with a maintenance unit that is positioned as near as possible to the consumer.

NOTE

Only use carbide bits to remove the bottom grub screws.



Compressed air connections

1 Main connections (Hose connection)
(A = open, B = close)

2 Hose-free direct connection at the base
(a = open, b = close)

Hose-free direct connection

3	Product	5	Attachment
4	O-ring		

Item	Mounting	MPG							
		16	20	25	32	40	50	64	80
1	Thread in the main air connections	*	M3	M3	M5	M5	M5	M4	M5
	Max. depth of engagement from locating surface [mm]	-	3	3.5	4.5	5	5	5	5
2	Hose-free direct connection dimensions	-	-	M3	M3	M3	M3	M3	M4

* For this size, the hose clips are pre-assembled at the factory and the compressed air hoses prescribed by SCHUNK must be used, see catalog data sheet. Procedure for leaking compressed air connection, see section "Troubleshooting".

5.3 Installing the sensors

NOTE

When mounting and connecting the sensors, observe the Sensor Assembly and Operating Manual.

The product is prepared for the use of sensors.

- For exact type designations of suitable sensors, see the catalog data sheet and ▶ 5.3.1 [📄 21].
- For technical data on the appropriate sensors, see the installation and operating instructions and the catalog data sheet.
 - The installation and operating instructions and the catalog data sheet are included with the sensor and are available at schunk.com.
- For information on handling sensors, visit schunk.com or contact your SCHUNK representative.

5.3.1 Overview of sensors

Designation	MPG							
	16	20	25	32	40	50	64	80
Inductive proximity switch IN 30	X	–	–	–	–	–	–	–
Inductive proximity switch IN 5	–	–	X	X	X	X	X	X
Inductive proximity switch IN 40	–	X	X	X	X	X	X	X
Flexible position sensor FPS	–	Special housing version			X	X	X	X

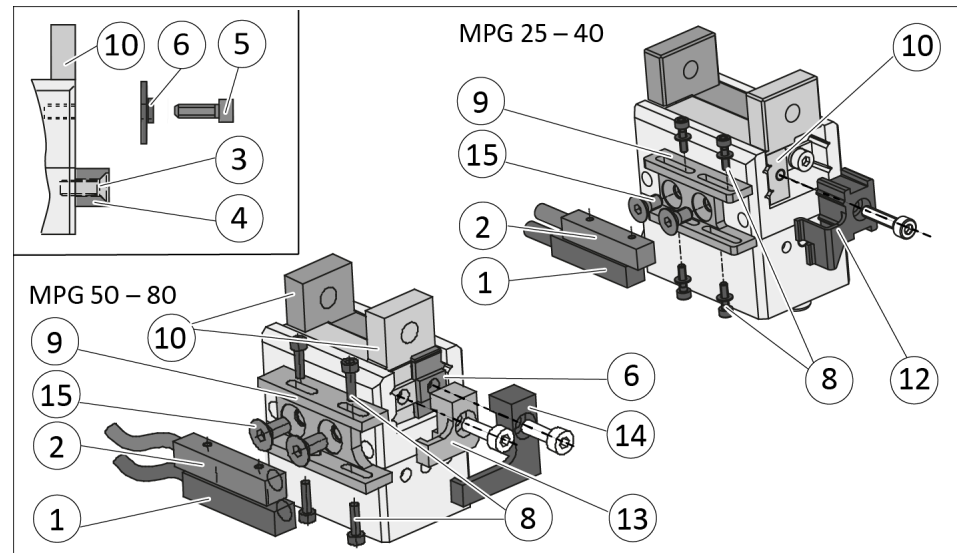
5.3.2 Mounting the inductive proximity switch IN 5

Mounting kit

To use the inductive sensor, the gripper has to be retrofitted with a special mounting kit. This mounting kit is available from SCHUNK for the models below.

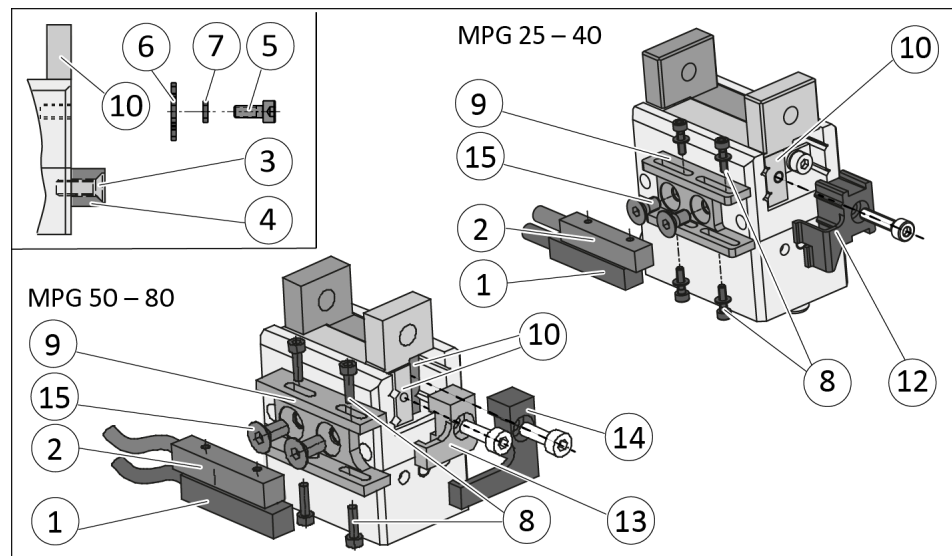
Note: The assembly of the mounting set is different for products up to construction year 12/2015 and from construction year 01/2016.

Up to construction year 12/2015:



1. Loosen screw (3) and remove bracket (4).
2. Secure bracket (9) with screws (15).
3. **MPG 25 - 40:**
 - ⇒ Remove screws (5) and cover (6) on the base jaw (10) next to the bracket (9).
 - ⇒ Secure cam switch (12) to the base jaw (10).
4. **MPG 50 - 80:**
 - ⇒ Remove screws (5) and cover (6) on both base jaws.
 - ⇒ Secure cam switches (13, 14) with the covers (6) to the base jaws.
5. Insert sensors (1, 2) in the bracket (9). Ensure that the buttons are facing in the direction of the cam switch.
6. Secure sensors (1, 2) with screws (8). Tighten screws only slightly.
7. Adjust sensors, see following section.

From construction year 01/2016:



1. Loosen screw (3) and remove bracket (4).
2. Secure bracket (9) with screws (15).
3. **MPG 25 – 40:**
 - ⇒ Remove screws (5), spacer shim (7) and retaining plate (6) on the base jaw (10) next to the bracket (9).
 - ⇒ Secure cam switch (12) to the base jaw (10).
4. **MPG 50 – 80:**
 - ⇒ Remove screws (5), spacer shim (7) and retaining plate (6) on both base jaws (10).
 - ⇒ Secure cam switches (13, 14) to the base jaws (10).
5. Insert sensors (1, 2) in the bracket (9). Ensure that the buttons are facing in the direction of the cam switch.
6. Secure sensors (1, 2) with screws (8). Tighten screws only slightly.
7. Adjust sensors, see following section.

Adjusting the sensors The sensors can be set to the following queries:

Position "opened"

1. Move the gripper into the required position.
2. Push the sensor to the switching lug.
3. Slowly pull the sensor back until it switches. Then retract the sensor further by 0.2 mm.
4. Tighten the screws (8).
5. Query the position "opened" and test the function.

Position "closed"

1. Move the gripper into the required position.
2. Move the sensor into the direction of the switching lug until it switches. Then push the sensor further into the direction of the switching lug by 0.2 mm.
3. Tighten the screws (8).
4. Query the position "closed" and test the function.

Position "Part gripped (O.D. gripping)" or "Part gripped (I.D. gripping)"

1. Part gripped.
2. Move the sensor into the direction of the switching lug until it switches. Then push the sensor further into the direction of the switching lug by 0.2 mm.
3. Tighten the screws (8).
4. Query the position "Part gripped (O.D. gripping)" or "Part gripped (I.D. gripping)" and test the function.

5.3.3 Mounting the inductive proximity switch IN 3, IN 40

Mounting kit

To use the inductive sensor, the gripper has to be retrofitted with a special mounting kit. This mounting kit is available from SCHUNK for the models below.

NOTICE

Risk of damage to the sensor during assembly!

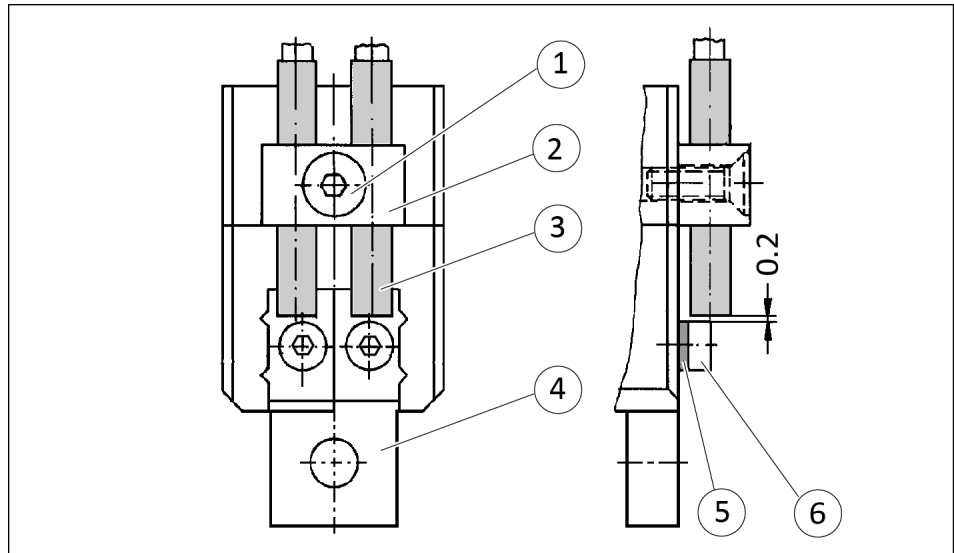
- Observe the maximum tightening torque.

NOTE

The sensors are dampened by the screw heads.

For sizes MPG 25 – 80, a spacer sleeve is also used to monitor "Part gripped" position.

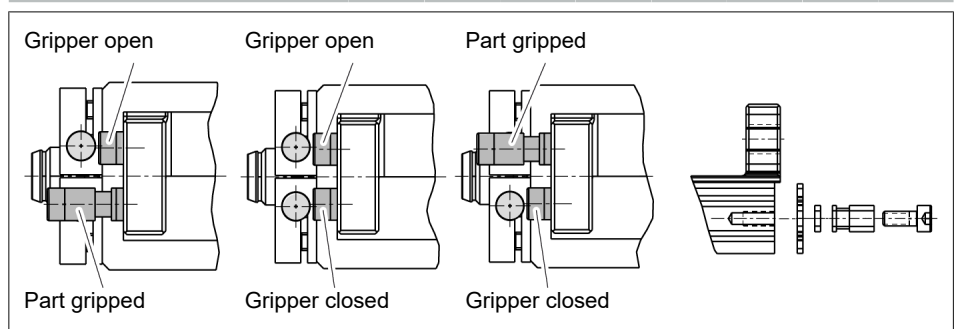
For sizes MPG 16 – 20, it is not possible to monitor "Part gripped" position.



1. For "opened" or "closed" monitoring: secure screw (6) in the base jaw (4).
For tightening torque, see following table.
Mount spacer sleeve (5) on the housing on the side of the main air connections to keep it in the immediate vicinity of the product.
2. For "Part gripped" monitoring: secure spacer sleeve (5) and screw (6) to the base jaw (4).
For tightening torque, see following table.
3. Secure holder (2). Tighten screw (1) only slightly.

Designation	MPG							
	16	20	25	32	40	50	64	80
Maximum tightening torque for the screw item 6 [Ncm]	16	34	34	68	68	68	120	310

Adjusting the sensor



1. Place the product in the desired position.
2. Slide sensor (3) into the holder (2) and set a distance of 0.2 mm to the screw head.
3. Tighten screw (1).
Tightening torque:
MPG 16: 10 Ncm
MPG 20 – 80: 12.5 Ncm
4. Monitor the "opened", "closed" or "part gripped" positions and test the function.

5.3.4 Mounting flexible position sensor FPS

The flexible position sensor FPS consists of a torque sensor system controller and the sensor FPS-S 13.

To operate the sensor for the sizes MPG 20 / 25 / 32, the grippers are available with special housing variants, that are prepared for the attachment of the position sensor FPS-S 13. For these grippers, the position sensor FPS-S 13 is directly mounted on the gripper.

To operate the sensor for the sizes MPG 40 / 50 / 64 / 80, a mounting kit must be mounted on the gripper. This mounting kit is available from SCHUNK. For types that can be ordered, see the catalog data sheet.

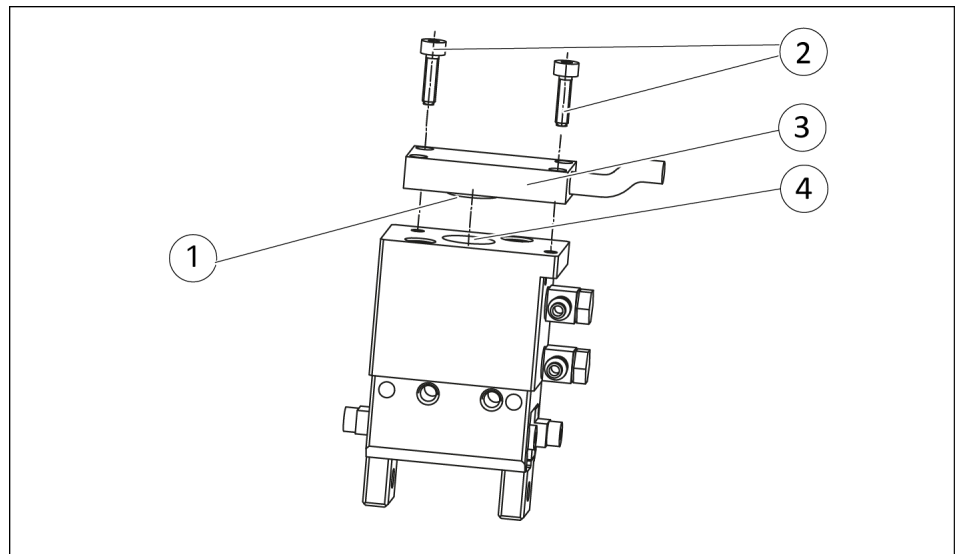
NOTICE

Risk of damage to the sensor during assembly!

- Observe the maximum tightening torque.

Size MPG 20 / 25 / 32

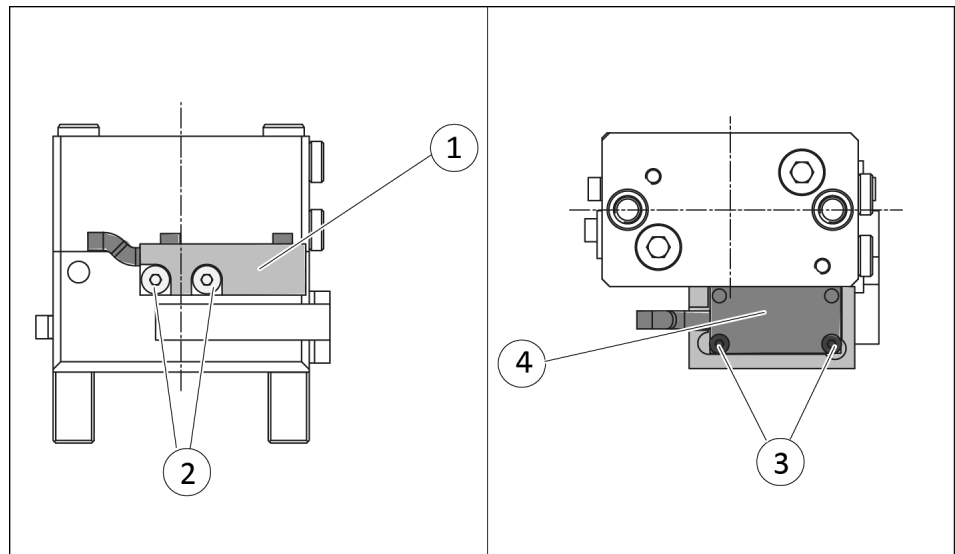
For these sizes, the sensor is mounted directly onto the housing.



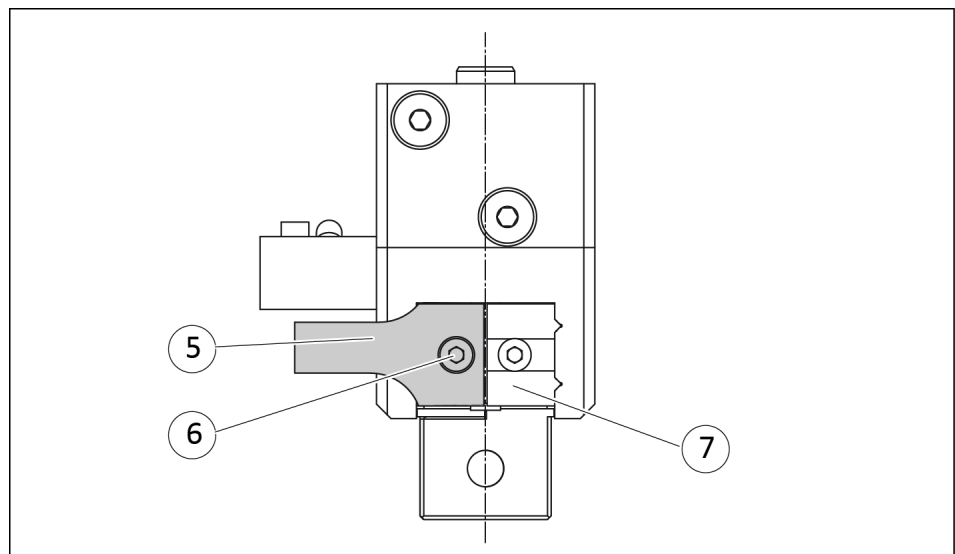
1. Position sensor (3) with the circular elevation (1) in the recess in the housing (4).
2. Secure sensor with screws (2).
Tightening torque: 10 Ncm
3. Connect the torque sensor system controller and adjust the sensor, see sensor assembly and operating manual.

Size MPG 40 / 50 / 64 / 80

For these sizes, a bracket must be mounted. This bracket is available from SCHUNK.



1. Secure bracket (1) with screws (2).
2. Position sensor (4) with the circular elevation in the bore in the bracket (1).
3. Secure sensor (4) with screws (3).
Tightening torque: 10 Ncm



4. **Up to construction year 12/2015:** Secure control cam (5) with screw (6) on the cover (7). Ensure that the magnets are facing towards the sensor surface.
5. **From construction year 01/2016:** Secure control cam (5) with screw (6) on the base jaw. Ensure that the magnets are facing towards the sensor surface.
6. Connect the torque sensor system controller and adjust the sensor, see sensor assembly and operating manual.

6 Troubleshooting

6.1 Product is not moving

Possible cause	Corrective action
Base jaws jam in housing, e.g. mounting surface is not sufficiently even.	Check the evenness of the mounting surface. ▶ 5.2.1 [18]
	Loosen the mounting screws of the product and actuate the product again.
Pressure drops below minimum.	Check air supply. ▶ 5.2.2 [20]
Compressed air lines switched.	Check compressed air lines. ▶ 5.2.2 [20]
Proximity switch defective or set incorrect.	Readjust or change sensor.
Unused air connections open.	Close unused air connections.
Flow control valve closed.	Open the flow control valve.
Component part defective.	Replace component or send it to SCHUNK for repair.

6.2 Product does not execute a complete stroke

Possible cause	Corrective action
Dirt deposits between cover and piston.	Clean and if necessary re-lubricate.
Dirt deposits between basic jaws and guidance.	Disassemble and clean the product.
Pressure drops below minimum.	Check air supply. ▶ 5.2.2 [20]
Mounting surface is not sufficiently flat.	Check the evenness of the mounting surface. ▶ 5.2.1 [18]
Component part defective.	Replace component or send it to SCHUNK for repair.

6.3 Product opens or closes jerkily

Possible cause	Corrective action
Too little grease in the mechanical guiding areas.	Clean and lubricate product.
Compressed air lines blocked.	Check compressed air lines of damage.
Mounting surface is not sufficiently flat.	Check the evenness of the mounting surface.

6.4 Gripping force gets weaker

Possible cause	Corrective action
Compressed air can escape.	Check seals, if necessary, disassemble the product and replace seals.
Too much grease in the mechanical movement space.	Clean and lubricate product.
Pressure drops below minimum.	Check air supply. ▶ 3 [15]
Component part defective.	Replace component or send it to SCHUNK for repair.

6.5 Product does not achieve the opening and closing times

Possible cause	Corrective action
Compressed air lines are not installed optimally.	If present: Open the flow control couplings on the product to the maximum that the movement of the jaws occurs without bouncing and hitting.
	Check compressed air lines.
	Inner diameters of compressed air lines are of sufficient size in relation to compressed air consumption.
	Keep compressed air lines between the product and directional control valve as short as possible.
	Flow rate of valve is sufficiently large relative to the compressed air consumption.
	NOTICE! The one-way flow control valve must not be removed even if the opening and closing times are not achieved.
	If you still cannot achieve the open and close times in the latest catalog, we recommend the use of quick-air-vent-valves directly at the product.

6.6 Compressed air connection is leaking

Possible cause	Corrective action
Wrong hose.	Check hose, see catalog data sheet.
Hose gets wider if it is frequently disassembled/assembled.	Cut off hose, replace if necessary.
Hose gets wider due to external forces.	Fix hose e.g. using cable tie.

7 Maintenance

7.1 Notes

Original spare parts

Only use original SCHUNK spare parts when replacing wearing parts / spare parts.

Replacement of the housing and base jaws

The base jaws and the guides in the housing are matched to each other.

Maintenance variant with maintenance of gripping force I.D. gripping and O.D. gripping

The cylinder piston must be aligned with an assembly device. We therefore recommend you have maintenance work and change of seals performed at SCHUNK.

7.2 Maintenance intervals

NOTICE

Material damage due to hardened lubricants!

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

- Reduce maintenance interval accordingly.

Interval (million cycles) for MPG 16 - 80	Maintenance work
10	Clean all parts thoroughly, check for damage and wear, if necessary replace seals and wearing parts. <ul style="list-style-type: none"> • Notes for disassembly, ▶ 7.4 [32] • Position of the wearing parts, ▶ 7.6 [35] • Seal kit, ▶ 1.4.1 [7]
10	Treat all grease areas with lubricant, ▶ 7.3 [31]
10	Oil or grease external steel parts.

7.3 Lubricants/Lubrication points

During maintenance, treat all greasing areas with lubricant. Apply a thin film of lubricant using a lint-free cloth. SCHUNK recommends the listed lubricants.

Lubricant point	Lubricant
Metallic sliding surfaces	– SCHUNK grease 10
Seals and sealing surfaces	SCHUNK grease 1
Bore hole at the piston	SCHUNK grease 1

Details regarding SCHUNK lubricant designations are available at [schunk.com/lubricants](https://www.schunk.com/lubricants).

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

NOTE

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

7.4 Disassembling and assembling



⚠ WARNING

Risk of burns through contact with hot surfaces!

Surfaces of components can heat up severely during operation. Skin contact with hot surfaces causes severe burns to the skin.

- For all work in the vicinity of hot surfaces, wear safety gloves.
- Before carrying out any work, make sure that all surfaces have cooled down to the ambient temperature.

7.4.1 Variant without gripping force maintenance

Position of the item numbers ▶ 7.6 [□ 35]

Disassembling

NOTE

The following steps are required for lubricating the product and replacing the sealing ring (25).

It is not possible to replace the base jaws (3) and the cover housing (1), since these parts are matched to each other.

1. Remove the compressed air line.
2. Unscrew the screws (18) and remove the housing (2).
3. Unscrew screw (19) and pull off piston (5).
Only for size 20: Piston (5) is screwed directly to the piston rod (4).
Only for FPS variant: Fit set-screw (69), whilst unscrewing the piston (65), ▶ 7.6.2 [□ 37].
4. Unscrew screws (20/21) and take off bracket (8).

NOTE

The needle rollers are suitable only for this product and cannot be replaced with needle rollers belonging to another product of the same type and size.

5. Remove needle rollers (15) and roller cages or cylindrical pins (14).
6. Pull base jaw (3) and the piston rod (4) out of the cover housing (1).

Assembling

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

- Unless otherwise specified, secure all screws and nuts with Loctite no. 243 and tighten with the appropriate tightening torque.
 ▶ 7.5 [□ 35].

7.4.2 Variant with gripping force maintenance for "O.D. Gripping"

Position of the item numbers ▶ 7.6 [35]

Disassembling



⚠ WARNING

Risk of injury due to spring forces!

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

- Dismantle the product carefully.

1. Remove the compressed air lines.
2. **CAUTION! The housing (42) is under spring tension.** Clamp the product between the housing (42) and the cover housing (1).
3. Remove screws (48) and slowly unclamp the spring (41). Remove housing (42).

NOTE

The following steps are required for lubricating the product and replacing the sealing ring (25). It is not possible to replace the base jaws (3) and the cover housing (1), since these parts are matched to each other.

4. Unscrew screw (19) and pull off piston (5).
Only for size 20: Piston (5) is screwed directly to the piston rod (4).
5. Unscrew screws (20/21) and remove bracket (8).
6. Remove needle rollers (15) and roller cages (14).

NOTE

The needle rollers are suitable only for this product and cannot be replaced with needle rollers belonging to another product of the same type and size.

7. Pull base jaw (3) and piston rod (4) out of the cover housing (1).

Assembling

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

- Unless otherwise specified, secure all screws and nuts with Loctite no. 243 and tighten with the appropriate tightening torque.
▶ 7.5 [35].

7.4.3 Variant with maintenance of gripping force (I.D. gripping)

Position of the item numbers ▶ 7.6 [35]

Disassembling



⚠ WARNING

Risk of injury due to spring forces!

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

- Dismantle the product carefully.

1. Remove the compressed air lines.
2. Unscrew the screws (48) and remove the housing (42).

NOTE

The following steps are required for lubricating the product and replacing the sealing ring (25).

It is not possible to replace the base jaws (3) and the cover housing (1), since these parts are matched to each other.

3. **CAUTION! The piston (45) is under spring tension.** Secure piston (45) against springing out uncontrollably and unscrew the screw (19).
4. Release the tension on the spring (41) and remove the piston (45).
Only for size 20: Piston (45) is screwed directly to the piston rod (4).
5. Unscrew screws (20/21) and take off bracket (8).
6. Remove needle rollers (15) and roller cages (14).

NOTE

The needle rollers are suitable only for this product and cannot be replaced with needle rollers belonging to another product of the same type and size.

7. Pull base jaw (3) and the piston rod (4) out of the cover housing (1).

Assembling

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

- Unless otherwise specified, secure all screws and nuts with Loctite no. 243 and tighten with the appropriate tightening torque.
▶ 7.5 [35].

7.5 Tightening torque for screws

Position of the item numbers ▶ 7.6 [📄 35]

Item	MPG							
	16	20	25	32	40	50	64	80
5	-	2.2	-	-	-	-	-	-
18	0.88	0.6	0.6	1.1	2.6	5.1	5.1	8.0
19	0.65	-	0.8	0.8	2.2	2.2	5.9	10.0
20	0.16	0.34	0.34	0.68	0.68	0.68	1.2	3.1
21	0.16	0.34	0.34	0.68	0.68	0.68	1.2	3.1
45	-	2.2	-	-	-	-	-	-
48	0.88	0.6	0.6	1.1	2.6	5.1	5.1	8.0
49	0.65	-	2.7	2.7	4.9	4.9	10	10.0
65	-	2.2	1.3	1.3	-	-	-	-
68	-	0.6	0.6	1.1	-	-	-	-

Tab.: Tightening torque [Nm]

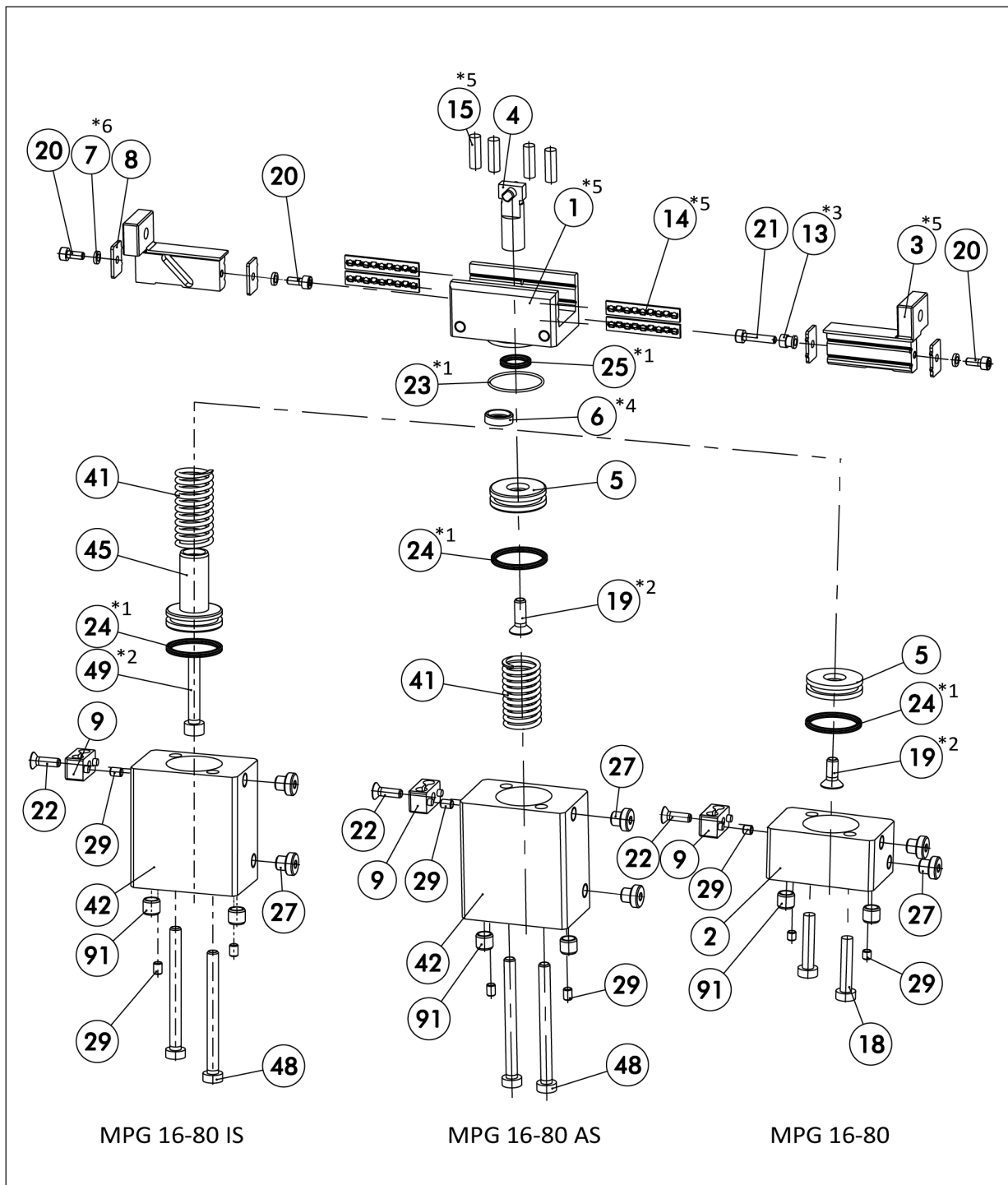
7.6 Drawings

The following figures are example images.

They serve for illustration and assignment of the spare parts.

Variations are possible depending on size and variant.

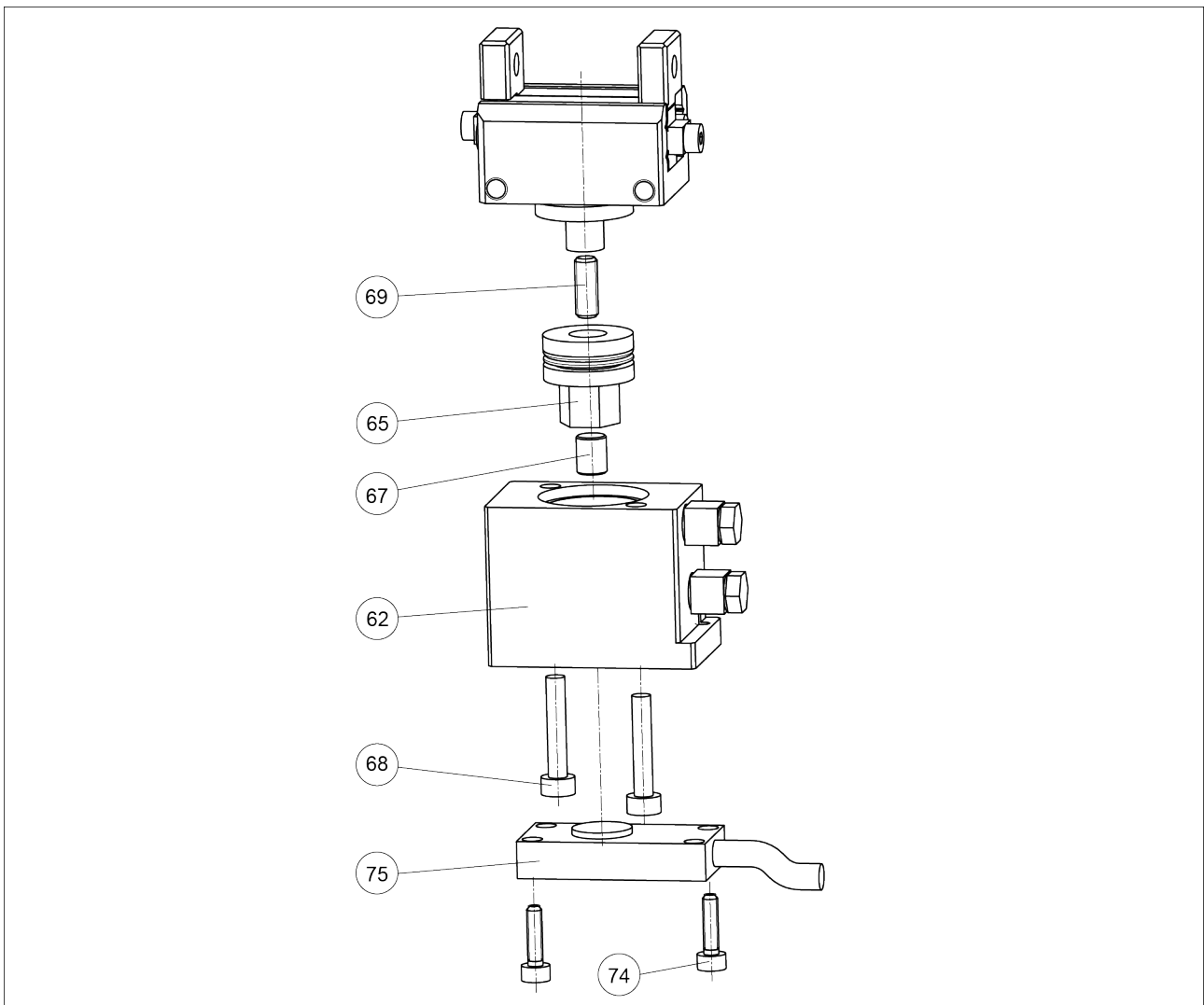
7.6.1 Size 16-80



Drawing size 16 – 80, variant with maintenance of gripping force "I.D. gripping" (IS), "O.D. gripping" (AS) and without maintenance of gripping force

- *1 Wearing part, replace during maintenance.
Included in the seal kit. Seal kit can only be ordered completely.
- *2 Not applicable for size 20
- *3 Not applicable for sizes 16 / 20
- *4 Not applicable for sizes 40-80
- *5 Positions are adapted to each other and can not be replaced by the customer.
- *6 Not applicable for sizes 32 / 40 / 50

7.6.2 FPS variant



Drawing, FPS variant

8 Translation of the original declaration of incorporation

in terms of the Directive 2006/42/EG, Annex II, Part 1 Section B.

Manufacturer/
Distributor SCHUNK SE & Co. KG
Spanntechnik | Greiftechnik | Automatisierungstechnik
Bahnhofstr. 106 – 134
D-74348 Lauffen/Neckar

We hereby declare that the partly completed machine described below

Product designation: 2-Finger Parallel-Gripper / MPG /pneumatic
ID number 0340006 ... 0340071

meets the following basic occupational health and safety of the Machinery Directive 2006/42/EC:

No. 1.1.1, No. 1.1.2, No. 1.1.3, No. 1.1.5, No. 1.3.2, No. 1.5.3, No. 1.5.4, No. 1.5.6, No. 1.5.8, No. 1.5.10, No. 1.5.11, No. 1.5.13

The partly completed machinery may not be put into operation until it has been confirmed that the machine into which the partly completed machinery is to be installed complies with the provisions of the Machinery Directive (2006/42/EC). The declaration shall be rendered invalid if modifications are made to the product.

Applied harmonized standards, especially:

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

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

Person authorized to compile the technical documentation:
Stefanie Walter Address: refer to manufacturer's address

Signature: see original declaration

Lauffen/Neckar, March 2023

Dr.-Ing. Manuel Baumeister,
Head of Systems Engineering,
Technology & Innovation

9 UKCA declaration of incorporation

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

Manufacturer/	SCHUNK Intec Limited
Distributor	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 / MPG / pneumatic
ID number	0340006 ... 0340071

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 special technical documentation according to Annex VII, Part B, belonging to the partly completed machine, 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,
Head of Systems Engineering,
Technology & Innovation



SCHUNK SE & Co. KG
Spanntechnik | Greiftechnik | Automatisierungstechnik

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