SCHUNK


# Assembly and Operating Manual
# KGG 220 – 280
## Gripper for small components

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/downloads**.

### 1.1.3 Sizes

This operating manual applies to the following sizes:

- KGG 220
- KGG 280

### 1.1.4 Variants

This operating manual applies to the following variations:

- KGG
- KGG – high-temperature (V/HT)

## 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

- Gripper for small components KGG in the version ordered
- Safety information (product-specific instructions available online)
- Accessory pack

### 1.3.1 Accessory pack

Content of the accessory pack:

- 4 x screws for mounting
- 2 x centering sleeves for mounting
- 1 x clamping piece
- 2 x O-rings for hose-free direct connection
- 2 x locking screw for hose connection

| Size | ID number |
|---|---|
| KGG 220 | 5510566 |
| KGG 220-high-temperature (V/HT) | 395510566 |
| KGG 280 | 5510567 |
| KGG 280 - high-temperature (V/HT) | 395510567 |

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

## 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 Pochette de joints

| Size | ID number |
|---|---|
| KGG 220 | 0370803 |
| KGG 280 | 0370804 |

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

contents of the sealing kit, ▶ 7.5 [🗋 28].

# 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 [🗋 13].
- 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 Constructional 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 or 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.

- 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.

## 2.5 Environmental 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.

## 2.6 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. |

## 2.7 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.

## 2.8 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.

## 2.9 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.

## 2.10 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**

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.

## 2.12 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 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.

# 3 Technical data

| Designation | KGG |
|---|---|
| Pressure medium | Compressed air, compressed air quality according to ISO 8573-1:2010 [7:4:4] |
| Nominal working pressure [bar] | 6 |
| Min. pressure [bar] | 2.5 |
| Max. pressure [bar] | 8 |

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

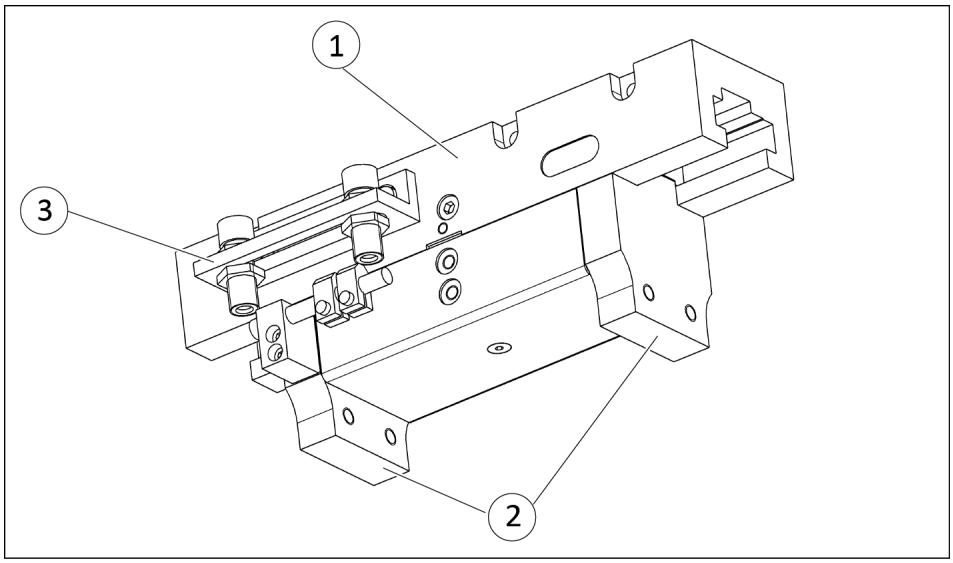
**Ambient conditions and operating conditions**

| Designation | KGG |
|---|---|
| Ambient temperature [°C]<br>min.<br>max. | <br>+5<br>+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 Design




| | | | |
|---|---|---|---|
| 1 | Housing | 3 | Holder for sensors |
| 2 | Base jaw | | |

## 4.2 Description

The KGG is a narrow 2-finger parallel gripper with long stroke.

**Field of application**

for universal use in clean environments with light to medium workpiece weights and a large stroke range.

**Functional description**

The aligned base jaws are actuated with compressed air directly by the fixed piston, which opens and closes them. The base jaws are synchronized by the internal rack and pinion arrangement..

# 5 Assembly

## 5.1 Installing and connecting

**⚠ 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.

***NOTICE***

**Damage to the gripper is possible!**

If the maximum permissible finger weight or the permissible mass moment of inertia of the fingers is exceeded, the gripper can be damaged.

- A jaw movement always has to be without jerks and bounce.
- You must therefore implement sufficient reduction and/or damping.
- Observe the information in the catalog data sheet.

**NOTE**

- Observe the requirements for the compressed air supply, ▸ 3 [🗋 13].
- In case of compressed air loss (cutting off the energy line), the product loses its dynamic effects and does 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.

1. Check the evenness of the mounting surface, ▸ 5.2.1 [🗋 17].
2. Only open the required air connections (main connection or direct connection), ▸ 5.2.2 [🗋 18].
3. Connect the product via the hose-free direct connection.
   - ⇨ Use O-rings from the accessory pack.
   - ⇨ Seal main air connections which are not required with locking screws.
4. OR: Connect compressed air lines to the main air connections "A" and "B".

⇨ 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 [🗋 17].
   ⇨ If necessary, use appropriate connection elements (adapter plates).
6. Secure the gripper fingers to the base jaws, ▸ 5.2.1 [🗋 17].
7. Connect the sensor, see assembly and operating manual of the sensor.
8. Mount the sensor, ▸ 5.3 [🗋 19].

## 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)*

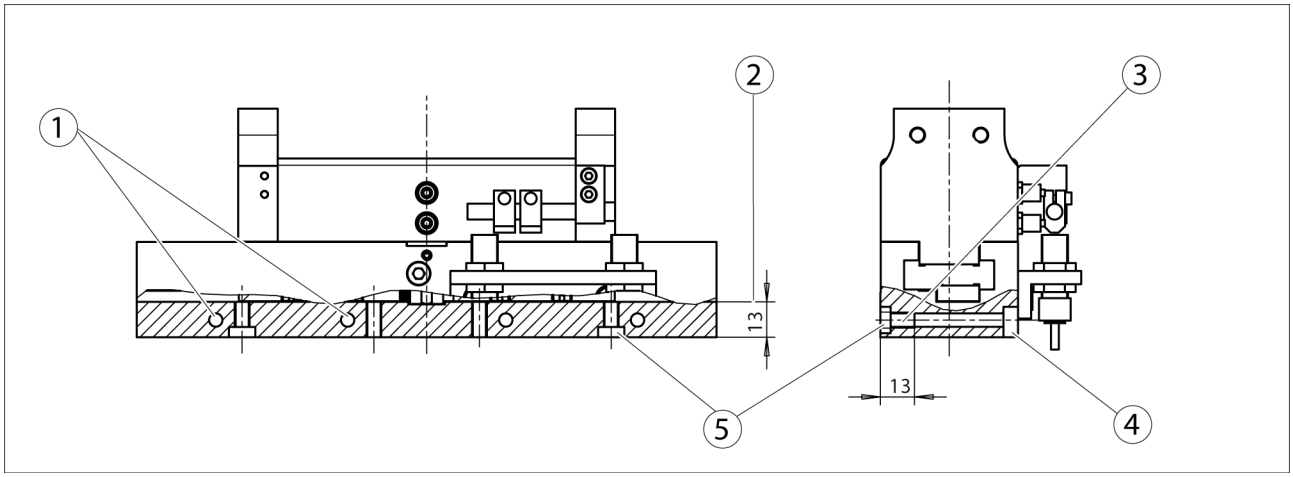
**Mounting of the gripper**

The gripper can be fastened at the side with screws (4). For centering, use the two sleeves (5) from the accessory pack. The mounting of the gripper at the bottom to an adapter plate is done using M6 screws.

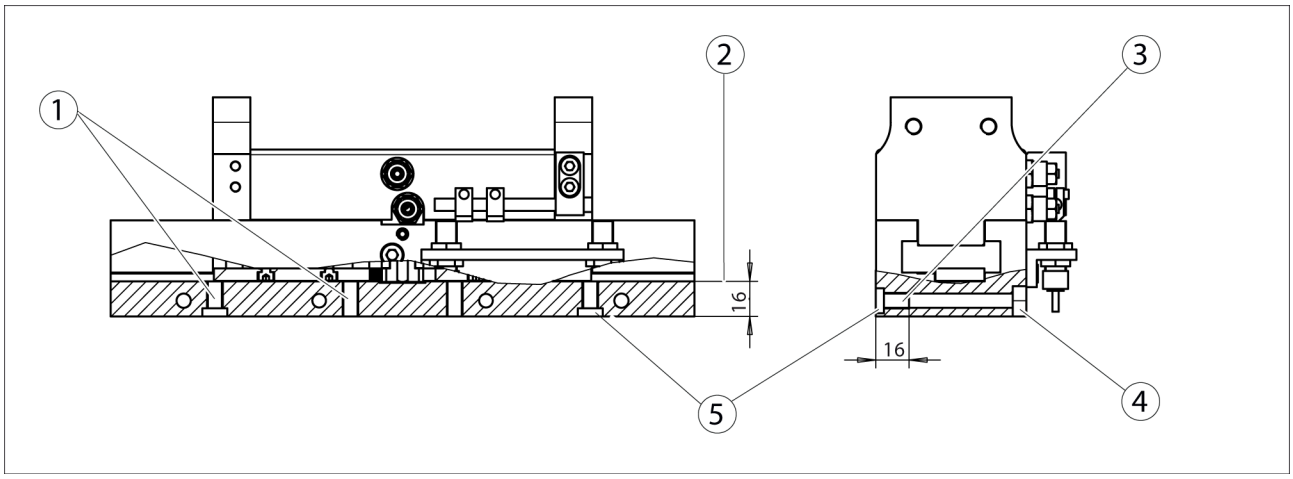
**NOTICE**

**The gripper will be damaged if you exceed the maximum depth of engagement for the mounting screws.**

The depth of engagement of 13 mm (effective thread length, 9 mm) for fastening the base of the gripper absolutely must be observed.




| Item | Designation | KGG 220 |
|---|---|---|
| 1 | Threads for mounting screws | M6 (4x) |
| 2 | Screw-in depth | 13 mm |
| 3 | Threads for mounting screws | M6 x 13 |
| | Effective thread length | 9 mm |
| 4 | Screw according to standard | DIN EN ISO 4762 M5 x 55 (4x) |
| 5 | Centering sleeve | Ø $10^{H7}$ x 4 (2x) |




| Item | Designation | KGG 280 |
|---|---|---|
| 1 | Threads for mounting screws | M8 (4x) |
| 2 | Screw-in depth | 16 mm |
| 3 | Threads for mounting screws | M8 x 16 |
| | Effective thread length | 12 mm |
| 4 | Screw according to standard | DIN EN ISO 4762 M6 x 75 (4x) |
| 5 | Centering sleeve | Ø $12^{H7}$ x 4 (2x) |

**⚠ 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.

### 5.2.2 Pneumatic connection

***NOTICE***

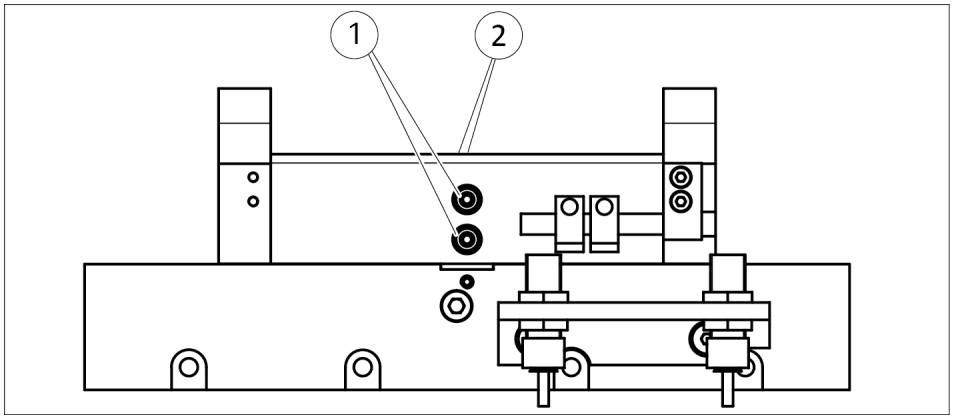
**Damage to the gripper is possible!**

If the maximum permissible finger weight or the permissible mass moment of inertia of the fingers is exceeded, the gripper can be damaged.

- A jaw movement always has to be without jerks and bounce.
- You must therefore implement sufficient reduction and/or damping.
- Observe the information in the catalog data sheet.

**NOTICE**

Observe the requirements for the air supply, ▶ 3 [🗋 13].




| | |
|---|---|
| 1 | Main connections (Hose connection)<br>(A = open, B = close) |
| 2 | Hose-free direct connection at the base<br>(a = open, b = close) |

| Item | Mounting | KGG | |
|---|---|---|---|
| | | 220 | 280 |
| 1 | Thread in the main air connections | M5/5 | G1/8"/11 |
| 2 | Hose-free direct connection at the base | M3 | M5 |

- Open only the air connections that are needed.
- Close unused main air connections using the screw plugs from the enclosed pack.
- For a hose-free direction connection, use the O-rings from the enclosed pack.

## 5.3 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 ▶ 5.3.1 [🗋 20].
- 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.

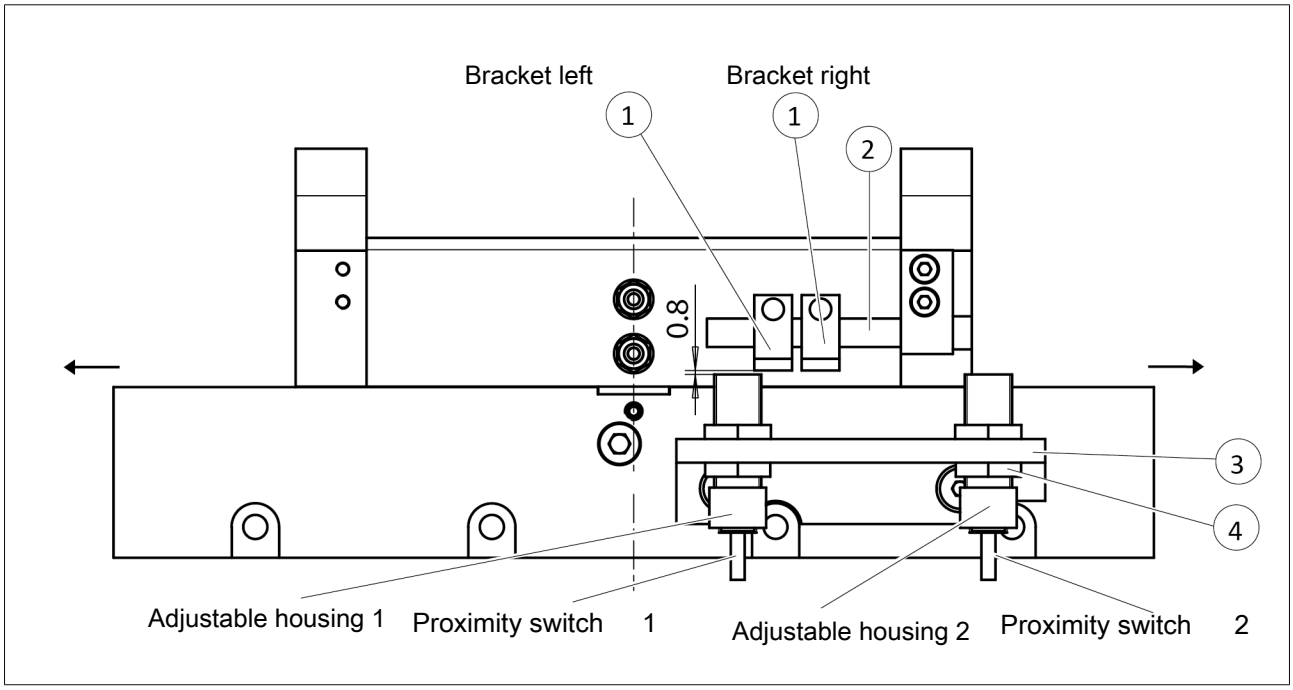
• Information on handling sensors is available at schunk.com or from SCHUNK contact persons.

### 5.3.1 Overview of sensors

| Designation | KGG | |
|---|---|---|
| | 220 | 280 |
| Inductive proximity switch IN 80 | X | X |

### 5.3.2 Mounting inductive proximity switch IN 80

**Mounting and adjusting of the proximity switch**



**Position "Gripper closed"**

1. Set the gripper to position "Gripper closed".
2. Push proximity switch 1 in adjustable housing 1 and secure the proximity switch with the slotted union nut.
3. Insert adjustable housing 1 (with proximity switch 1) into the oblong hole of the bracket (3) and secure it with the counter nut (4) so that a sensing distance of about 0.8 mm is present between the clamping piece and the adjustable housing.
4. Push adjustable housing 1 as far as possible to the left.
5. Connect proximity switch 1.
6. Carefully push adjustable housing 1 in the oblong hole to the right. If the proximity switch is attenuated, push the proximity switch another 0.5 mm or so in the same direction.
7. Carefully tighten the counter nuts (4).
8. Open and close the gripper to test its functioning.

**Position "Gripper open"**

1. Set the gripper to position "Gripper open".
2. Push proximity switch 2 in adjustable housing 2 and secure the proximity switch with the slotted union nut.
3. Insert adjustable housing 2 (with proximity switch 2) into the oblong hole of the bracket (5) and secure it with the counter nut (4) so that a sensing distance of about 0.8 mm is present between the clamping piece and the adjustable housing.
4. Push adjustable housing 2 as far as possible to the right.
5. Connect proximity switch 2.
6. Carefully push adjustable housing 2 in the oblong hole to the left. If the proximity switch is attenuated, push the proximity switch another 0.5 mm or so in the same direction.
7. Carefully tighten the counter nuts (4).
8. Open and close the gripper to test its functioning.

**Position "Part gripped" (O.D. gripping) by a stroke of at least 16 mm***

1. Set the gripper to position "Gripper open".
2. Push proximity switch 1 in adjustable housing 1 and secure the proximity switch with the slotted union nut.
3. Push proximity switch 2 in adjustable housing 2 and secure the proximity switch with the slotted union nut.

4. Insert adjustable housing 1 and 2 (with proximity switch) into the oblong hole of the bracket (3) and secure it with the counter nut (6) so that a sensing distance of about 0.8 mm is present between the clamping piece (1) and the adjustable housing.
5. Push adjustable housing 2 as far as possible to the right.
6. Connect proximity switch 2.
7. Carefully push adjustable housing 2 in the oblong hole to the left. If the proximity switch is attenuated, push the proximity switch another 0.5 mm or so in the same direction.
8. Carefully tighten the counter nuts (4).
9. Open and close the gripper to test its functioning.
10. Put the gripper fingers onto the "Part gripped" position (with workpiece).
11. Push adjustable housing 1 as far as possible to the left.
12. Connect proximity switch 1.
13. Carefully push adjustable housing 1 in the oblong hole to the right. If the proximity switch is attenuated, push the proximity switch another 0.5 mm or so in the same direction.
14. Carefully tighten the counter nuts (4).
15. Open and close the gripper to test its functioning.
16. Proximity switch 1 must not be dampened in the „Gripper closed“ position.

**NOTE**

If the required stroke per finger is less than 16 mm, then this area can be queried with an additional clamping piece. To do this, the second clamping piece is put on the query shaft (2). Now put the clamping pieces into position so that proximity switch 1 is dampened by the left clamping piece and proximity switch 2 is damped by the right clamping piece. The setting of the proximity switch is also done in accordance with the same steps.

**Part gripped (I.D. gripping) by a stroke of at least 16 mm***

1. Set the gripper to position "Gripper closed".
2. Push proximity switch 1 in adjustable housing 1 and secure the proximity switch with the slotted union nut.
3. Push proximity switch 2 in adjustable housing 2 and secure the proximity switch with the slotted union nut.
4. Insert adjustable housing 1 and 2 (with proximity switch) into the oblong hole of the bracket (3) and secure it with the counter nut (4) so that a sensing distance of about 0.8 mm is present between the clamping piece (1) and the adjustable housing.
5. Move adjustable housing 1 as far as possible to the right.
6. Connect proximity switch 1.
7. Carefully push adjustable housing 1 in the oblong hole to the right. If the proximity switch is attenuated, push the proximity switch another 0.5 mm or so in the same direction.
8. Carefully tighten the counter nuts (4) .
9. Open and close the gripper to test its functioning.
10. Put the gripper fingers onto the "Part gripped" position (with workpiece).
11. Push adjustable housing 2 as far as possible to the right.
12. Connect proximity switch 2.
13. Carefully push adjustable housing 2 in the oblong hole to the left. If the proximity switch is attenuated, push the proximity switch another 0.5 mm or so in the same direction.
14. Carefully tighten the counter nuts (4).
15. Open and close the gripper to test its functioning.
16. Proximity switch 2 must not be dampened in the "Gripper open" position.

**NOTE**

If the required stroke per finger is less than 16 mm, then this area can be queried with an additional clamping piece. To do this, the second clamping piece is put on the query shaft (2). Now put the clamping pieces into position so that proximity switch 1 is dampened by the left clamping piece and proximity switch 2 is damped by the right clamping piece. The setting of the proximity switch is also done in accordance with points above.

# 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 [🗋 17] |
| | Loosen the mounting screws of the product and actuate the product again. |
| Pressure drops below minimum. | Check air supply. ▸ 5.2.2 [🗋 18] |
| Compressed air lines switched. | Check compressed air lines. ▸ 5.2.2 [🗋 18] |
| 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 is not executing the 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 [🗋 18] |
| Mounting surface is not sufficiently flat. | Check the evenness of the mounting surface. ▸ 5.2.1 [🗋 17] |
| Component part defective. | Replace component or send it to SCHUNK for repair. |

## 6.3 Product opens or closes abruptly

| Possible cause | Corrective action |
|---|---|
| Too little grease in the mechanical guiding areas. | Clean and lubricate product. ▸ 7 [🗋 26] |
| Compressed air lines blocked. | Check compressed air lines of damage. |
| Mounting surface is not sufficiently flat. | Check the evenness of the mounting surface. |
| One-way flow control valve is missing or adjustet incorrectly. | Install and adjust one-way flow control valve. |
| Loading too large. | Check permissible weight and length of the gripper fingers. |

## 6.4 Gripping force is dropping

| 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.<br>▶ 3 [🗋 13] |
| 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 throttle check valve must not be removed, even if the product has not reached the opening and closing times.** |
| | 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. |
| Loading too large. | Check permissible weight and length of the gripper fingers. |

# 7 Maintenance

## 7.1 Notes

**⚠ WARNING**

**Risk of injury from electric shock due to contact with live parts!**

- Before starting any work: Disconnect the power supply from the mains and secure against accidental switch-on.
- Work may only be performed by appropriately qualified personnel.

**Original spare parts**

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

## 7.2 Maintenance interval

***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.

| | |
|---|---|
| Interval [Mio. cycles] | 2 |

## 7.3 Lubricants/Lubrication points

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

SCHUNK recommends the lubricants listed.

| Lubricant point | Lubricant |
|---|---|
| Metallic sliding surfaces | SCHUNK grease 3 |
| 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**.

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 Disassembly and assembly

### 7.4.1 Disassembling

Position of the item numbers ▶ 7.5 [🗋 28]

1. Remove pressure lines.
2. Unscrew and remove the screws (35) and remove holder (21) with the proximity switches.
3. Completely unscrew the air connections (43) with a suitable wrench (open-ended or box wrench).
4. Remove the screws (40) and take off the cover (10).
5. Manually push the gripper fingers (3) all the way apart (open gripper position).
6. Completely screw out the screws (33).
7. Carefully pull out the gripper fingers (3) to the side.
8. Pull the quad rings (24) off the piston (6).
9. Remove the O-rings (25) from the covers (7).
10. Turn the pistons (6) from the piston rod (2).
11. Pull the cover (7) from the piston rod (2).
12. Remove the quad rings (23) from the covers (7).
13. Release the set-screw (34) and screw out about 2 mm.
14. Remove the screws (38).
15. Pull the piston rod (2) carefully out of the housing (1).
    **NOTICE! Be sure that the pinion (20) and its associated alignment pin (29) remain in their prescribed position.**
16. Take the O-rings (26) out of the housing's (1) counterbores.

**⚠ 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.

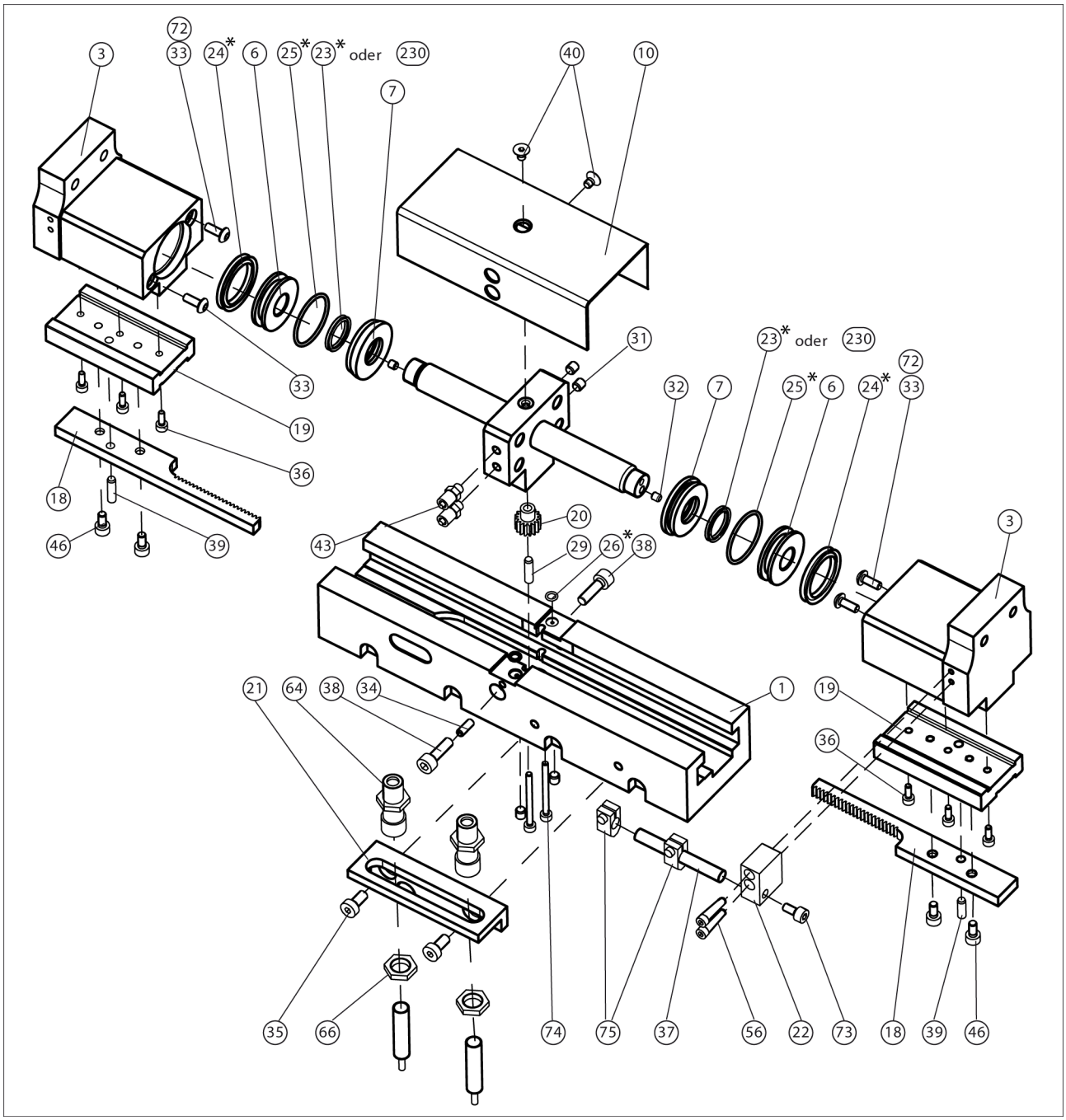
- Before starting any work on the product: Switch off the power supply and secure against restarting.
- Make sure, that no residual energy remains in the system.

### 7.4.2 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.
  **NOTICE! When inserting the gripper fingers (3) – with guide (19) and gear rack (18) – be sure that both gear racks (18) come together at the pinion (20) at the same time.**

## 7.5 Assembly drawing

The following figure is an example image.
It serves for illustration and assignment of the spare parts.
Variations are possible depending on size and variant.




* Wearing part, replace during maintenance.
Included in the seal kit. Seal kit can only be ordered completely.

**NOTE**

**When inserting the gripper fingers (3) – with guide (19) and gear rack (18) – be sure that both gear racks (18) come together at the pinion (20) at the same time.**

# 8 Translation of the original declaration of incorporation

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

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

We hereby declare that the partly completed machine described below

| | |
|---|---|
| Product designation: | Gripper for small components / KGG 220 – 280/pneumatic |
| ID number | 340312, 340313 |

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: see manufacturer's address

*Signature: see original declaration*

Lauffen/Neckar, February 2025

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/<br>Distributor | SCHUNK Intec Limited<br>Clamping and gripping technology<br>3 Drakes Mews, Crownhill<br>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: | Gripper for small components / KGG 220 – 280 / pneumatic |
| ID number | 340312, 340313 |

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, February 2025

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

# 10 Information on the RoHS Directive, REACH Regulation and Substances of Very High Concern (SVHC)

### RoHS Directive

SCHUNK products are classified as "large-scale stationary installations" or as "large-scale stationary industrial tools" within the meaning of Directive 2011/65/EU and its extension 2015/863/EU "on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)", or fulfill their intended function only as part of one. Therefore products from SCHUNK do not fall within the scope of the directive at this time.

### REACH Regulation

Products from SCHUNK fully comply with the regulations of Regulation (EC) No. 1907/2006 "concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)" and its amendment 2022/477. SCHUNK attaches great importance to completely avoiding chemicals of concern to humans and the environment wherever possible.

Only in rare exceptional cases do SCHUNK products contain SVHC substances on the candidate list with a mass content above 0.1%. In accordance with Article. 33 (1) of Regulation (EC) No. 1907/2006, SCHUNK complies with its duty to "communicate information on substances in articles" and lists the components concerned and the substances used in an overview that can be viewed at **schunk.com\SVHC**.

*Signature: see original declaration*

Lauffen/Neckar, February 2025

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

**SCHUNK SE & Co. KG**
**Spanntechnik | Greiftechnik | Automatisierungstechnik**

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

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