



Assembly and Operating Manual

SHS

Manual changing system

Translation of the original manual

Hand in hand for tomorrow

Imprint

Copyright:

This manual is protected by copyright. The author is SCHUNK SE & Co. KG.
All rights reserved.

Technical changes:

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

Document number: 1002529

Version: 08.00 | 08/04/2025 | en

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	5
1.1 About this manual.....	5
1.1.1 Presentation of Warning Labels	5
1.1.2 Applicable documents	6
1.1.3 Sizes.....	6
1.2 Warranty	6
1.3 Accessories	6
1.4 Scope of delivery.....	6
2 Basic safety notes	7
2.1 Intended use.....	7
2.2 Not intended use	7
2.3 Constructional changes.....	8
2.4 Spare parts	8
2.5 Ambient conditions and operating conditions	8
2.6 Personnel qualification	8
2.7 Personal protective equipment	9
2.8 Notes on safe operation.....	9
2.9 Transport.....	10
2.10 Malfunctions	10
2.11 Disposal	10
2.12 Fundamental dangers	10
2.12.1 Protection during handling and assembly	11
2.12.2 Protection during commissioning and operation	11
2.13 Notes on particular risks	12
3 Technical data	14
4 Design and description	15
5 Assembly.....	16
5.1 Screw connection according to ISO-9409	16
5.2 Mounting option for electrical option moduls.....	17
5.3 Mounting the sensor.....	18
5.3.1 Overview of sensors	18
5.3.2 Mounting inductive proximity switch IN 5 / IN 40	19
6 Operation.....	22

7 Maintenance	24
7.1 Notes.....	24
7.2 Maintenance intervals.....	24
7.3 Lubricants/Lubrication points.....	24
7.4 Spare and wearing parts.....	26
8 Translation of the original declaration of incorporation	27
9 Information on the RoHS Directive, REACH Regulation and Substances of Very High Concern (SVHC)	28

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 *

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:

- SHS 40
- SHS 50
- SHS 63
- SHS 80
- SHS 100
- SHS 125

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 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 Scope of delivery

The scope of delivery includes

- Manual Change Head SHK in the version ordered
- Manual Change Adapter SHA in the version ordered
- Accessory kit
 - Locking screws for radial air feed-throughs
 - O-rings for axial feed-through
 - Sensor bracket (SHS 100, SHS 125)
 - Clamping bracket (SHS 100, SHS 125)

2 Basic safety notes

2.1 Intended use

- The manual change system SHS, consisting of a manual change head SHK and a SHA manual change adapter, is used to quickly change parts and automation components, eg grippers on a robot.
- The manual change system SHS is not part of the load
- The manual change head SHK ist mounted on an industrial robot. The manual change adapter SHA is mounted on an en effector.

Operating conditions

- SHA and SHK are connected by a quick-closing system.
- For use in roofed and enclosed rooms
- For use in non explosion-endangered rooms
- Exclusively transit air and vakuum. Corrosive and combustible gases are not permitted
- The product may only be used within the scope of its technical data, ▶ 3 [14].
- The product is intended for industrial and industry-oriented use.
- Appropriate use of the product includes compliance with all instructions in this manual.

2.2 Not intended use

The following points are considered as misconduct:

- Mounting the quick-change system (SHS) on products which are not industrial robots
- Use of tools on SHS
- Use the SHS as a lifting device
- Exceeding the permissible speed
- Failure to comply with the technical data
- Weight of the end effectors is greater than the maximum payload per size
- Improper connection between SHK and SHA
- Outdoor use
- Use in potentially explosive atmospheres
- Any utilization that exceeds or differs from the appropriate use is regarded as misuse.

2.3 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.

2.4 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 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 [14].

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 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 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.

2.12.2 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.

2.13 Notes on particular risks



⚠ 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 crushing due to objects falling or thrown out!

If a component breaks during operation or when pressure drops, the load can no longer be held. Items may fall or be thrown out, causing serious injury..

- Check the product for damage before operation. Repair if necessary.
- Observe the maintenance intervals.
- Do not operate the product with defective and / or damaged seals. Replace defective and / or damaged seals immediately.
- Take appropriate protective measures to secure the danger zone.



⚠ WARNING

Risk of crushing due to objects falling or thrown out!

If the maximum permissible load is exceeded, the product can no longer hold the load. This load can be thrown out and lead to serious injuries.

- Ensure that the permissible load is not exceeded.
- Take appropriate protective measures to secure the danger zone.



⚠ WARNING

Danger of crushing due to falling objects!

When transporting, assembling, disassembling and servicing, the product may fall down if the position changes unintentionally and result in serious injury.

- Wear suitable protective equipment.



⚠ CAUTION

Risk of injury from contact with lubricants!

The contact of grease / oil with skin or eyes can lead to inflammation and allergic reactions.

- Avoid skin contact with lubricants
 - Wear safety goggles and protective gloves.
 - Wash hands thoroughly after contact with grease.
-

3 Technical data

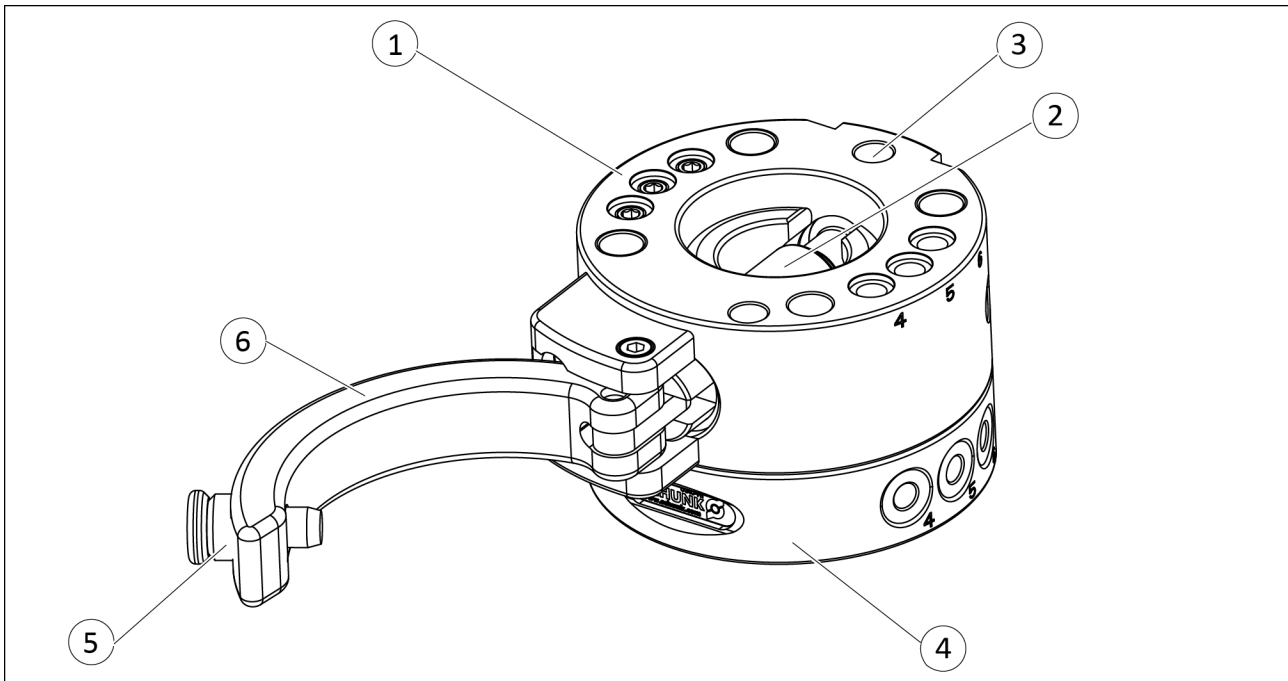
Designation	SHS					
	40	50	63	80	100	125
Graduated circle diameter [mm]	40	50	63	80	100	125
SHK Weight [kg]	0.14	0.2	0.41	0.74	1.3	2.8
SHA Weight [kg]	0.075	0.1	0.2	0.35	0.55	1.2
Repeatability [mm]	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Max. dynamic torsional moment M _x [Nm]	22.5	35	75	115	230	478
Max. dynamic bending moment M _y [Nm]	22.5	35	75	115	230	478
Max. dynamic torsional moment M _z [Nm]	15	27	48	75	230	465
Max. locking stroke [mm]	1	1	1	1	1	1
Pneumatic feed-through (max. 7 bar)	4 x M5	6 x M5	6 x G1/8"	9 x G1/8"	12 x G1/8"	12 x G1/4"
Max. permitted speed [rpm]	300					

Permitted loading assuming the following conditions

Designation	SHS					
	40	50	63	80	100	125
Distance from the center of gravity [mm]	80	100	125	125	160	250
Max. acceleration [m/s ²]	10	10	10	10	10	10
Loading capacity [kg] (At the above values)	9	11	18	36	43	58

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

4 Design and description



1 SHK manual change head
(robot side)

2 Lock bolt

3 Fitting for cylindrical pin for angular
alignment

4 SHA manual change adapter
(gripper side, end effector)

5 Suspend bolt

6 Hand lever

The Manual Change System SHS, consisting of an SHK manual change head and an SHA manual change adapter, is lockable and unlockable with a hand lever.

The lock bolt, which is operated using the hand lever, connects the SHK and SHA quickly, form-fitting and free from clearance.

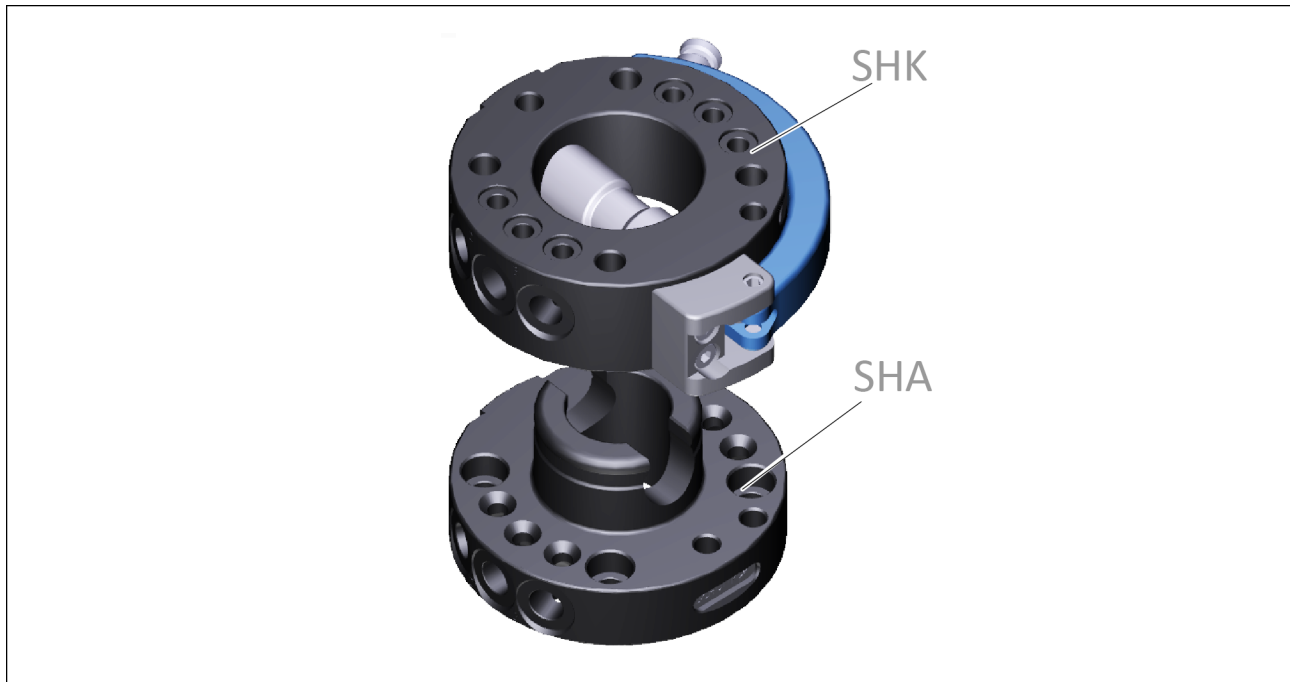
An integrated pneumatic feed-through safely supplies the tool with compressed air.

5 Assembly

5.1 Screw connection according to ISO-9409

NOTE

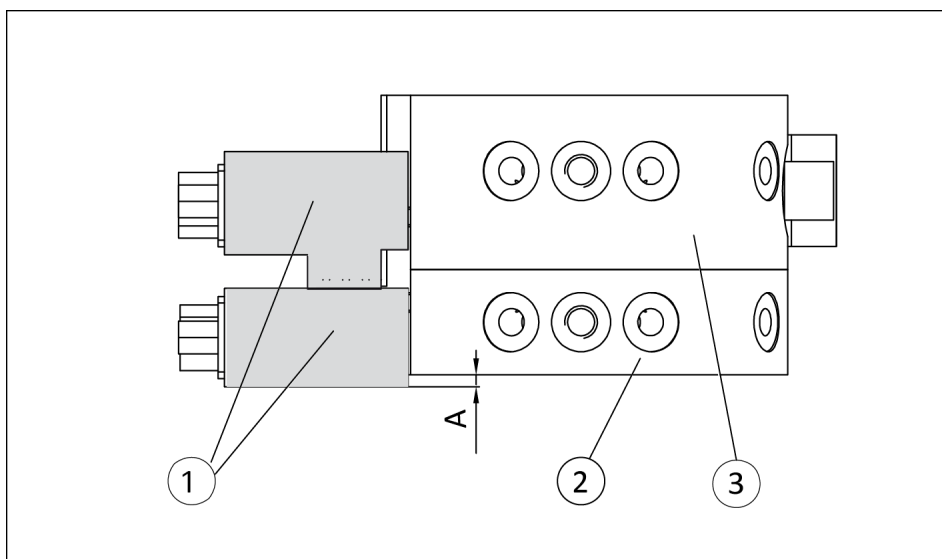
The manual change head and adapter (SHK and SHA) have a drilling pattern as per DIN ISO 9409-1 and can therefore be mounted on most robots without additional adapter plates.



Drilling pattern as per ISO DIN ISO 9409-1

Size	SHK L_K ISO-9409	SHA L_K ISO-9409
40	Ø40 mm, countersink M6 (4x), DIN 74 shape K	Ø40 mm, countersink M6 (4x), DIN 74 shape H
50	Ø50 mm, countersink M6 (4x), DIN 74 shape K	Ø50 mm, countersink M6 (4x), DIN 74 shape H
63	Ø63 mm, countersink M6 (4x), DIN 74 shape K	
80	Ø80 mm, countersink M8 (4x), DIN 74 shape K	
100	Ø100 mm, countersink M8 (4x), DIN 74 shape K	
125	Ø125 mm, countersink M10 (6x), DIN 74 shape K	

5.2 Mounting option for electrical option moduls



Attachment options for electrical optional modules

- | | |
|---|----------------------------|
| 1 | Optional electrical module |
| 2 | SHA manual change adapter |
| 3 | SHK manual change head |

NOTE

When attaching the electrical optional modules, it can be that the optional module (1) does not connect flush to the manual change adapter (2).

In this case, a corresponding adapter plate must be made that compensates for the possible projection "A".

5.3 Mounting the sensor

NOTE

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

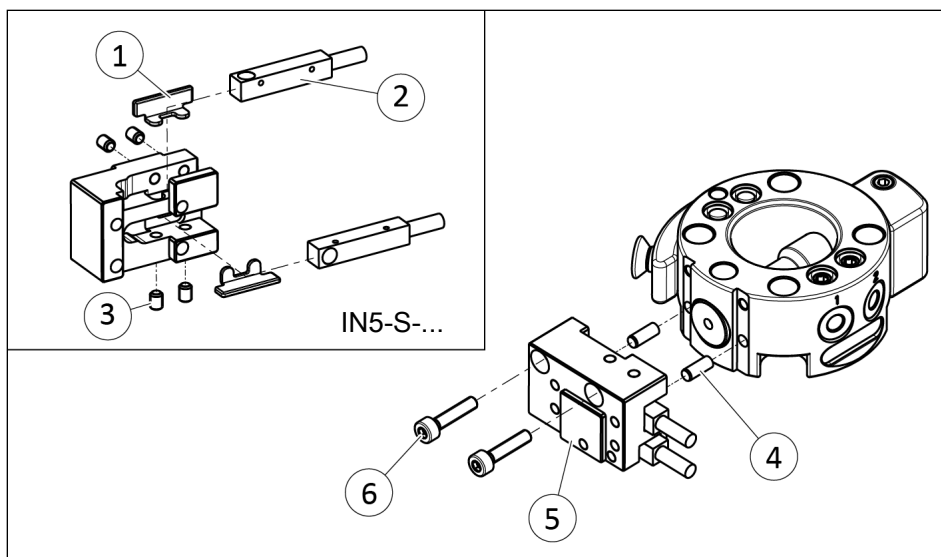
The product is prepared for the use of sensors.

- For the exact type designations of suitable sensors, please see catalog datasheet and ▶ 5.3.1 [18].
- 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.

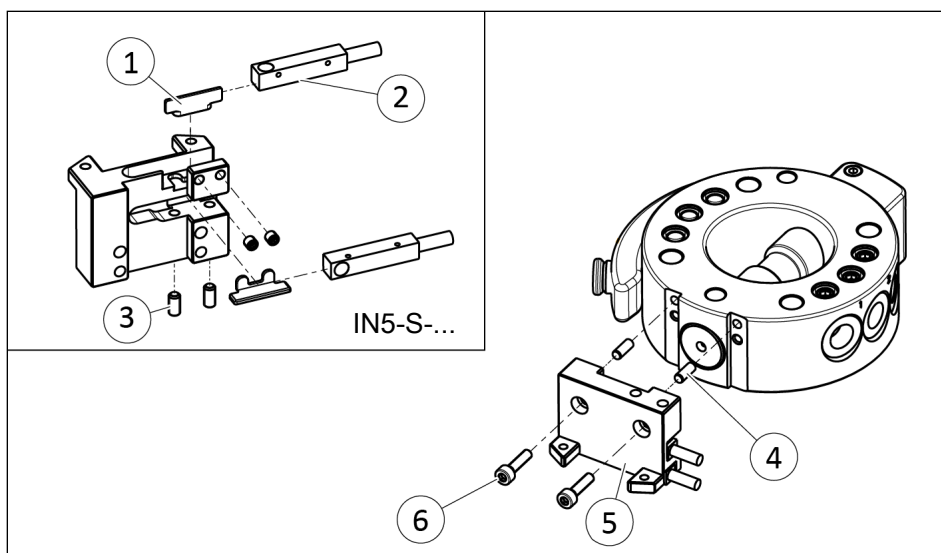
5.3.1 Overview of sensors

Designation	SHS					
	40	50	63	80	100	125
Inductive proximity switch IN 5-S-M8	X	X	X	X	X	X
Inductive proximity switch IN 5-S-M12	X	X	X	X	X	X
Inductive proximity switch IN 40-S-M8					X	X
Inductive proximity switch IN 40-S-M12					X	X

5.3.2 Mounting inductive proximity switch IN 5 / IN 40



Mounting inductive proximity switch IN 5 to SHS 040 and SHS 050



Mounting inductive proximity switch IN 5 to SHS 063 and SHS 080

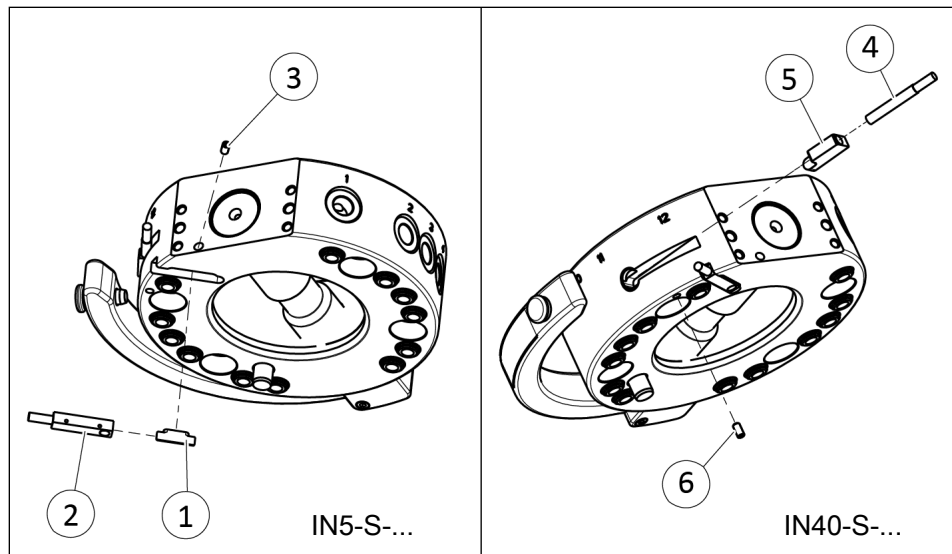
Pre-assembling the mounting kit

1. Insert the clamping bracket (1) into the groove.
2. Slide the sensor (2) up to the stop in the groove.
3. Tighten the set-screws (3).

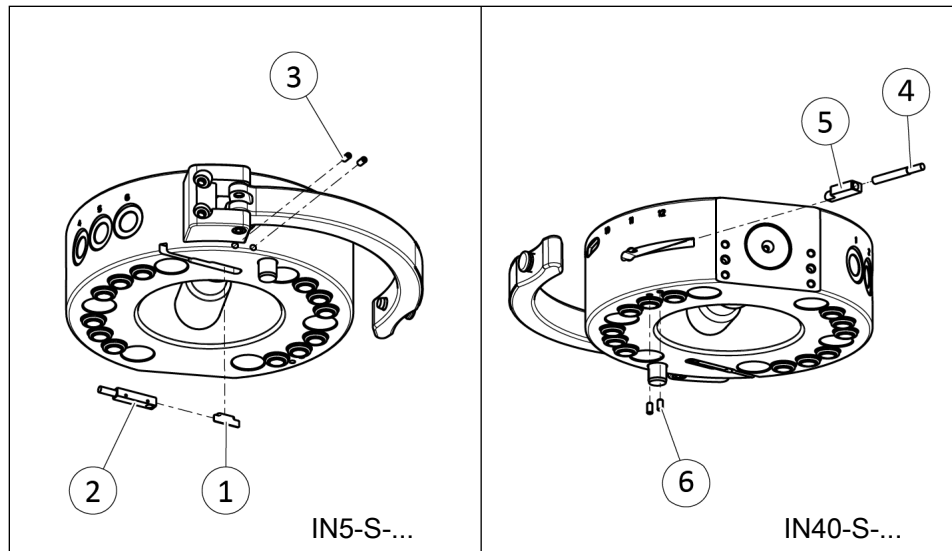
⇒ Max. tightening torque: 0.2 Nm

Mounting the mounting kit to SHK

1. Insert the cylindrical pins (4) into the pre-assembled mounting kit (5).
2. Fasten the mounting kit (5) to SHK using screws (6).



Mounting inductive proximity switches IN 5 and IN 40 to SHS 100



Mounting inductive proximity switches IN 5 and IN 40 to SHS 125

Mounting inductive proximity switch IN 5

1. Insert the clamping bracket (1) into the groove.
2. Slide the sensor (2) up to the stop in the groove.
3. Tighten the set-screw (3).

⇒ Max. tightening torque: 0.2 Nm

Mounting inductive proximity switch IN 40

- 1.** Slide the sensor (4) into the sensor bracket (5) up to the stop.
- 2.** Slide the sensor bracket (5) up to the stop in the groove.
- 3.** Fasten the sensor bracket (5) using the set-screw (6).

6 Operation



⚠ 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.

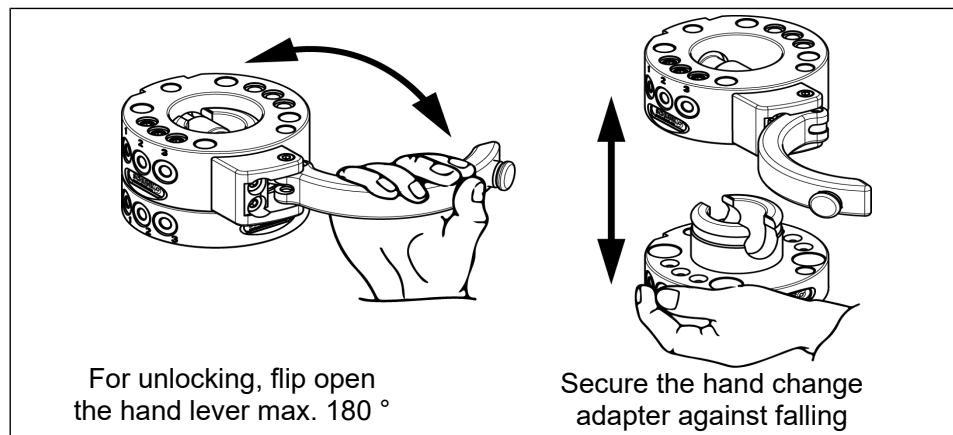


⚠ WARNING

Risk of injury from particles thrown out!

When unlocking, dirt particles can be thrown out and lead to serious eye injuries.

- Before unlocking, depressurize system and vent.
- Wear suitable protective equipment.



Unlocking / Locking



Unlocking

⚠ WARNING

Danger of crushing due to falling objects!

When unlocking, the end effector can fall down when the hand levers are fully open and in an unfavorable end position and lead to serious injuries.

- Before unlocking secure the end effector against falling.
- Wear suitable protective equipment.

1. Pull the suspended bolt on the hand lever.
2. Turn the hand lever 180° until it stops (unlock).
 - ⇒ SHK and SHA can be pulled apart in the axial direction.



Locking

⚠ CAUTION

Danger of crushing due to moving parts.

Fingers and hands can be crushed when locking the manual change system.

- Proceed with caution when locking.
- Do not place fingers between the hand lever, manual change head and manual change adapter.

1. Move the hand lever into the open position.
2. Push the SHK and SHA into each other in this position.
3. Close the hand lever and snap in the suspended bolt into the bore hole.
 - ⇒ Locking is effective.

NOTE

The amount of force required to lock the unit may be higher for the first few locking cycles until the seals are seated.

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 intervals

Maintenance interval	Maintenance work
regularly (at each change)	Perform visual inspection. The product must be free of chips and dirt.
1000 changing processes *)	Clean all parts thoroughly, check for damage and wear. Oil or grease external steel parts. Lubricate the locking bolt at the contact surfaces to SHK and SHA.
As required	Send damaged products to SCHUNK for repair.

*) Information refers to use under normal operating and ambient conditions.

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 10

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

The product contains food-compliant lubricants as standard.

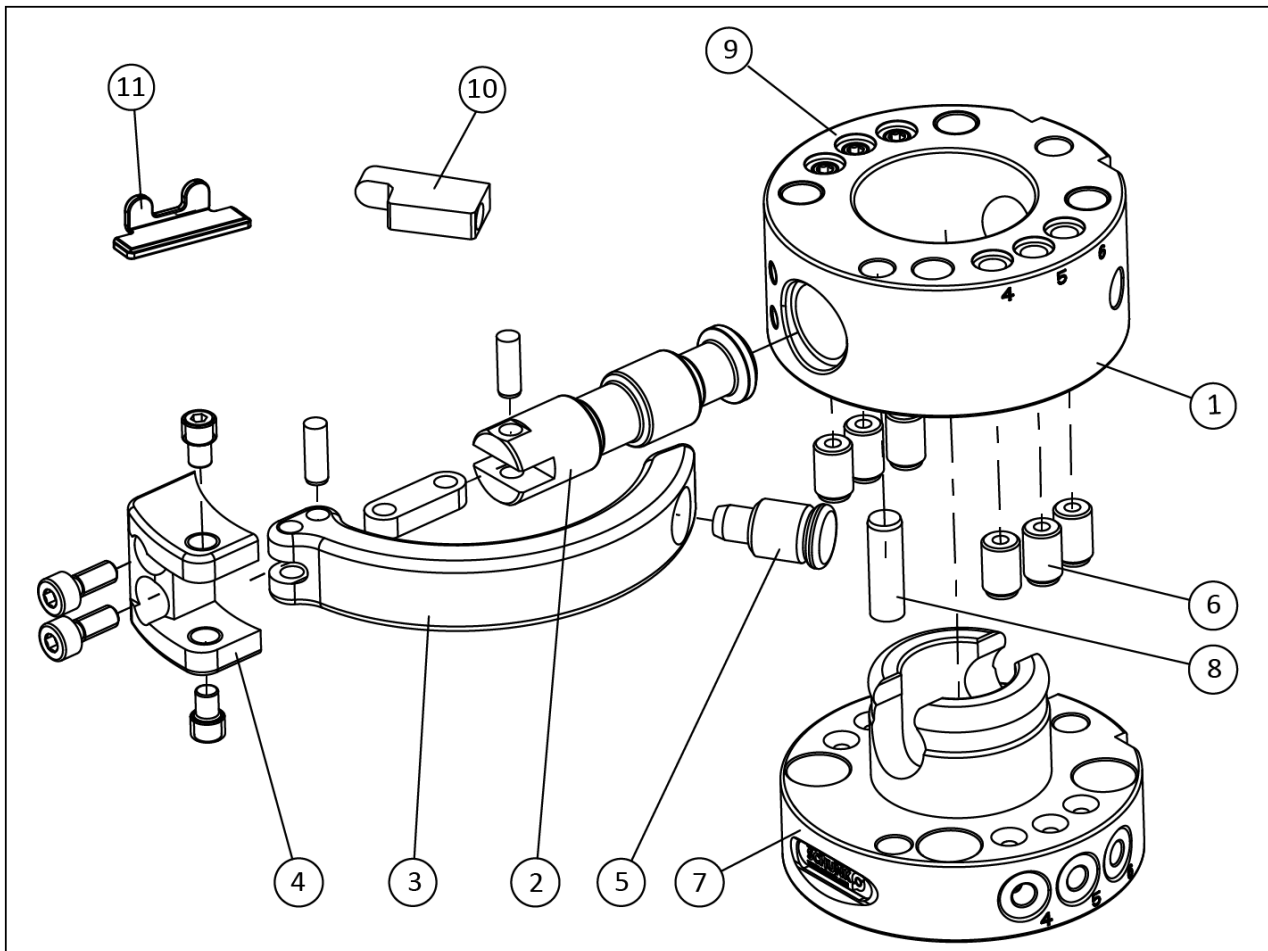
The requirements of standard EN 1672-2:2020 are not fully met.

NOTE

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

7.4 Spare and wearing parts

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.



Tab.: Wear parts

Item	Designation	SHS					
		40	50	63	80	100	125
6	Description	Seal M5	Seal M5	Seal G18	Seal G18	Seal G18	Seal G14
	Ident number	1007941	1007941	9937283	9937283	9937283	9941122
	Amount	4	6	6	9	12	12
9	Description	0-ring Ø4 mm	0-ring Ø4 mm	0-ring Ø6 mm	0-ring Ø6 mm	0-ring Ø6 mm	0-ring Ø8 mm
	Ident number	9611112	9611112	9611081	9611081	9611081	9611082
	Amount	4	6	6	9	12	12
10	Description	–	–	–	–	Sensor bracket	Sensor bracket
	Ident number	–	–	–	–	1360869	1360873
11	Description	–	–	–	–	Clamping bracket	Clamping bracket
	Ident number	–	–	–	–	1414406	1414406

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: Manual changing system / SHS /
ID number 0310400 – 0310401; 0310410 – 0310411, 1334788 – 1334789; 1399638 –
1399639; 1399576; 1399581; 0310420 – 0310421; 0310430 – 0310431;
0310440 – 0310441; 0310450 – 0310451

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, March 2025

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

9 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

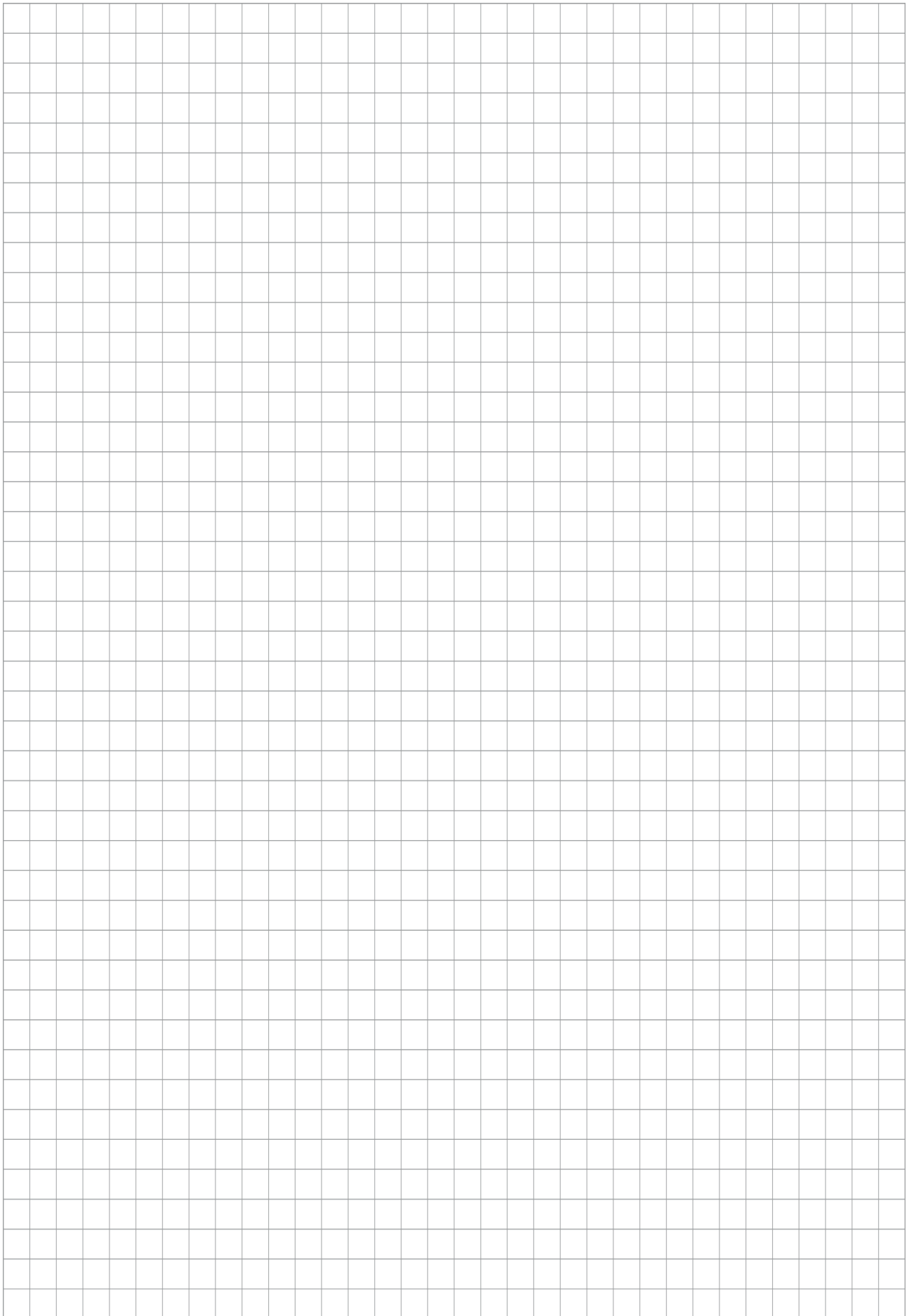
Products from SCHUNK fully comply with the regulations of Regulation (EC) No. 1907/2006 "concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)" and its amendment 2022/477. SCHUNK attaches great importance to completely avoiding chemicals of concern to humans and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

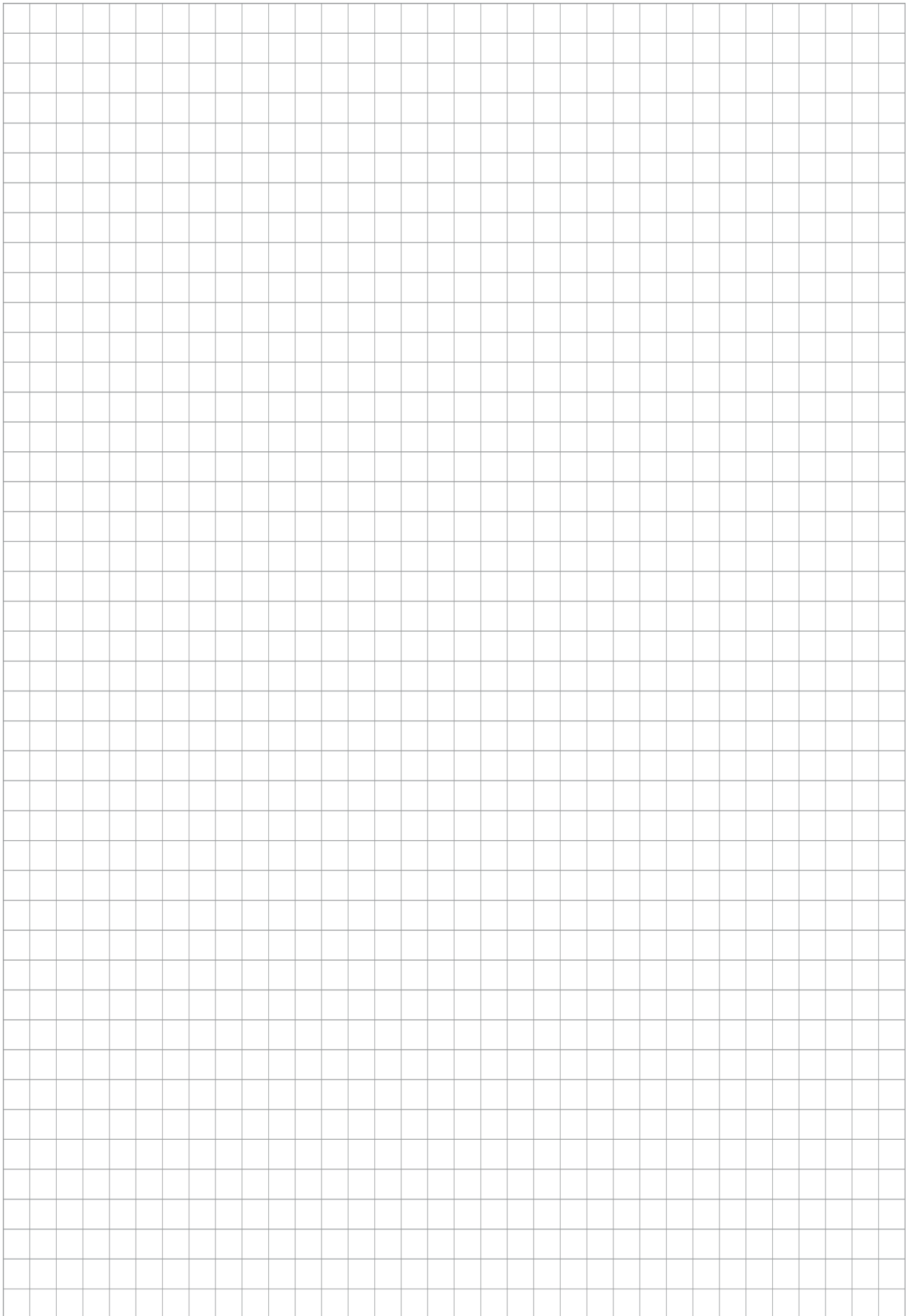
Only in rare exceptional cases do SCHUNK products contain SVHC substances on the candidate list with a mass content above 0.1%. In accordance with Article. 33 (1) of Regulation (EC) No. 1907/2006, SCHUNK complies with its duty to "communicate information on substances in articles" and lists the components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

Signature: see original declaration

Lauffen/Neckar, March 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

Folgen Sie uns | *Follow us*



Wir drucken nachhaltig | *We print sustainable*