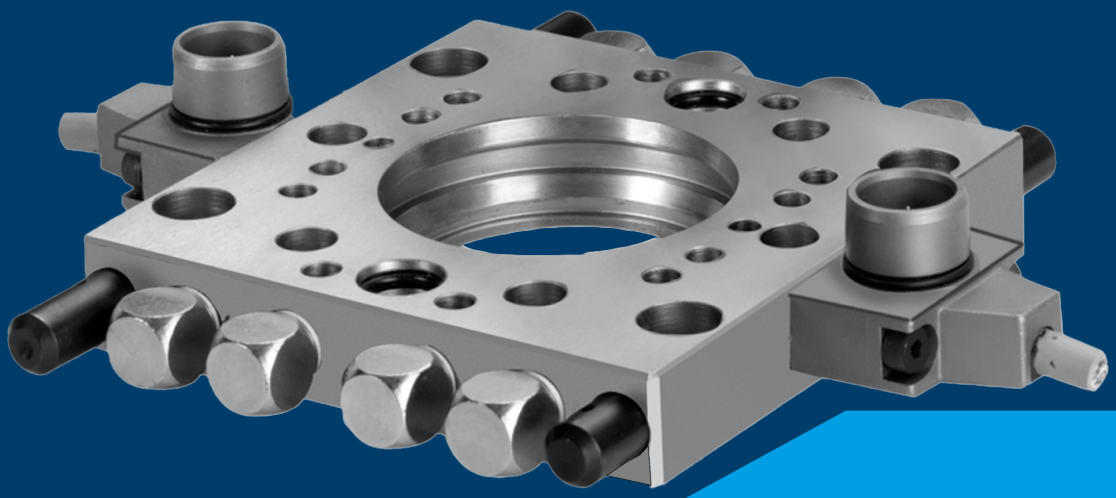


Assembly and Operating Manual GWA

Gripper Change Adapter

Translation of Original Operating Manual

Hand in hand for tomorrow

Imprint

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

Document number: 389118

Version: 05.00 | 24/08/2023 | 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

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.

CAUTION

Material damage!

Information about avoiding material damage.

1.1.2 Applicable documents

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

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

1.2 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 Change Adapter GWA in the version ordered
- Assembly and Operating Manual
- Accessory pack

1.3.1 Accessories kit

Accessory pack for	ID number
GWA 64	5509672
GWA 80	5511528
GWA 125	5511529

Content of the accessories pack: ▶ 6.4 [🗋 27].

1.4 Accessories

The following accessories, which must be ordered separately, are required for the product:

- Intermediate plates
- Gripper change magazine

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

1.4.1 Seal kit

Seal kit for	ID number
GWA 64	0370568
GWA 80	0370569
GWA 125	0370570

contents of the sealing kit, ▶ 6.4 [🗋 27].

1.4.2 GWD protection cover for GWA change adapter

CAUTION

The GWD dust cover is only suitable for covering the GWA change adapter.

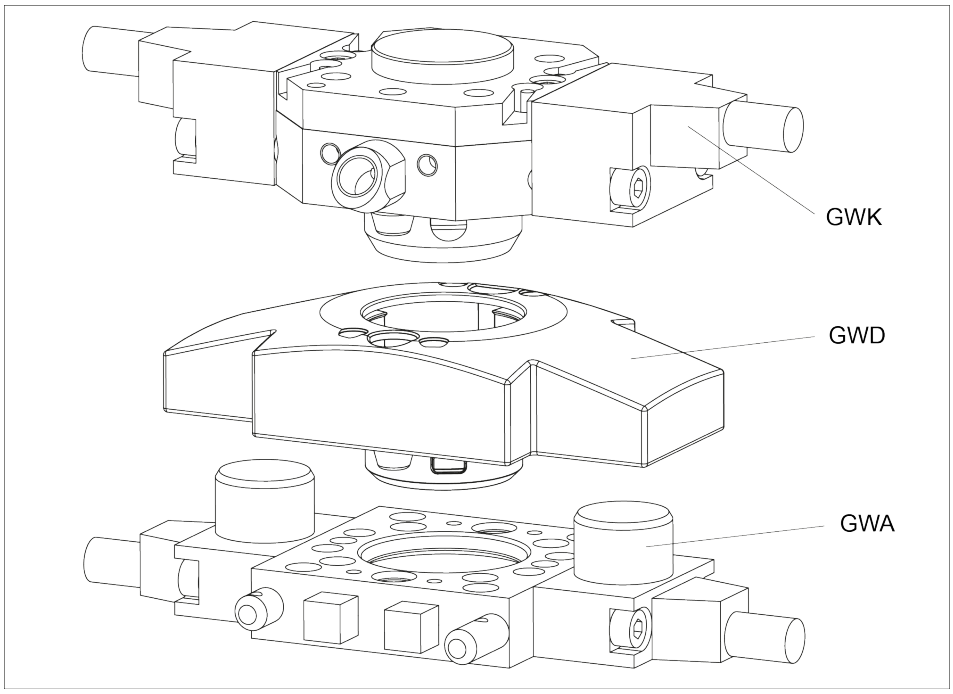
It must not be used to transport the GWA change adapter together with connected tools.

CAUTION

If the GWD protection cover is used in very dirty ambient conditions, measures must be taken to ensure that the inside of the changing head mount is not filled excessively with particles of dirt. Regular checks and cleaning, when required, are necessary.

CAUTION

If there is excessive contamination, there is a risk that the GWK changing head's locking mechanism will not travel fully to its end position and the GWD may be damaged.



GWD protection cover

The GWD protection cover can be used to prevent contamination of the openings for the pneumatic feed-throughs and of the contacts for the electrical options on the GWA change adapter while it is in the storage rack.

The GWD has a built-in clamping mechanism that is activated by locking and unlocking the GWK changing head. This can be used to remove the GWD dust cover from a GWA change adapter and place it on another GWA change adapter.

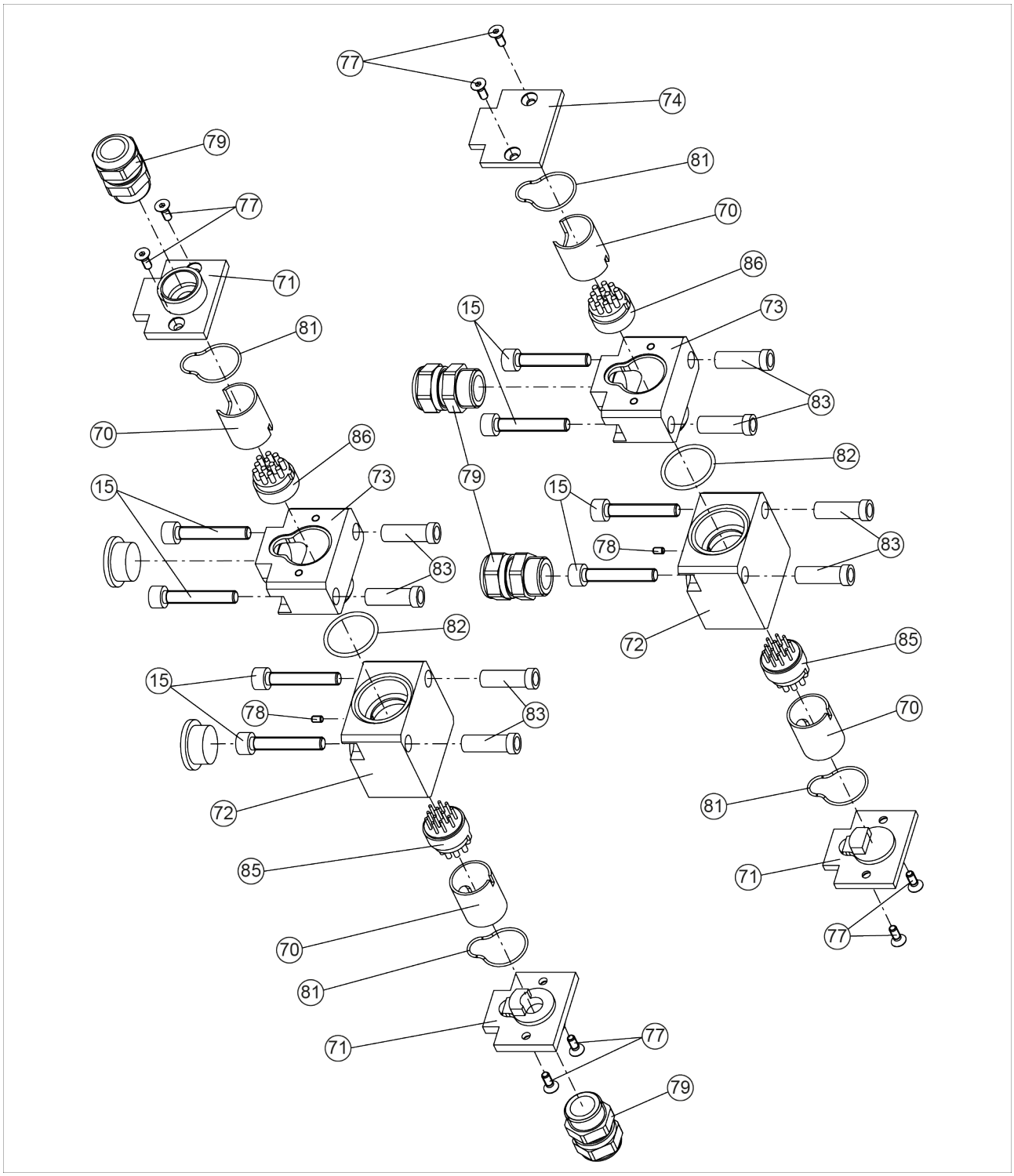
The GWD dust cover (material: PA2200) protects the GWA change adapter from the following contaminants:

- Dust
- Chips
- Various liquids (e.g. cooling lubricant)

Designation	GWD-064-19-19	GWD-080-19-19	GWD-125-19-19
ID number	0302540	0302541	0302542

1.4.3 Customizable plug connector – 12-pin

Additional attachment on request for gripper change systems GWS 64, 80 and 125.



Connector part – 12-pin	5510905
Socket part – 12-pin	5510904

2 Basic safety notes

2.1 Intended use

The product is only intended to be used as an interface between a handling device and tool (e.g. gripper).

- The product may only be used within the scope of its technical data, ▶ 3 [🗋 17].
- When implementing and operating components in safety-related parts of the control systems, the basic safety principles in accordance with DIN EN ISO 13849-2 apply. The proven safety principles in accordance with DIN EN ISO 13849-2 also apply to categories 1, 2, 3 and 4.
- 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.
- Appropriate use of the product includes compliance with all instructions in this manual.

2.2 Not intended use

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

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

2.3 Constructional changes

Implementation of structural changes

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

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

2.4 Spare parts

Use of unauthorized spare parts

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

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

2.5 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 [🗋 17].
- Make sure that the product is a sufficient size for the application.
- Make sure that the environment is free from splash water and vapors as well as from abrasion or processing dust. Exceptions are products that are designed especially for contaminated environments.

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

- 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

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.

2.12.3 Protection against dangerous movements

Unexpected movements

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

- Switch off the energy supply, ensure that no residual energy remains and secure against inadvertent reactivation.
- Never rely solely on the response of the monitoring function to avert danger. Until the installed monitors become effective, it must be assumed that the drive movement is faulty, with its action being dependent on the control unit and the current operating condition of the drive. Perform maintenance work, modifications, and attachments outside the danger zone defined by the movement range.
- To avoid accidents and/or material damage, human access to the movement range of the machine must be restricted. Limit/prevent accidental access for people in this area due through technical safety measures. The protective cover and protective fence must be rigid enough to withstand the maximum possible movement energy. EMERGENCY STOP switches must be easily and quickly accessible. Before starting up the machine or automated system, check that the EMERGENCY STOP system is working. Prevent operation of the machine if this protective equipment does not function correctly.

2.12.4 Protection against electric shock

Possible electrostatic energy

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

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

2.13 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 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 sharp edges and corners!

Sharp edges and corners can cause cuts.

- Use suitable protective equipment.

3 Technical data

	GWA 64	GWA 80	GWA 125
Weight [kg]	0.35	0.4	1.7
Max. payload [kg]	60	86	170
Pneumatic energy transmission	4x M5 and 2x G1/8"	6x M5 and 2x G1/8"	8x G1/8" and 2x G1/4"
Electrical energy transmission	2 x 18 pins 60V/1A		
Min./max. distance during locking [mm]	2		
Max. permissible XY axis offset [mm]	1.5		
Max. permissible angle offset [°]	1		
Repeatability [mm]	0.02		
Noise emission [dB(A)]	≤ 70		

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

4 Assembly

4.1 Mechanical connection

Evenness of the mounting surface

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

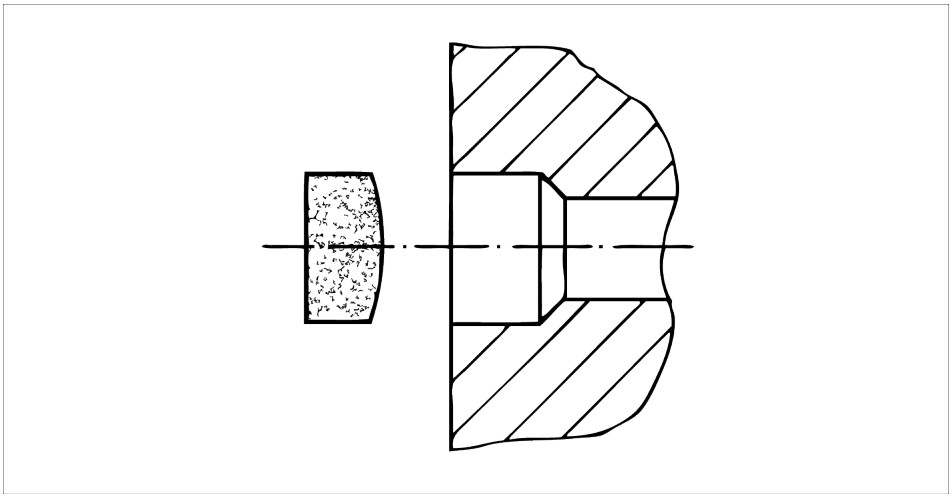
Edge length	Permissible unevenness
< 100	< 0.02
> 100	< 0.05

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

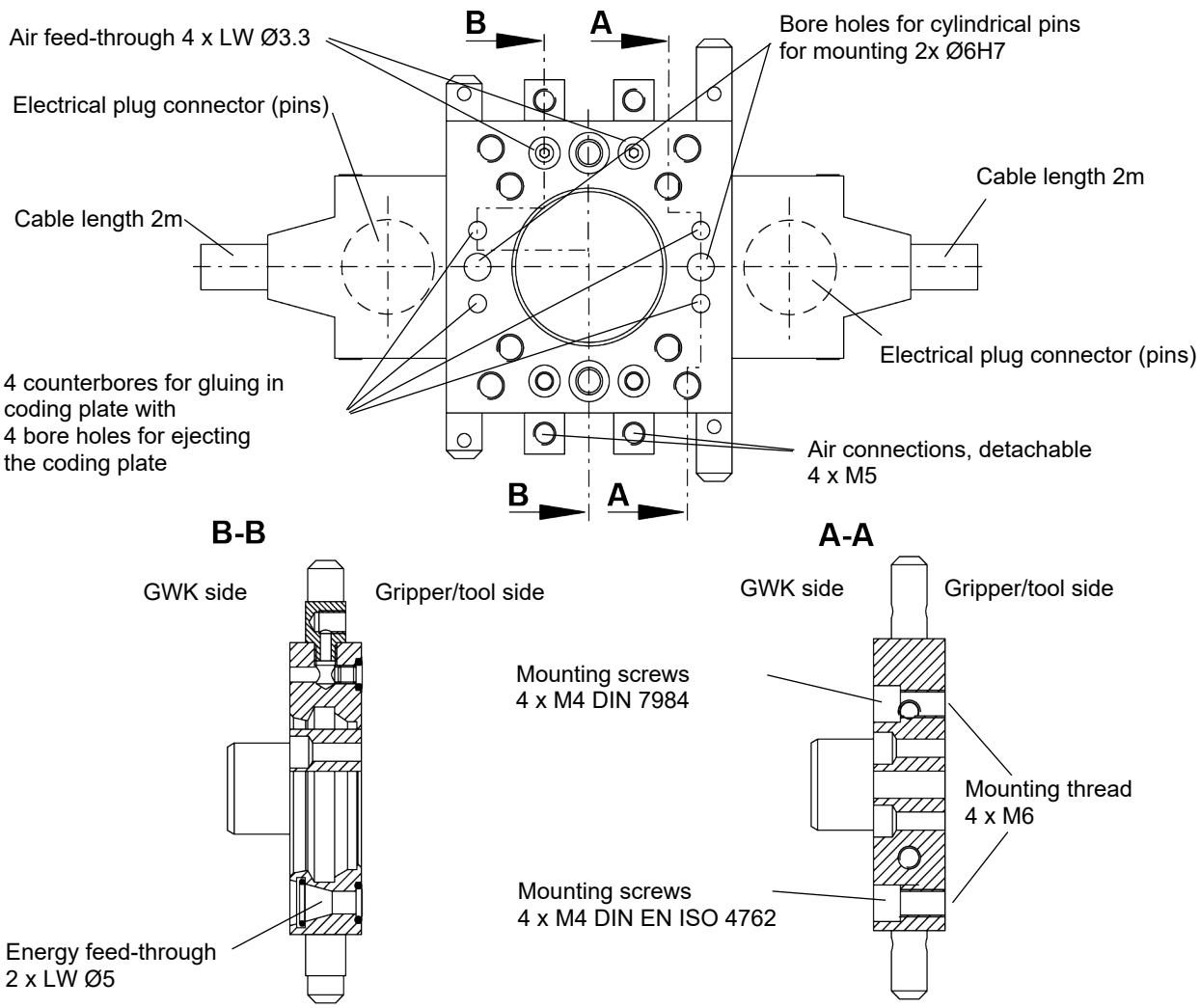
Gluing in the coding plate

CAUTION

Glue in the coding plate with the flat side facing up.

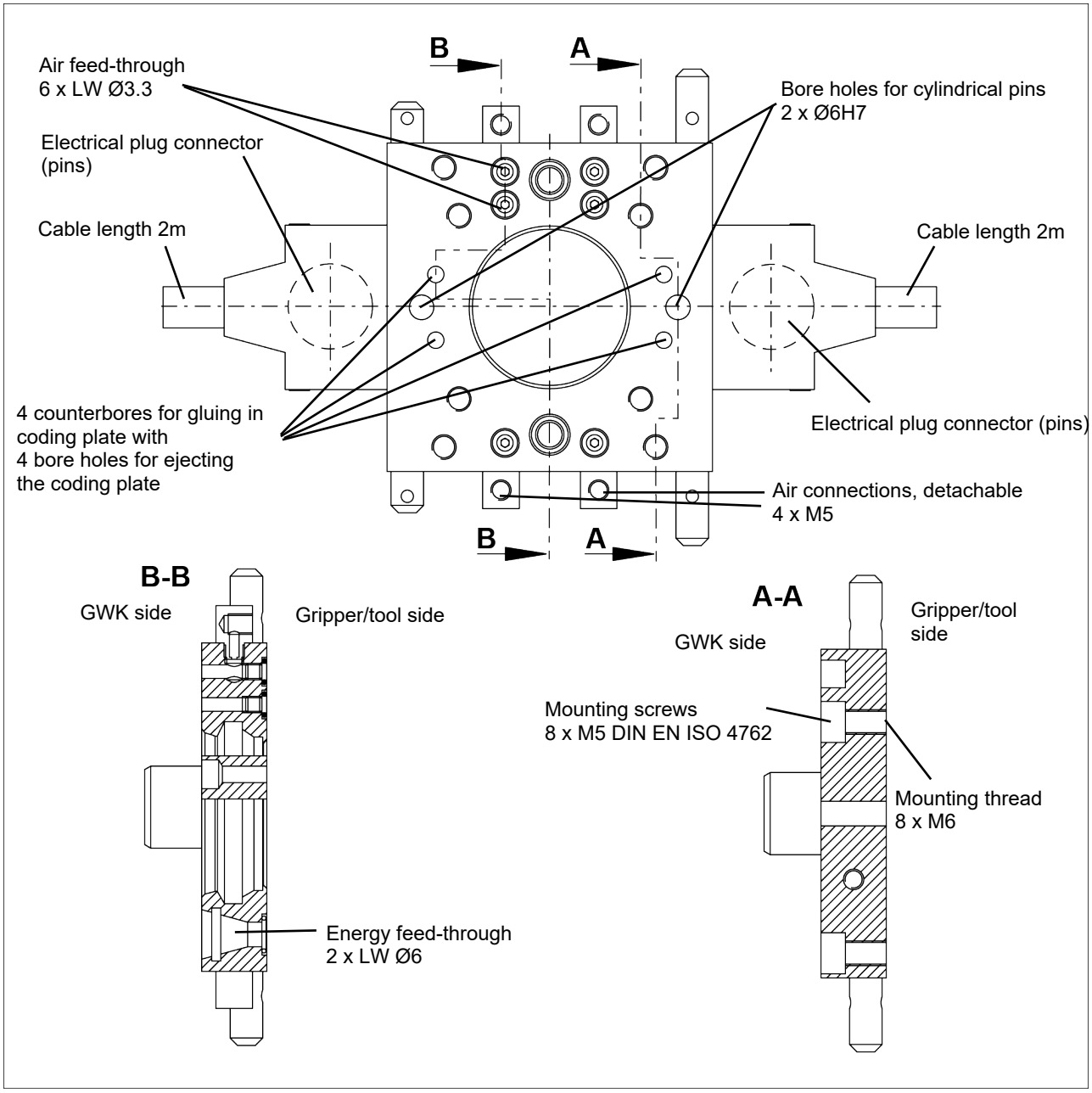


GWA 64


Air feed-through 4 x LW Ø3.3
Electrical plug connector (pins)
Cable length 2m
4 counterbores for gluing in coding plate with 4 bore holes for ejecting the coding plate
B
A
Bore holes for cylindrical pins for mounting 2x Ø6H7
Cable length 2m
Electrical plug connector (pins)
Air connections, detachable 4 x M5
B
A
B-B
GWK side
Gripper/tool side
Energy feed-through 2 x LW Ø5
A-A
GWK side
Gripper/tool side
Mounting screws 4 x M4 DIN 7984
Mounting thread 4 x M6
Mounting screws 4 x M4 DIN EN ISO 4762

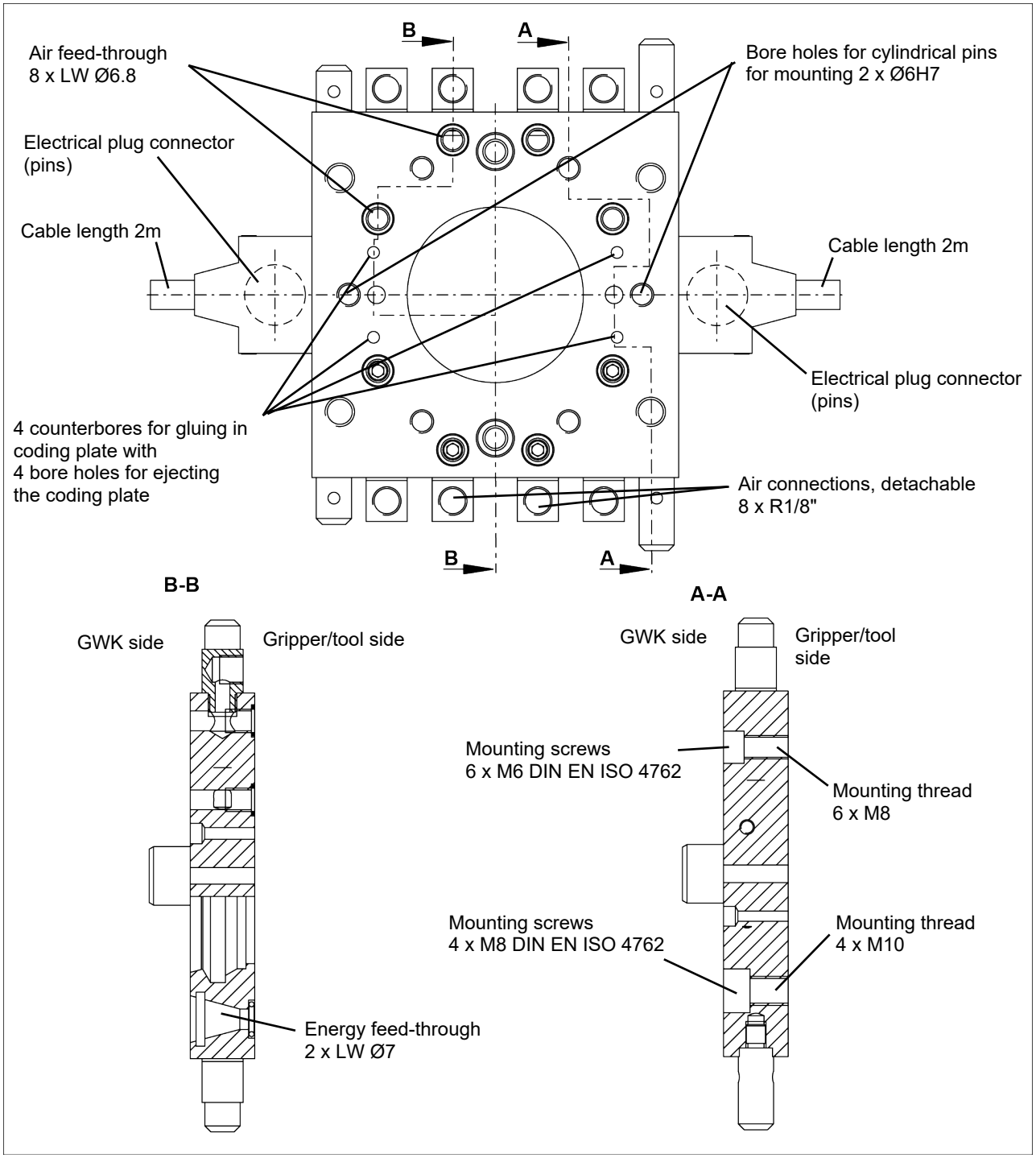
GWA 64

GWA 80


B
A
Air feed-through
6 x LW Ø3.3
Bore holes for cylindrical pins
2 x Ø6H7
Electrical plug connector
(pins)
Cable length 2m
Cable length 2m
4 counterbores for gluing in
coding plate with
4 bore holes for ejecting
the coding plate
Electrical plug connector (pins)
Air connections, detachable
4 x M5
B
A
B-B
GWK side
Gripper/tool side
A-A
GWK side
Gripper/tool
side
Mounting screws
8 x M5 DIN EN ISO 4762
Mounting thread
8 x M6
Energy feed-through
2 x LW Ø6

GWA 80

GWA 125



GWA 125

4.2 Electrical plug connector

NOTE

The cables must not be constantly moved up to the cable exit (risk of fracture).

The last cable clip is to be placed 100 – 300mm before the cable exit.

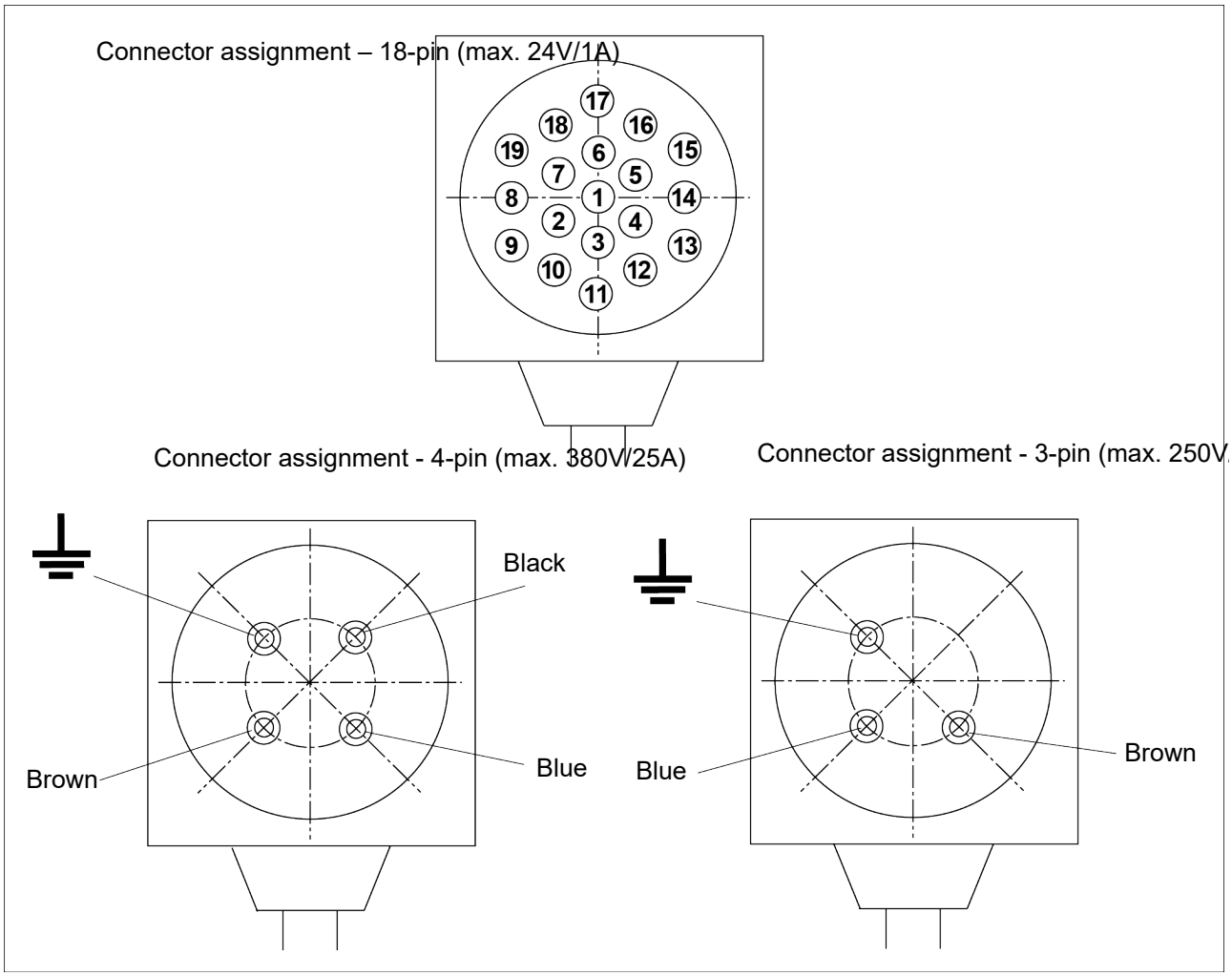
The minimum bending radius of the cable is 15 x cable Ø.

The bending radius can be less than the minimum where the cable is laid in such a way that it is rigid.

NOTE

The cable diameter is 8.5mm. The cable housing and plug connector are designed in accordance with VDE directives.

Connector assignments



1	not assigned	11	blue
2	white-yellow	12	red
3	yellow-brown	13	black
4	white-gray	14	purple
5	gray-brown	15	gray-red
6	white-green	16	red-blue
7	brown-green	17	white
8	yellow	18	brown
9	gray	19	green
10	pink		

18-pin	Lapp unitronic FD-D 18x0.14mm²
3-pin	Lapp Ölflex 500 P 3x1.5mm²
4-pin	Lapp Ölflex 500 P 4x2.5mm²

5 Troubleshooting

Errors	Possible cause / Corrective action
The GWA gripper change adapter does not lock properly.	• The contact surfaces of GWK and GWA are dirty. • The joint tolerances have been exceeded. • Connections for plug connector are bent (joint tolerances). • The axial and radial play of the connector part is too small due to contamination. • GWK does not lock or unlock.

6 Maintenance

6.1 Maintenance intervals

CAUTION

Material damage due to hardening lubricants!

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

- Reduce the lubricant intervals accordingly.

Size	64 – 125
Interval [Mio. cycles]	2

6.2 Lubricants/Lubrication points (basic lubrication)

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

SCHUNK recommends the lubricants listed.

Greasing area	Lubricant
Metallic sliding surfaces	Rivolta F.L.G. GT-2
All seals	Rivolta F.L.G. GT-2

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

NOTE

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

6.3 Servicing and assembling the product

Maintenance

- Clean all parts thoroughly and check for damage and wear.
- Treat all greased areas with lubricant.
  ▸ 6.2 [🗋 25]
- Oil or grease bare external steel parts.
- Replace all wear parts / seals.
  - Position of the wearing parts ▸ 6.4 [🗋 27]
  - Seal kit ▸ 1.4.1 [🗋 7]
- The contact surfaces on the GWK gripper changing head, the pins and the centering taper for the connector parts must always be clean.
- Make sure that the connector parts have noticeable axial and radial play.
  If this is not the case, remove the connector parts, clean everything thoroughly and screw the connector parts back on.
- If the GWK gripper changing head is cleaned and maintained, the GWA gripper change adapter should also be cleaned thoroughly.

Assembly

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

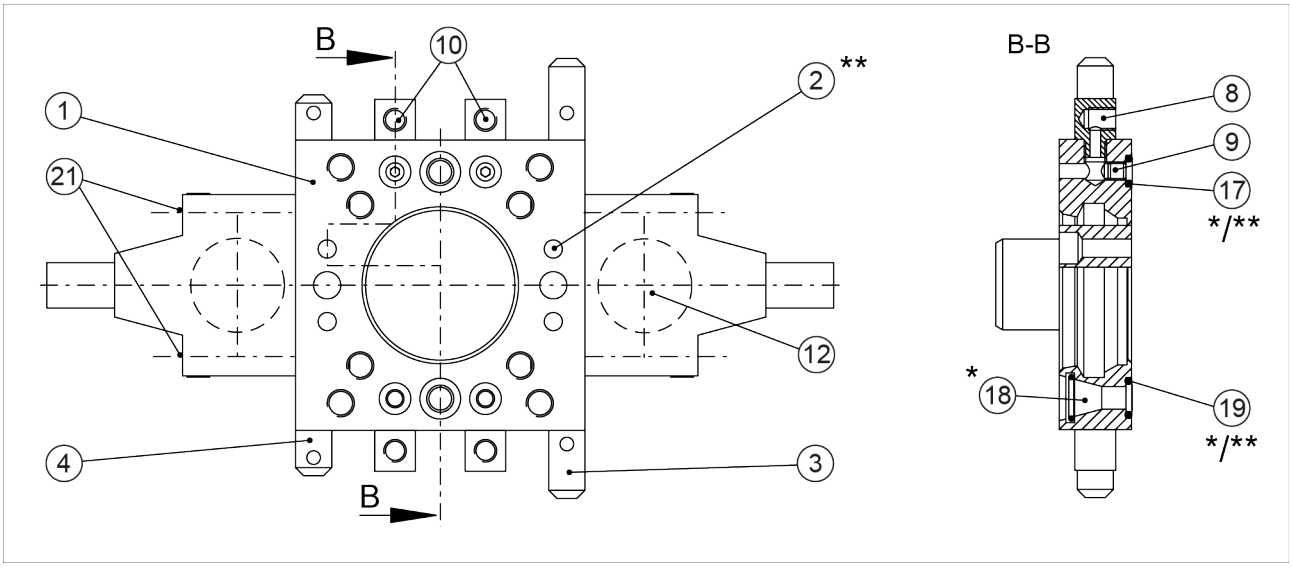
- Unless otherwise specified, secure all screws and nuts with Loctite no. 243 and tighten with the appropriate tightening torque.

6.3.1 Changing the connector part

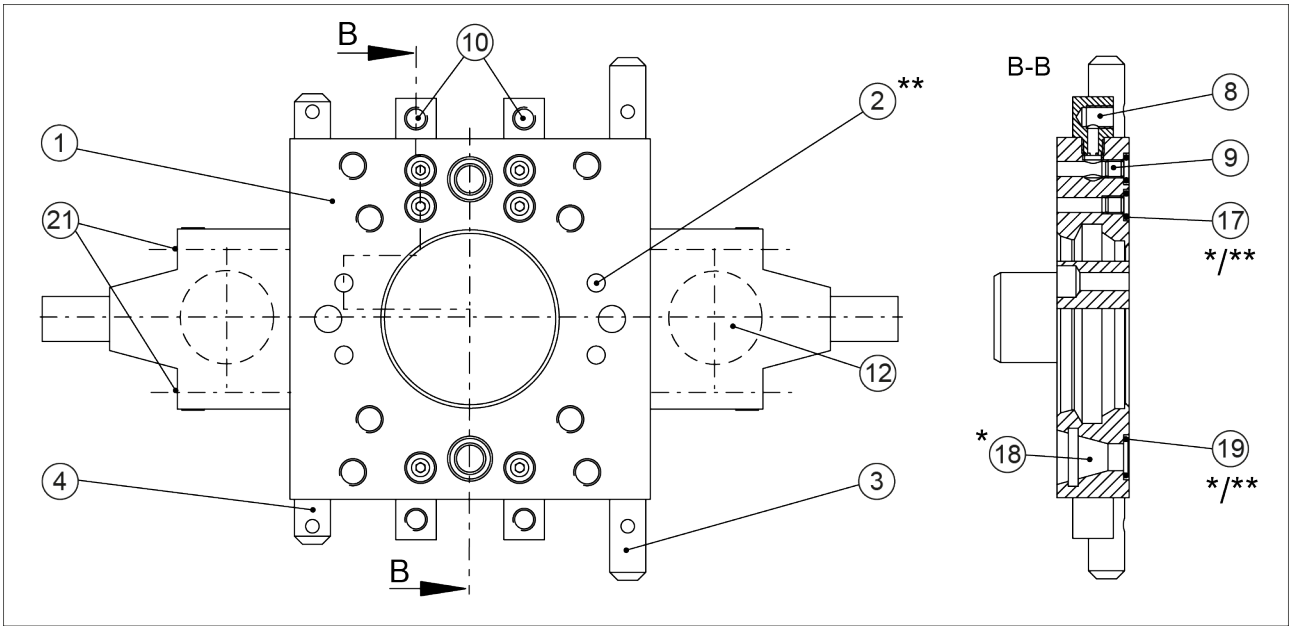
NOTE
After the screws (21) are tightened, the connector part should still have noticeable axial and radial play.

- Remove the screws (21) and replace the connector part.

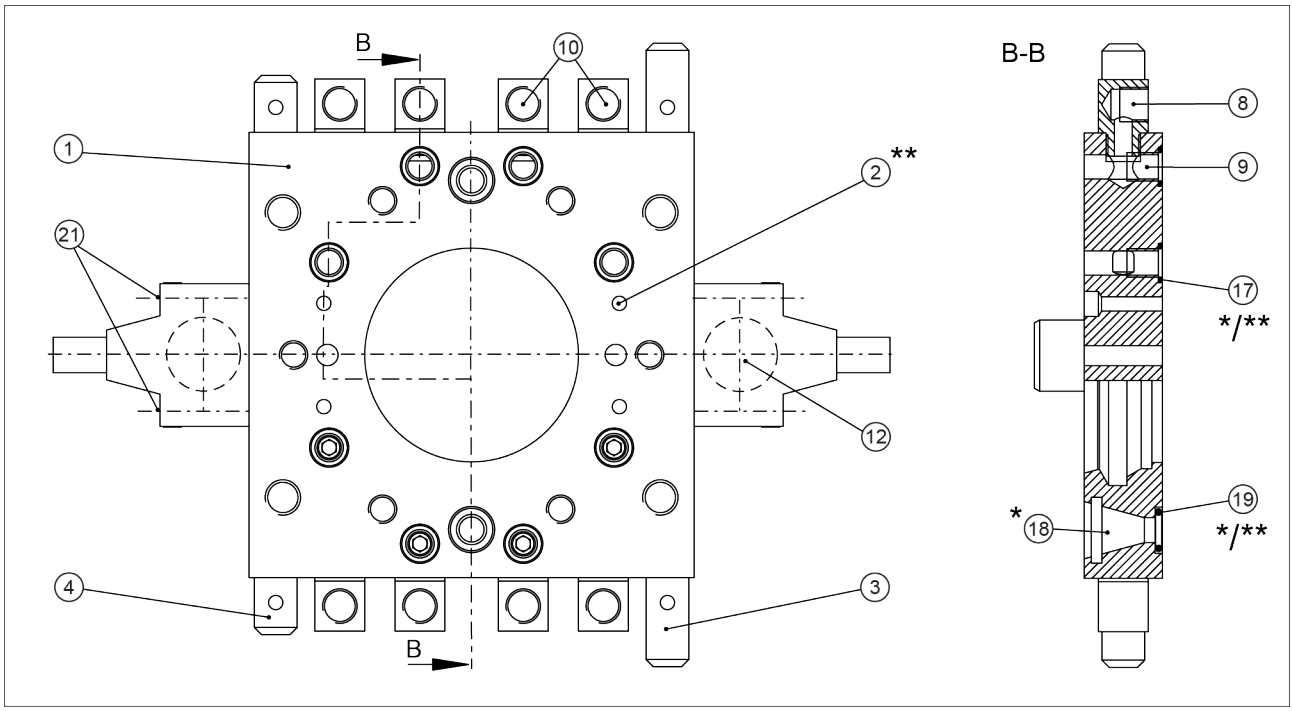
6.4 Assembly drawing



GWA 64 assembly



GWA 80 assembly



GWA 125 assembly

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

** Contained in accessory pack.

7 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 Toolholding and workholding | Gripping technology | Automation technology Bahnhofstr. 106 – 134 D–74348 Lauffen/Neckar

We hereby declare that the partly completed machine described below

Product designation:	Gripper Change Adapter / GWA /pneumatic
ID number	0302506...0302536

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, August 2023

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

8 UKCA declaration of incorporation

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

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

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

Product designation:	Gripper Change Adapter / GWA / pneumatic
ID number	0302506...0302536

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, August 2023

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, August 2023

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

SCHUNK SE & Co. KG
Toolholding and workholding | Gripping technology | Automation technology

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