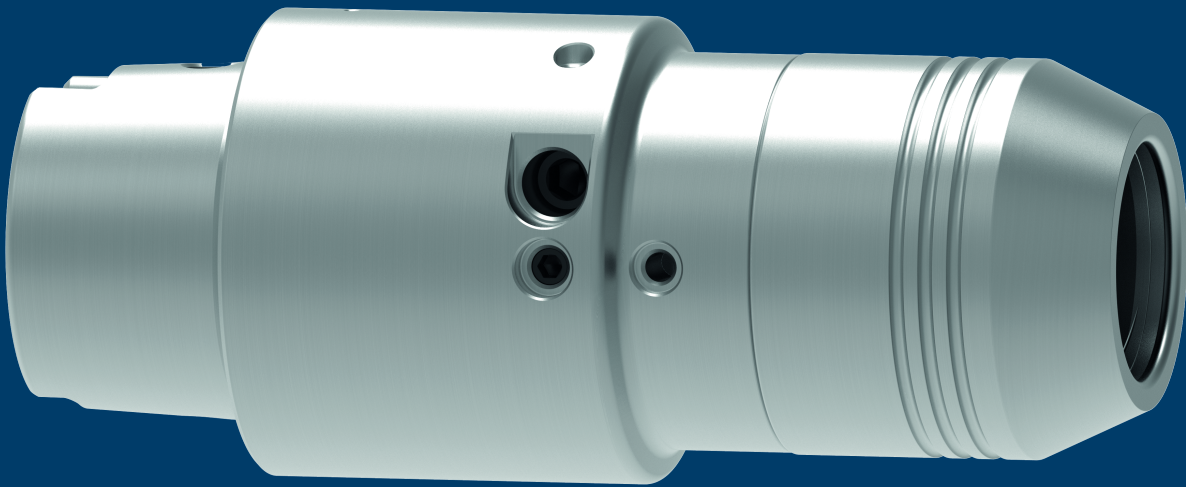




Assembly and Operating Manual

SAACKE HSK C63

Tool grinding toolholder

Translation of Original Operating
Manual

Hand in hand for tomorrow

Imprint

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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

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cms@de.schunk.com



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

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1 General

1.1 About this manual

This manual contains important information for 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 ► 1.1.4 [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 Definition of Terms

The term "product" replaces the product name on the title page in this manual.

1.1.3 Symbol definition

The following symbols are used in this manual:

■ Prerequisite for an action

1. Action 1

2. Action 2

⇒ Intermediate results

⇒ Final results

► 1.1.3 [6]: chapter number and [page number] in hyperlinks

1.1.4 Applicable documents

- General terms of business *
- Contractual agreements

The documents labeled with an asterisk (*) can be downloaded from [schunk.com](https://www.schunk.com).

1.2 Warranty

If the product is used as intended, the warranty is valid for 12 months from the date of delivery from the production facility or 50 000 cycles* under the following conditions:

- Observe the applicable documents, ► 1.1.4 [6]
- Observe the ambient conditions and operating conditions, ► 2.5 [9]
- Observe the specified maintenance instructions, ► 8 [34]

This does not include special agreements detailed in the warranty and wearing parts. Wearing parts can also become worn through appropriate use before the maximum number of clamping cycles has expired. This includes all areas which come into contact with the workpiece or the machine (clamping area and mount) and sealing elements.

* One cycle comprises one complete clamping procedure ("clamping" and "unclamping").

1.3 Scope of delivery

The scope of delivery includes

- 1 **Hydraulic expansion toolholder** in the ordered variant (0206636; 0206637; 0206638; 0206639)
- 1 **Assembly and Operating Manual** (ID 1521585)
- 1 **Intermediate sleeve lock accessory kit** (see table)
- 1 **Hexagon socket wrench for reducing screw SW5x100** (9205650)

ID Product	ID Accessory kit
0206636	20041397
0206637	20041397
0206638	20041397
0206639	20041399

1.4 Accessories

The following accessories for the product are available separately:

Intermediate sleeve without lock GZB-S PK
not coolant-proof

Intermediate sleeve without lock GZB-S KD
coolant-proof

Intermediate sleeve with lock GZB-S KD/RS
coolant-proof

Intermediate sleeve with bayonet GZB-S bayonet
coolant-proof

Sleeve remover (ID 9937987)

2 Basic safety notes

2.1 Intended use

- The product is intended for picking up, clamping and reliably holding fully cylindrical workpieces (the tools to be ground are workpieces in this case).
- The product is used for tool grinding.
- The product is intended for industrial use.
- The product may only be used and applied within the scope of the information in the technical data, ► 3 [14].
- 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.
- Appropriate use of the product includes compliance with all instructions in this manual.

2.2 Not intended use

The product is not being used as intended if, for example:

- Tools or similar are picked up and clamped in order to machine workpieces.
- The product is used for something other than tool grinding.
- The information in the technical data is not observed when using and operating the product ► 3 [14].
- The product is used as a lifting tool.
- The minimum clamping depth is not observed (clamping length is not completely covered).
- The expansion rate control system is not observed ► 8.2.4 [38].
- The product is used in corrosive media.
- The maintenance and storage instructions are not observed ► 8 [34].

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 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:

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.

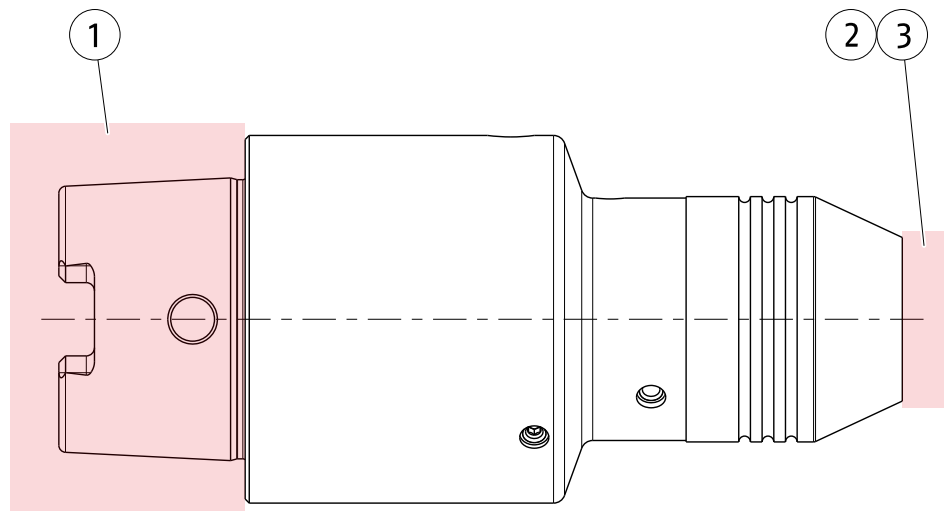
2.12.2 Protection during commissioning and operation

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 Hazardous points on the product



NOTE: Illustration may differ from the actual design.

Position	Danger when	Danger due to
1	Assembling/disassembling the product	Crushing risk
2	Operating/clamping the product	The expansion sleeve bursting
3	Workpiece change	Crushing risk

3 Technical data

3.1 Product data

ID	0206636; 0206637; 0206638; 0206639			
Operation	Grinding			
Insertion position	Horizontal			
Clamping actuation	Pressure actuated to stop			
Maximum permissible speed of rotation [RPM]	1000			
Maximum permissible speed of rotation without workpiece [RPM]	10			
Product mount	HSK C63			
ID	0206636	0206637	0206638	0206639
Minimum clamping depth [mm]	37.6	37	41	48.5
Piston stroke, theoretical [mm]	4.5	5.5	6	8
Actuating force, theoretical [kN]	5.0	3.6	3.4	2.7
Clamping force, theoretical [kN]	6.5	31	29	46
Maximum transmittable torque, theoretical [Nm]	6	36	51	118
Expansion rate [mm]	0.034	0.052	0.057	0.080
Clamping diameter, product [mm]	12 +0.005/+0.002	20 +0.009/+0.006	22 +0.009/+0.006	32 +0.011/+0.008
Clamping length [mm]	32.1	31.5	35.5	42.5
Workpiece diameter [mm]	12 h7 (0/-0.018)	20 h7 (0/-0.021)	22 h7 (0/-0.021)	32 h7 (0/-0.025)
Set-screw, intermediate sleeve lock	M4	M4	M4	M4 / M6
Weight [kg]	approx. 1.8	approx. 1.8	approx. 1.8	approx. 2.0

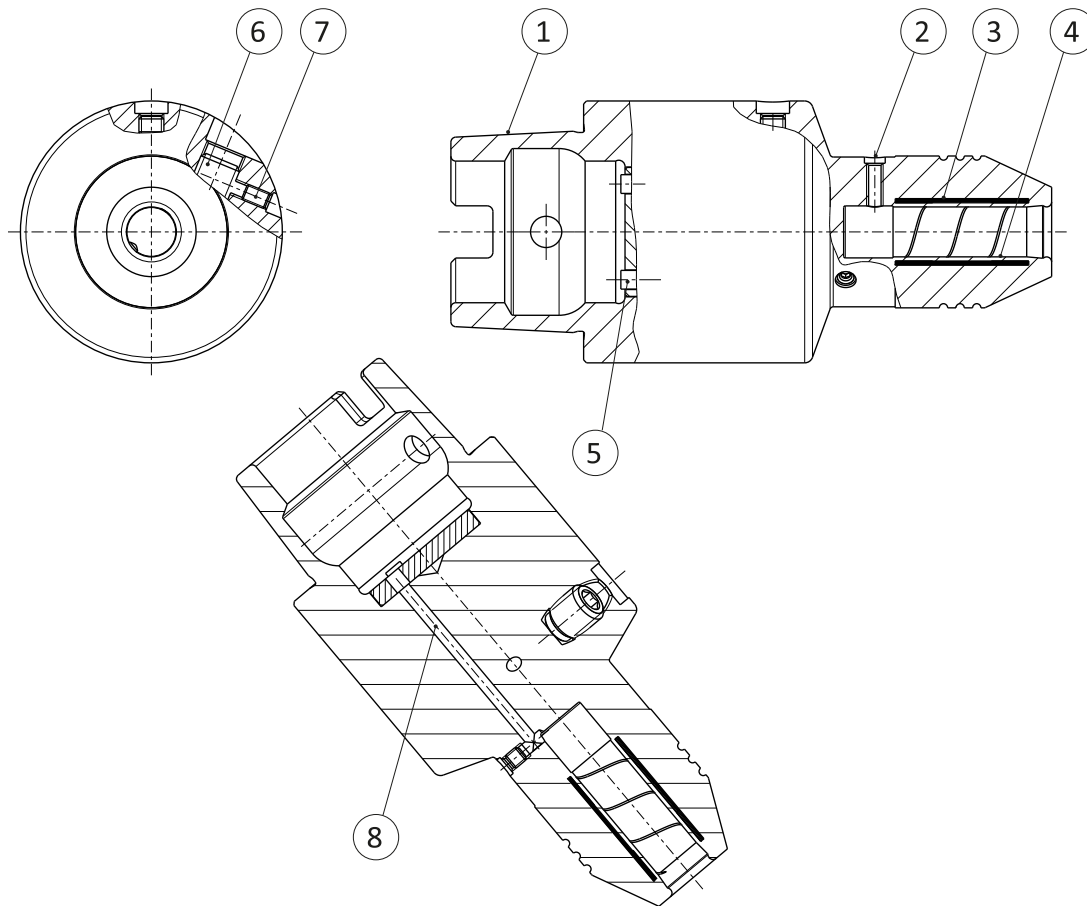
3.2 Ambient conditions and operating conditions

Operating temperature range	+18°C to +25°C
Maximum product temperature	+35°C
Test temperature range for the expansion rate check	+23°C $\pm$ 2°C
Storage temperature range	+20°C $\pm$ 10°C

NOTE: The temperatures refer to the product.

4 Design and description

4.1 Design



NOTE: Illustration may differ from the actual design.

Position	Description
1	Product mount
2	Locking screw thread, intermediate sleeve
3	Active clamping length
4	Clamping surface
5	Clamping piston
6	Reducing screw
7	Reducing screw clamping screw
8	Pressurized air hole

4.2 Description of function

This product clamps hydraulically with compression force actuation. For this purpose, the clamping piston of the product is actuated by a machine piston and retracted up to the stop.

To achieve the maximum expansion rate, and the related maximum clamping force, the corresponding actuating force must be applied by the machine. The stroke limitation protects the product against over-expansion.

The volume of oil that is squeezed out of the piston chamber is pressed in measured amounts against the thin-walled expansion sleeve. The resulting internal pressure radially presses against the thin-walled expansion sleeve, causing the clamping range to expand evenly along the entire active clamping length, centrally equal to the middle axis. The workpiece is clamped.

Reducing the actuating force causes a reduction of the pressure in the piston chamber and in the expansion chamber. The thin-walled expansion sleeve then returns radially to its exact home position. The workpiece can be removed.

To compensate for possible oil loss due to leakage, the product is equipped with an adjustment screw. This makes it possible to readjust the oil pressure in the expansion sleeve.

4.3 Integrated additional functions

4.3.1 Reducing screw

The reducing screw regulates the expansion rate and therefore also the clamping force. The lower the expansion rate, the lower the clamping force. The reducing screw can be used to respond to different workpiece tolerances and ensure reliable clamping.

5 Assembly

5.1 Basic information



⚠ WARNING

Risk of injury due to incorrect assembly!

If assembled incorrectly, the product may be flung out during rotation, causing severe injuries.

- Observe the pull-down forces of the HSK vise.
- Regularly check the fastening of the product.
- Take suitable protective measures to secure the danger zone.
- Wear suitable protective equipment.



⚠ WARNING

Risk of injury if the product falls during transport, assembly or disassembly.

Due to the oily surface required to preserve it, the product can slip through your hands, resulting in injury.

- Take appropriate safety measures to prevent the product from falling.
- Only install the product on machines with the appropriate connection dimensions.
- Wear suitable protective equipment, especially safety gloves.



⚠ CAUTION

Risk of crushing and impact when assembling and disassembling the product!

- Do not reach between the product and machine.
- Wear suitable protective equipment.

CAUTION

Possible damage to the expansion sleeve!

- When transporting and handling the product, ensure that it is not damaged by knocks, impacts, etc.
- It is essential that the thin-walled clamping face (expansion sleeve) is protected against shocks and impacts.

5.2 Assembly of the product

To ensure optimal machining results, the product must be precisely positioned and secured on the machine interface.

NOTE: Only mount the product and attachments on machines with suitable connection dimensions. Observe the mounting instructions from the machine interface manufacturer.

1. Observe the technical data ► 3 [14] and the marking on the product.
2. Clean all interfaces on the product and machine.
3. Place the product on the machine interface in the correct position and fit it as far as the stop.
4. Clamp the product according to the specifications of the machine interface manufacturer.

IMPORTANT! Safe and correct mounting of the product on the machine interface must be ensured.

6 Settings and functional testing

6.1 Basic information



⚠ WARNING

Risk of injury and material damage due to the expansion sleeve cracking.

If the expansion sleeve cracks, oil may be emitted at high pressure and chips or broken pieces may fly off, causing severe injuries.

- Avoid knocking or banging the expansion sleeve.
- The specified expansion rate may not be exceeded.
- Observe the inspection temperature specified in the technical data to check the expansion rate.
- Take suitable protective measures to secure the danger zone.
- Wear suitable protective equipment.

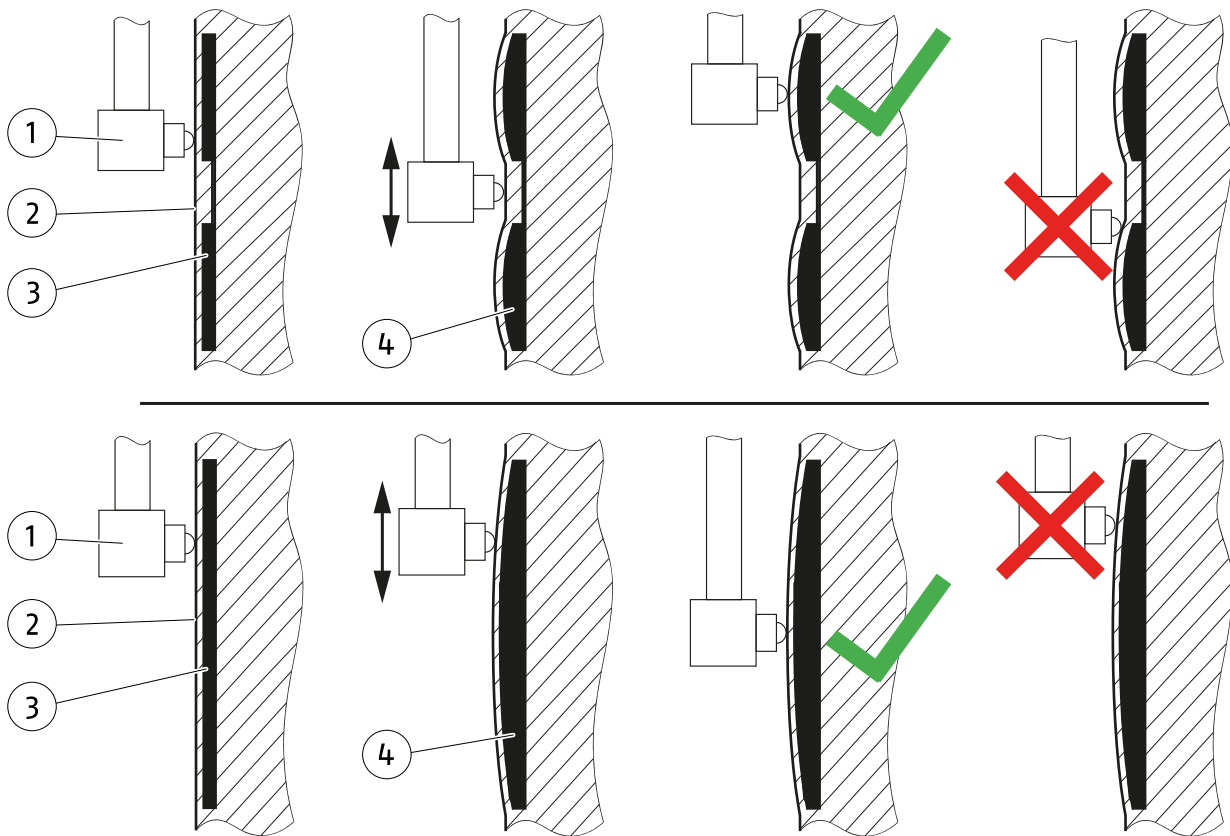
To ensure correct operation and to test the product functions, various settings and functional checks must be carried out before initial operation. These may vary depending on the version and are described in the following sub-chapters.

NOTE: The product may only be operated without a workpiece for the settings and functional tests!

If you have any questions regarding settings and functional tests, our technical after-sales service is available during our business hours:

Service telephone: +49-7133-103-2956
service.toolholder@de.schunk.com

6.2 Adjusting the actuating force



NOTE: Illustration is for reference only. Shape of the expansion chamber may differ.

Position	Description
1	Measuring device
2	Clamping face
3	Expansion chamber (unclamped)
4	Expansion chamber (clamped)

Before initial operation, check the expansion rate to adjust the actuating force.

To do this, use a measuring device that meets the following requirements:

- Either two-point inside caliper or dial gauge outside micrometer
NOTE: The measuring device must be spring-loaded!
- Measuring resolution of 0.001 mm
- Analog dial gauge
- Sufficiently large range of measurement (greater than expansion rate)

CAUTION! Observe the test temperature for the expansion rate check ▶ 3.2 [15]!

1. Observe the technical data ▶ 3 [14] and the marking on the product.
2. Make sure that the product is mounted correctly.
3. Make sure that the product is in an unclamped state.
4. Clean clamping surfaces.
5. Place the measuring device at the center of the clamping surface and set it to zero. **NOTE:** Make sure that the dirt groove (if present) on the clamping surface does not influence the measuring equipment!
6. Carefully apply a constantly increasing actuating force to the product via the machine from 0 until a change in the clamping diameter is visible on the measuring device.
 - ⇒ Product is pre-loaded, the expansion chamber has deformed the clamping surface.
7. Move the measuring device on the clamping surface until the point with the highest deflection is determined.
8. Position the measuring device at the point with the highest deflection.
9. Carefully apply constantly increasing actuating force to the product until the difference on the measuring device matches the expansion rate ▶ 3 [14] specified in the technical data.
CAUTION! As soon as the expansion rate is reached, do not increase the actuating force any further!
10. Note the actuating force applied when the expansion rate is reached.
11. Return the actuating force of the machine to 0.
12. Apply previously determined actuating force to the product and measure the time until the expansion rate ▶ 3 [14] specified in the technical data is reached. **IMPORTANT! The actuating duration must be longer than 2 seconds!**
13. Return the actuating force of the machine to 0.

NOTE

If the expansion rate given in the technical data is not reached, our technical after-sales service is available during our business hours:

Service telephone: +49-7133-103-2956
service.toolholder@de.schunk.com

6.3 Checking the clamping function

1. Observe the technical data ▶ 3 [14] and the marking on the product.
2. Make sure that the product is mounted correctly.
3. Make sure that the product is in an unclamped state.
4. Place the test workpiece on the product in the correct position and up to the stop without exerting too much force.
IMPORTANT! Observe the minimum clamping depth ▶ 3 [14]!
5. Clamp the test workpiece with the previously determined actuating force.
6. Check that the test workpiece is firmly in place.

IMPORTANT! The actuating duration must be longer than 2 seconds.

7 Operation

7.1 Basic information



⚠ WARNING

Risk of injury when the product is rotating, due to the possibility of parts flying off.

- Comply with technical data.
- Ensure correct installation and seating of existing add-on and functional components.
- Check clamping force regularly.
- Take appropriate protective measures to secure danger zones.
- Wear suitable protective equipment.



⚠ WARNING

Risk of injury due to throwing the workpiece out at too high or non-adjusted rotation speeds.

- Comply with technical data.
- The maximum rotation speed must not be exceeded.
- Reduce the speed appropriately in the case of widely overhanging or unbalanced workpieces.
- Take appropriate protective measures to secure danger zones.
- Wear suitable protective equipment.



⚠ WARNING

Risk of injury and property damage from bursting of the expansion sleeve.

If the expansion sleeve does burst, it is possible that oil will leak at high pressure, and fragments and broken pieces could be hurled out, causing severe injuries.

- Avoid knocks and impacts to the expansion sleeve.
- Always cover the entire clamping length of the product.
- Do not exceed the specified expansion rate.
- When the product is clamped, the maximum operating temperature must not be exceeded.
- Operate the product only in the optimum operating temperature range.
- Take appropriate protective measures to secure the danger zone.
- Wear suitable protective equipment.



⚠ WARNING

Risk of injury due to throwing out of the workpiece if the actuating force is too low or not applied.

- Comply with technical data.
- Regularly check actuating force and machine piston.
- Take appropriate protective measures to secure danger zones.
- Wear suitable protective equipment.



⚠ CAUTION

Risk of crushing, impact, and cutting when changing workpieces.

- When changing the workpiece, do not reach in between the product and the workpiece.
- Prevent unintentional actuation of the product.
- Wear suitable protective equipment, especially gloves.

CAUTION

Possibility of increased wear, reduced service life, and reduced accuracy of the expansion sleeve.

If the surface to be clamped on the workpiece is interrupted, the thin-walled expansion sleeve will over-expand at these points (lack of back pressure!).

- Interruptions should be avoided along the surface of the workpiece to be clamped.
- Cover the complete active clamping length of the product.

7.2 Clamping the workpiece

The product must be unclamped when loading the workpiece. Initial tension inhibits loading and can damage the expansion sleeve.

IMPORTANT! The workpieces to be clamped must be deburred at the surfaces that contact the product, have no sharp contours and be free of oil, grease and dirt.

When fitting and clamping the workpiece, the following points must be taken into account:

- It is important to ensure that the product is first securely clamped on the machine interface before the workpiece is loaded and clamped.
- During operation, the product may heat up due to the forces applied and external influences. This causes the oil to expand. To compensate for this expansion, when unclamping the workpiece, it must be possible for the clamping piston to move 2–3 mm back from the initial position, in the opposite direction to the actuating direction.
- The workpiece must be inserted to at least to the minimum clamping depth before clamping.

For clamping, proceed as follows:

1. Observe the technical data ► 3 [14] and the marking on the product.
2. Make sure that the product is mounted correctly.
3. Make sure that the product is in an unclamped state.
4. Clean any dust and dirt from all product surfaces that come into contact with the workpiece.
5. If necessary, mount a suitable intermediate sleeve ► 7.4 [28].
6. Place the workpiece on the product in the correct position and up to the stop without exerting too much force.
IMPORTANT! Observe the minimum clamping depth ► 3 [14]!
7. **CAUTION! The duration of actuation must be longer than 2 seconds!** Clamp the workpiece with the previously set actuating force.
8. Check that the workpiece is firmly in place.

IMPORTANT! To guarantee reliable clamping during operation, the actuating force must not be more or less than the calculated value.

7.3 Unclamping the workpiece

1. Return the actuating force of the machine to 0.
2. Remove the workpiece.

7.4 Using the intermediate sleeve



⚠ WARNING

Risk of injury due to the intermediate sleeve being hurled out or breaking

When operating the product without a workpiece, the intermediate sleeve can break or be hurled out.

- Only operate the product with a clamped workpiece.
- Take appropriate protective measures to secure the danger zone.

CAUTION

Impairment of the clamping function and damage to the product!

The use of incorrect or unsuitable intermediate sleeves may impair the clamping function of the product or damage the product.

- Comply with the technical data.
- Only use suitable and approved intermediate sleeves.

Depending on the design of the product, an intermediate sleeve is required to reduce the clamping diameter. It is possible to use different types of intermediate sleeves with this product. We generally recommend the use of intermediate sleeves from SCHUNK.

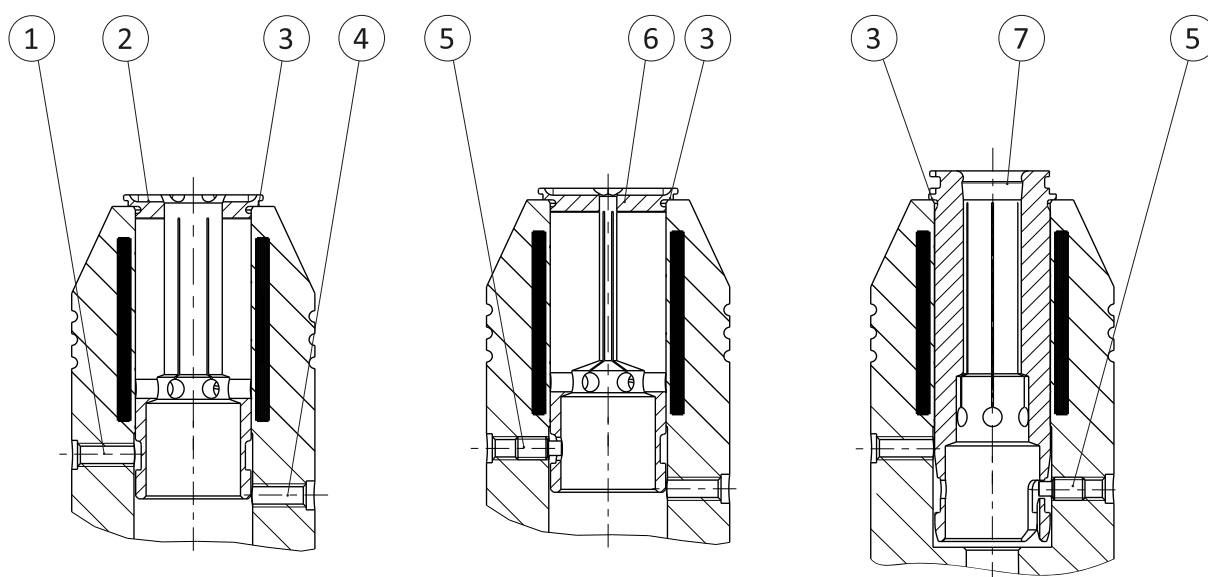
IMPORTANT! Only mount or change the intermediate sleeve when the product is unclamped!

IMPORTANT! When using an intermediate sleeve, never operate the product without a clamped workpiece!

7.4.1 Assembly/disassembly of the intermediate sleeve

The following intermediate sleeves can be used to reduce the clamping diameter:

- Intermediate sleeve without lock
Suitable for manual intermediate sleeve change and manual tool change
- Intermediate sleeve with lock via set-screw
Suitable for manual intermediate sleeve change and automatic tool change
- Intermediate sleeve with bayonet locking mechanism via set-screw
Suitable for automatic intermediate sleeve change and automatic tool change



NOTE: Illustration may differ from the actual design.

Position	Description
1	Threaded hole for intermediate sleeve with lock
2	Intermediate sleeve without lock
3	Stop face, intermediate sleeve
4	Threaded hole for intermediate sleeve with bayonet locking mechanism
5	Set-screw with pin
6	Intermediate sleeve with lock
7	Intermediate sleeve with bayonet locking mechanism

7.4.1.1 Intermediate sleeve without lock

Assembly

1. Return the actuating force of the machine to 0.
2. Make sure that the product is in an unclamped state.
3. Place the intermediate sleeve on the product in the correct position and fit it as far as the stop without exerting too much force.

Disassembly

1. Remove the workpiece ► 7.3 [📄 28].
2. Make sure that the product is in an unclamped state.
3. Carefully and evenly pull out the intermediate sleeve, keeping it parallel. For this purpose, we recommend the use of a sleeve remover.

IMPORTANT! Danger of cutting injuries when changing the intermediate sleeve with workpiece! We always recommend using the workpiece and intermediate sleeve separately.

7.4.1.2 Intermediate sleeve with lock via set-screw

Assembly

1. Return the actuating force of the machine to 0.
2. Make sure that the product is in an unclamped state.
3. Place the intermediate sleeve onto the product in the correct position and fit it as far as the stop without exerting too much force, ensuring it remains parallel.

IMPORTANT! Make sure that the bore hole of the intermediate sleeve matches the position of the bore hole of the set-screw. Otherwise the intermediate sleeve cannot be secured.

4. Screw in the set-screw only so far that the intermediate sleeve cannot be removed, but still has some clearance.

IMPORTANT! If the set-screw is screwed in too far, the workpiece loading will be obstructed and run-out errors may occur!

Disassembly

1. Remove the workpiece ► 7.3 [📄 28].
2. Make sure that the product is in an unclamped state.
3. Unscrew the set-screw.
4. Carefully and evenly pull out the intermediate sleeve, keeping it parallel. For this purpose, we recommend the use of a sleeve remover.

IMPORTANT! If no other intermediate sleeve is fitted after disassembly, unscrew the set-screw completely.

7.4.1.3 Intermediate sleeve with bayonet and lock via set-screw

Assembly

1. Return the actuating force of the machine to 0.
2. Make sure that the product is in an unclamped state.
3. Only screw in the set-screw until the bayonet lock of the intermediate sleeve can grip securely.
IMPORTANT! If the set-screw is screwed in too far, run-out errors may occur!
4. Place the intermediate sleeve on the product in the correct position and fit it as far as the stop, ensuring it remains parallel.
NOTE: Make sure that the opening of the bayonet lock is aligned with the position of the set-screw. Otherwise the intermediate sleeve cannot be joined.
5. Turn the intermediate sleeve counterclockwise as far as the stop.

Disassembly

1. Remove the workpiece ► 7.3 [28].
2. Make sure that the product is in an unclamped state.
3. Turn the intermediate sleeve clockwise as far as the stop.
NOTE: Set-screw does not have to be unscrewed for this purpose.
4. Carefully and evenly pull out the intermediate sleeve, keeping it parallel. For this purpose, we recommend the use of a sleeve remover.

IMPORTANT! If no other intermediate sleeve is fitted after disassembly, unscrew the set-screw completely.

7.5 Using the reducing screw



⚠ WARNING

Risk of injury due to ejection of the workpiece in the event of loss of clamping force due to reducing the expansion rate!

After reducing the expansion rate via the reducing screw, the workpiece can become loose on loss of clamping force and lead to severe injuries.

- Take suitable protective measures to secure the danger zones.
- Wear suitable protective equipment.

The reducing screw is used to reduce the expansion rate and therefore also the clamping force. This allows the machining results to be improved, especially with easily deformable workpieces.

CAUTION! The expansion rate can be reduced to such an extent that there is no longer any clamping force!

1. Remove the intermediate sleeve ▶ 7.4 [📄 28].
2. Apply the set actuating force to the product.
3. Check expansion rate.
4. If present: Loosen the clamping screw of the reducing screw.
5. Unscrew the reducing screw carefully.
⇒ Stretch rate decreases.
6. Check the expansion rate for the desired reduction.
7. Once the desired reduction of the expansion rate has been set, retighten the clamping screw of the reducing screw (if present).
8. Unclamp the product ▶ 7.3 [📄 28].
9. Mount the correct intermediate sleeve ▶ 7.4 [📄 28].
10. Check the clamping function ▶ 6.3 [📄 24].

NOTE: By inserting the reducing screw, the original expansion rate or clamping force can be restored.

8 Maintenance

8.1 Basic information



⚠ WARNING

Risk of injury and material damage due to the expansion sleeve cracking.

If the expansion sleeve cracks, oil may be emitted at high pressure and chips or broken pieces may fly off, causing severe injuries.

- Avoid knocking or banging the expansion sleeve.
- The specified expansion rate may not be exceeded.
- Observe the inspection temperature specified in the technical data to check the expansion rate.
- Take suitable protective measures to secure the danger zone.
- Wear suitable protective equipment.



⚠ CAUTION

Injury of the eyes by dirt particles

When cleaning with compressed air, the eyes may be injured by flying dirt particles.

- Wear suitable protective equipment, particularly protective goggles.

CAUTION

Possible damage to the product and function restrictions!

Removing components of the product may disable an additional function or damage the product by allowing an ingress of particles.

- Attachments are only allowed to be removed if this is expressly described in the operating manual or if written approval has been obtained from SCHUNK.

For trouble-free, long-lasting use, clean, maintain and check the functionality of the product regularly.

Repair work may only be carried out by SCHUNK!

If you have any questions regarding maintenance and servicing, our technical customer service is available during our business hours:

Service telephone: +49-7133-103-2956
service.toolholder@de.schunk.com

8.2 Intervals and tasks

Operation	Interval period
Clean the clamping surface and workpiece stop face	after every clamping procedure
Cleaning the product	daily
Cleaning the pressurized air hole	weekly or after 1000 clampings
Check the expansion rate	weekly or after 1000 clampings
Lubricate the reducing screw	monthly
Polish the clamping surface	weekly or after 1000 clamping operations as required
Disassembly/changing of the intermediate sleeve	for workpiece changes, for maintenance purposes, in the event of damage or signs of wear

The specified maintenance intervals are based on empirical data gathered by SCHUNK and are a recommendation. Depending on the ambient and operating conditions, as well as the clamping frequency of the product, the maintenance intervals need to be adapted and noted accordingly. For maintenance intervals with two or more specifications, the specification that applies first is valid.

After completing essential maintenance work, any required settings and functional tests must be carried out again ► 6 [20].

8.2.1 Clean the clamping surface and workpiece stop face

1. Remove the workpiece ► 7.3 [📄 28].
2. Make sure that the product is in an unclamped state.
3. Clean the clamping face and workpiece stop face using compressed air.
4. Wipe the surfaces dry with a clean cloth.

8.2.2 Clean the product

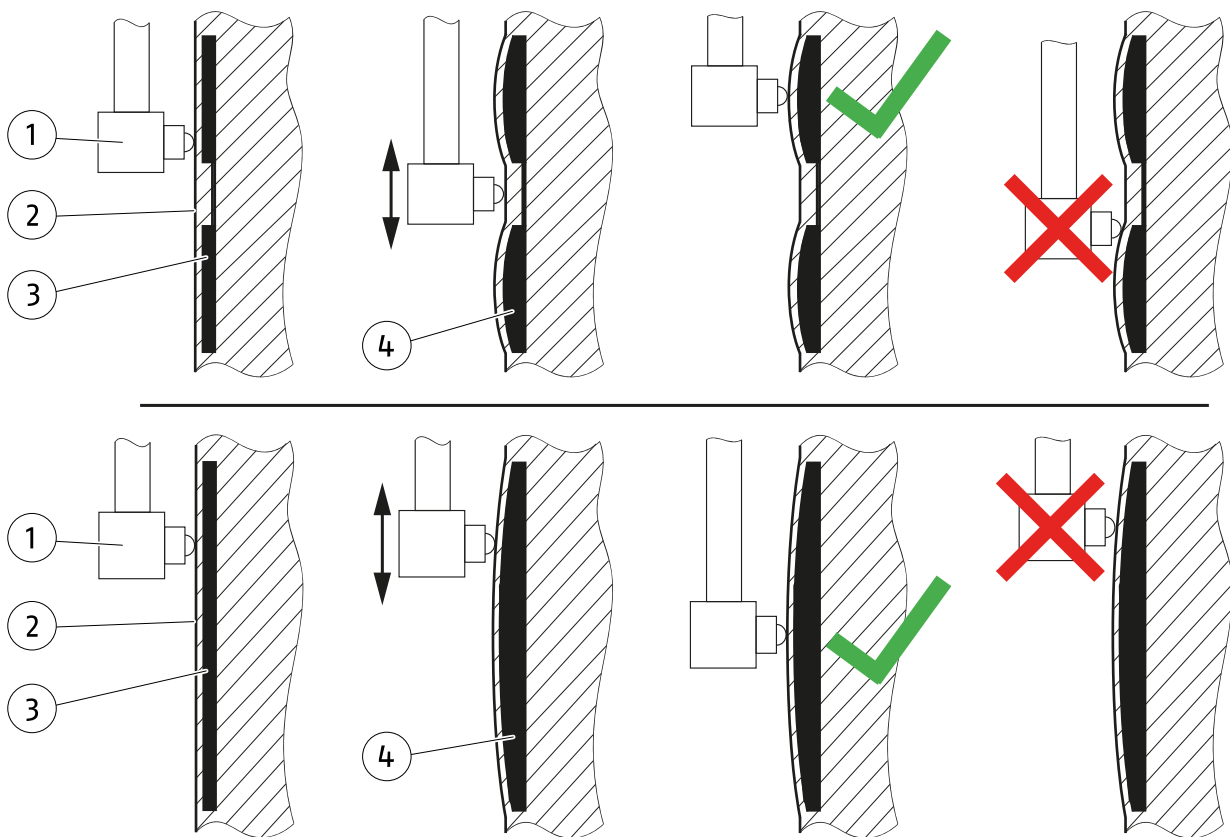
1. Remove the workpiece ► 7.3 [📄 28].
2. Make sure that the product is in an unclamped state.
3. Clean the entire product with compressed air.
4. Carefully remove any stubborn dirt with a suitable tool.
5. Wipe all surfaces dry with a clean cloth.
6. Check the product for deformation, damage or wear, in particular the surfaces that come in contact with the workpiece and replace if necessary.

NOTE: Damage or wear can compromise the functioning of the product. If non-replaceable parts of the product are worn or damaged, return the product to SCHUNK for inspection.

8.2.3 Cleaning the pressurized air hole

1. Remove the workpiece ► 7.3 [📄 28].
2. Clean the pressurized air hole with compressed air.
3. Carefully remove any stubborn dirt with a suitable tool.

8.2.4 Check the expansion rate



NOTE: Illustration is for reference only. Shape of the expansion chamber may differ.

Position	Description
1	Measuring device
2	Clamping face
3	Expansion chamber (unclamped)
4	Expansion chamber (clamped)

Check the expansion rate according to the information in the maintenance table.

To do this, use a measuring device that meets the following requirements:

- Either two-point inside caliper or dial gauge outside micrometer
NOTE: The measuring device must be spring-loaded!
- Measuring resolution of 0.001 mm
- Analog dial gauge
- Sufficiently large range of measurement (greater than expansion rate)

CAUTION! Observe the test temperature for the expansion rate check ▶ 3.2 [15]!

1. Observe the technical data ▶ 3 [14] and the marking on the product.
2. Remove the workpiece ▶ 7.3 [28].
3. Remove the intermediate sleeve if mounted ▶ 8.2.7 [46].
4. Make sure that the product is in an unclamped state.
5. Clean the clamping surface.
6. Place the measuring device at the center of the clamping surface and set it to zero. **NOTE:** Make sure that the dirt groove (if present) on the clamping surface does not influence the measuring device!
7. Apply the set actuating force to the product.
8. Move the measuring device on the clamping surface until the point with the highest deflection is determined.
9. The difference on the measuring device must match the expansion rate ▶ 3 [14] specified in the technical data.
10. Return the actuating force of the machine to 0.

If the expansion rate specified in the technical data is not achieved, then

- the hydraulic system has lost too much oil,
- the clamping diameter is heavily worn,
- the reducing screw is unscrewed too far,
- or the settings of the machine have been changed.

If the reducing screw is screwed in, the machine settings are unchanged or if a readjustment of the actuating force is unsuccessful, send the product to SCHUNK for inspection.

8.2.5 Lubricate the reducing screw



⚠ CAUTION

Allergic reactions if lubricating grease comes into contact with the skin.

- Wear protective gloves.

To prevent wear to the reducing screw, the lubrication has to be adapted to the operating and ambient conditions.

This is especially relevant

- in case of intensive cleaning.
- or when used with added coolant.

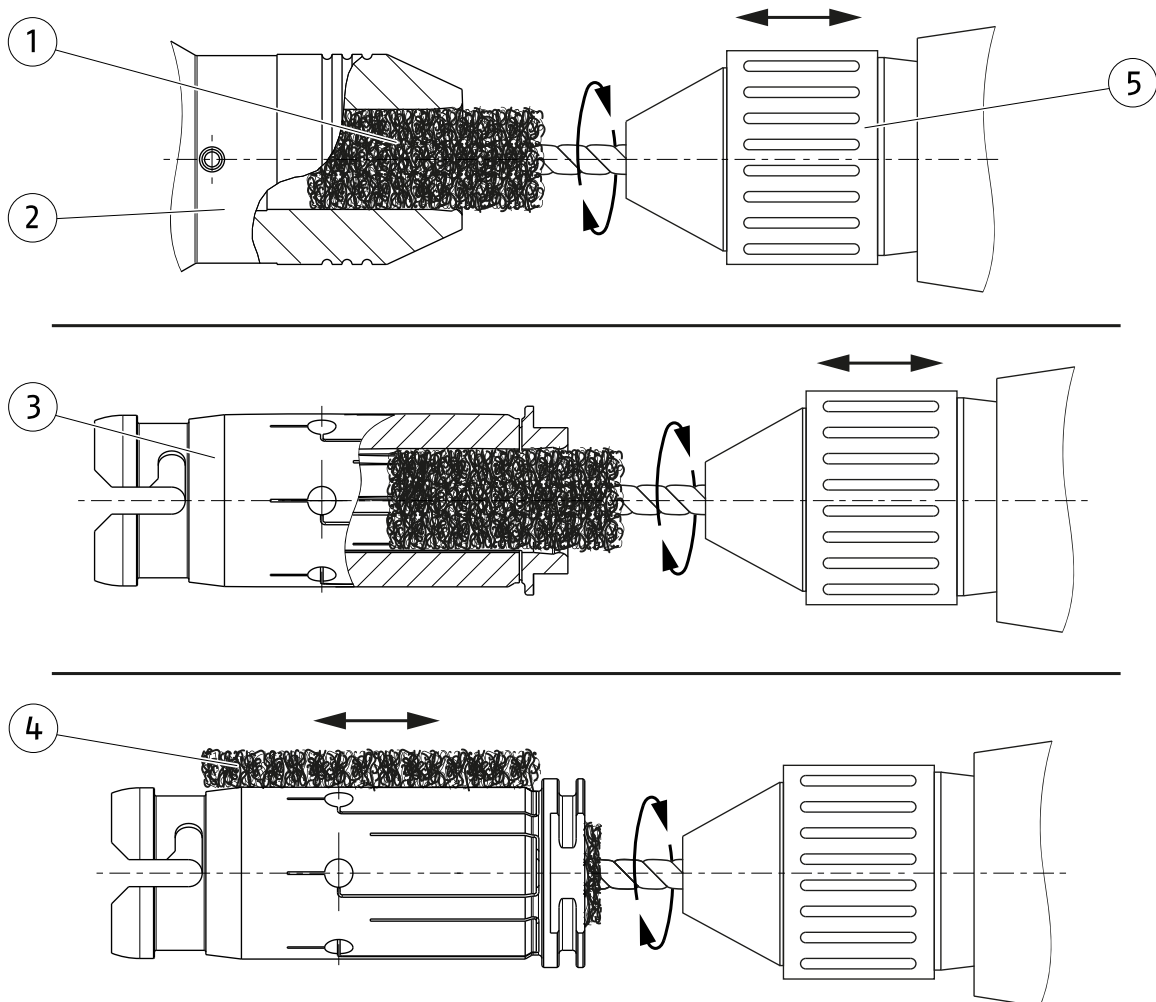
For lubrication, we recommend copper paste type MOLYKOTE CU 7439 (100 g tube, ID 9247204).

When lubricating, proceed as follows:

1. Observe the technical data ▶ 3 [14] and the marking on the product.
2. Remove the workpiece ▶ 7.3 [28].
3. Make sure that the product is in an unclamped state.
4. Screw in the reducing screw completely.
5. Lubricate the thread of the reducing screw in accordance with the operating conditions.
6. Unscrew the reducing screw as far as the lock.
7. Screw in the reducing screw.
8. Check the expansion rate ▶ 8.2.4 [38].

8.2.6 Polish the clamping surface

A clamping surface that becomes soiled during operation can make it difficult to insert workpieces. To remove the impurities, the affected surfaces must be polished.



NOTE: Illustration is for reference only.

Position	Description
1	Tube brush wrapped with abrasive fleece
2	Product
3	Intermediate sleeve
4	Abrasive fleece
5	Cordless screwdriver

NOTE

If you have any questions regarding polishing, our technical after-sales service is available during our business hours.

Service telephone: +49-7133-103-2956
service.toolholder@de.schunk.com

8.2.6.1 Polishing the product's clamping surface

1. Remove the workpiece ► 7.3 [📄 28].
2. Make sure that the product is in an unclamped state.
3. If present, remove the: intermediate sleeve ► 7.4 [📄 28].
4. If present, remove all intermediate sleeve locks such as set-screws.
5. Select a suitable pipe brush. **NOTE:** The diameter of the pipe brush must be 2 mm less than the clamping diameter of the product.
6. Clamp the pipe brush in the cordless screwdriver. Observe the specifications in the cordless screwdriver operating manual.
7. Wrap the abrasive fleece around the pipe brush.
8. Secure product against twisting.
9. Insert the pipe brush wrapped with abrasive fleece into the clamping bore.
10. Actuate cordless screwdriver, thereby
 - ⇒ not exceeding a speed of 1200 rpm and
 - ⇒ move the pipe brush wrapped with the abrasive fleece back and forth several times.
11. Remove the pipe brush wrapped with abrasive fleece from the clamping bore.
12. Clean the clamping bore with a clean cloth and compressed air to remove residue from the polishing process.
13. Insert the test workpiece. **NOTE:** If the test workpiece cannot be inserted smoothly, repeat steps 7 to 12.
14. If required, install intermediate sleeve fuses.
15. If required, install the intermediate sleeve ► 7.4 [📄 28].

8.2.6.2 Polishing the clamping surfaces of the intermediate sleeve

For polishing the bore of the intermediate sleeve:

1. Remove the intermediate sleeve ► 7.4 [28].
2. Select a suitable pipe brush. **NOTE:** The diameter of the pipe brush must be 2 mm less than the borehole of the intermediate sleeve.
3. Clamp the pipe brush in the cordless screwdriver. Observe the specifications in the cordless screwdriver operating manual.
4. Wrap the abrasive fleece around the pipe brush.
5. Secure the intermediate sleeve against twisting.
6. Insert the pipe brush wrapped with abrasive fleece into the clamping bore.
7. Actuate cordless screwdriver, thereby
 - ⇒ not exceeding a speed of 1200 rpm and
 - ⇒ move the pipe brush wrapped with the abrasive fleece back and forth several times.
8. Clean the clamping bore with a clean cloth and compressed air to remove residue from the polishing process.
9. Remove any dirt stuck in the slots of the intermediate sleeve using a suitable feeler gauge.
10. Insert the test workpiece. **NOTE:** If the test workpiece cannot be inserted easily, repeat steps 4 to 9.
11. Mount intermediate sleeve ► 7.4 [28].

Polishing the sheath surface of the intermediate sleeve:

1. Remove the intermediate sleeve ► 7.4 [📄 28].
2. Select a suitable pipe brush. **NOTE:** The diameter of the pipe brush must be 2 mm less than the borehole of the intermediate sleeve.
3. Clamp the pipe brush in the cordless screwdriver. Observe the specifications in the cordless screwdriver operating manual.
4. Wrap the abrasive fleece around the pipe brush.
5. Insert the pipe brush wrapped with abrasive fleece into the clamping bore.
 - ⇒ The intermediate sleeve is clamped and rotates when the cordless screwdriver is actuated.
6. Actuate cordless screwdriver, thereby
 - ⇒ not exceeding a speed of 1200 rpm.
7. Press the abrasive fleece against the sheath surface and move it back and forth several times.
8. Clean the sheath surface of residue from the polishing procedure using a clean cloth and compressed air.
9. Remove any dirt stuck in the slots of the intermediate sleeve using a suitable feeler gauge.
10. Insert the intermediate sleeve into an unclamped product (e.g. tool grinding chuck). **NOTE:** If the intermediate sleeve cannot be inserted easily, repeat steps 4 to 9 or check the clamping bore of the product and polish if necessary.
11. Mount intermediate sleeve ► 7.4 [📄 28].

8.2.7 Disassembly/changing of the intermediate sleeve

Any inserted intermediate sleeve must be disassembled for maintenance. If there are signs of wear or damage, the intermediate sleeve must be replaced.

IMPORTANT! Only change the intermediate sleeve when the product is unclamped!

8.2.7.1 Intermediate sleeve without lock

Disassembly

1. Remove the workpiece ► 7.3 [28].
2. Make sure that the product is in an unclamped state.
3. Carefully and evenly pull out the intermediate sleeve, keeping it parallel. For this purpose, we recommend the use of a sleeve remover.

Assembly

1. Return the actuating force of the machine to 0.
2. Make sure that the product is in an unclamped state.
3. Place the intermediate sleeve on the product in the correct position and fit it as far as the stop without exerting too much force.

8.2.7.2 Intermediate sleeve with lock via set-screw

Disassembly

1. Remove the workpiece ▶ 7.3 [28].
2. Make sure that the product is in an unclamped state.
3. Unscrew the set-screw.
4. Carefully and evenly pull out the intermediate sleeve, keeping it parallel. For this purpose, we recommend the use of a sleeve remover.

IMPORTANT! If no other intermediate sleeve is fitted after disassembly, unscrew the set-screw completely.

Assembly

1. Return the actuating force of the machine to 0.
2. Make sure that the product is in an unclamped state.
3. Place the intermediate sleeve onto the product in the correct position and fit it as far as the stop without exerting too much force, ensuring it remains parallel.

IMPORTANT! Make sure that the bore hole of the intermediate sleeve matches the position of the bore hole of the set-screw. Otherwise the intermediate sleeve cannot be secured.

4. Screw in the set-screw only so far that the intermediate sleeve cannot be removed, but still has some clearance.

IMPORTANT! If the set-screw is screwed in too far, the workpiece loading will be obstructed and run-out errors may occur!

8.2.7.3 Intermediate sleeve with bayonet and lock via set-screw

Disassembly

1. Remove the workpiece ► 7.3 [28].
2. Make sure that the product is in an unclamped state.
3. Turn the intermediate sleeve clockwise as far as the stop.
NOTE: Set-screw does not have to be unscrewed for this purpose.
4. Carefully and evenly pull out the intermediate sleeve, keeping it parallel. For this purpose, we recommend the use of a sleeve remover.

IMPORTANT! If no other intermediate sleeve is fitted after disassembly, unscrew the set-screw completely.

Assembly

1. Return the actuating force of the machine to 0.
2. Make sure that the product is in an unclamped state.
3. Only screw in the set-screw until the bayonet lock of the intermediate sleeve can grip securely.
IMPORTANT! If the set-screw is screwed in too far, run-out errors may occur!
4. Place the intermediate sleeve on the product in the correct position and fit it as far as the stop, ensuring it remains parallel.
NOTE: Make sure that the opening of the bayonet lock is aligned with the position of the set-screw. Otherwise the intermediate sleeve cannot be joined.
5. Turn the intermediate sleeve counterclockwise as far as the stop.

9 Troubleshooting

Malfunction/error	Possible cause	Solution(s)
Workpiece is not clamped	Intermediate sleeve not mounted	Mount intermediate sleeve ▶ 7.4 [28]
	The machine settings have been changed	Check actuating force ▶ 6.2 [22]
	Reducing screw is unscrewed too far	Insert the reducing screw
	Wear on the clamping diameter	Send the product to SCHUNK for inspection
	Oil loss on the product	Send the product to SCHUNK for inspection
Workpiece cannot be joined	Product is not completely unclamped	Unclamping the product ▶ 7.3 [28]
	Solidified dirt on the clamping surface	Polish the clamping surface ▶ 8.2.6 [42]
Workpiece cannot be removed	Product is not completely unclamped	Unclamping the product ▶ 7.3 [28]
Insufficient run-out accuracy	If intermediate sleeve is secured with a set-screw: set-screw screwed in too far	Unscrew the set-screw slightly.
	Product is not correctly positioned on the machine interface	Clean the contact surfaces of the product and machine
	With flange mounting: mounting screws are not tightened correctly	Adhere to the specified tightening torque ▶ 3 [14]

If you have any questions regarding troubleshooting, our technical after-sales service is available during our business hours:

Service telephone: +49-7133-103-2956
service.toolholder@de.schunk.com

10 Disassembly

10.1 Basic information



⚠ WARNING

Risk of injury if the product falls during transport, assembly or disassembly.

Due to the oily surface required to preserve it, the product can slip through your hands, resulting in injury.

- Take appropriate safety measures to prevent the product from falling.
- Only install the product on machines with the appropriate connection dimensions.
- Wear suitable protective equipment, especially safety gloves.



⚠ CAUTION

Risk of crushing and impact when assembling and disassembling the product!

- Do not reach between the product and machine.
- Wear suitable protective equipment.

CAUTION

Possible damage to the expansion sleeve!

- When transporting and handling the product, ensure that it is not damaged by knocks, impacts, etc.
- It is essential that the thin-walled clamping face (expansion sleeve) is protected against shocks and impacts.

10.2 Disassembly of the product

1. Remove the workpiece ► 7.3 [28].
2. Secure the product against falling down.
3. Loosen connection to the machine interface. Observe the machine manufacturer's specifications.
4. Remove the product.

NOTE: To avoid damage, only place the product on a clean and soft surface.

11 Storage

When storing the product for a longer period of time, observe the following points:

- Clean and lightly oil the product and intermediate sleeve.
- Store the product and intermediate sleeve in a suitable transport container.
- Only store the product and intermediate sleeve in dry rooms.
- Protect the product and intermediate sleeve from excessive temperature fluctuations.
- Comply with the storage temperature specified in the technical data.

NOTE: Before reassembling, clean the product and all attachments ► 8.2.2 [36], check for damage, functionality and tightness. After assembly, all settings and function tests must be carried out again ► 6 [20].

12 Disposal

When disposing of the product, observe the following points:

- Collect any escaping liquids and dispose of them properly in line with the statutory provisions.
- Follow local regulations on dispatching product components for recycling or proper disposal.

NOTE: Alternatively, you can return the product to SCHUNK for correct disposal.

13 Drawings

The assembly and operating manual as well as the valid drawing can be requested in digital format by stating the product ID.

For this, contact our technical after-sales service:

service.toolholder@de.schunk.com

14 Translation of original declaration of incorporation

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

Manufacturer/	SCHUNK SE & Co. KG
Distributor	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:	Tool grinding toolholder
Ident.-Nr.:	0206636; 0206637; 0206638; 0206639;

It is hereby declared that the following essential requirements of the Machinery Directive 2006/42/EC are fulfilled. 1.1.1, 1.1.5, 1.3.4, 1.6.1

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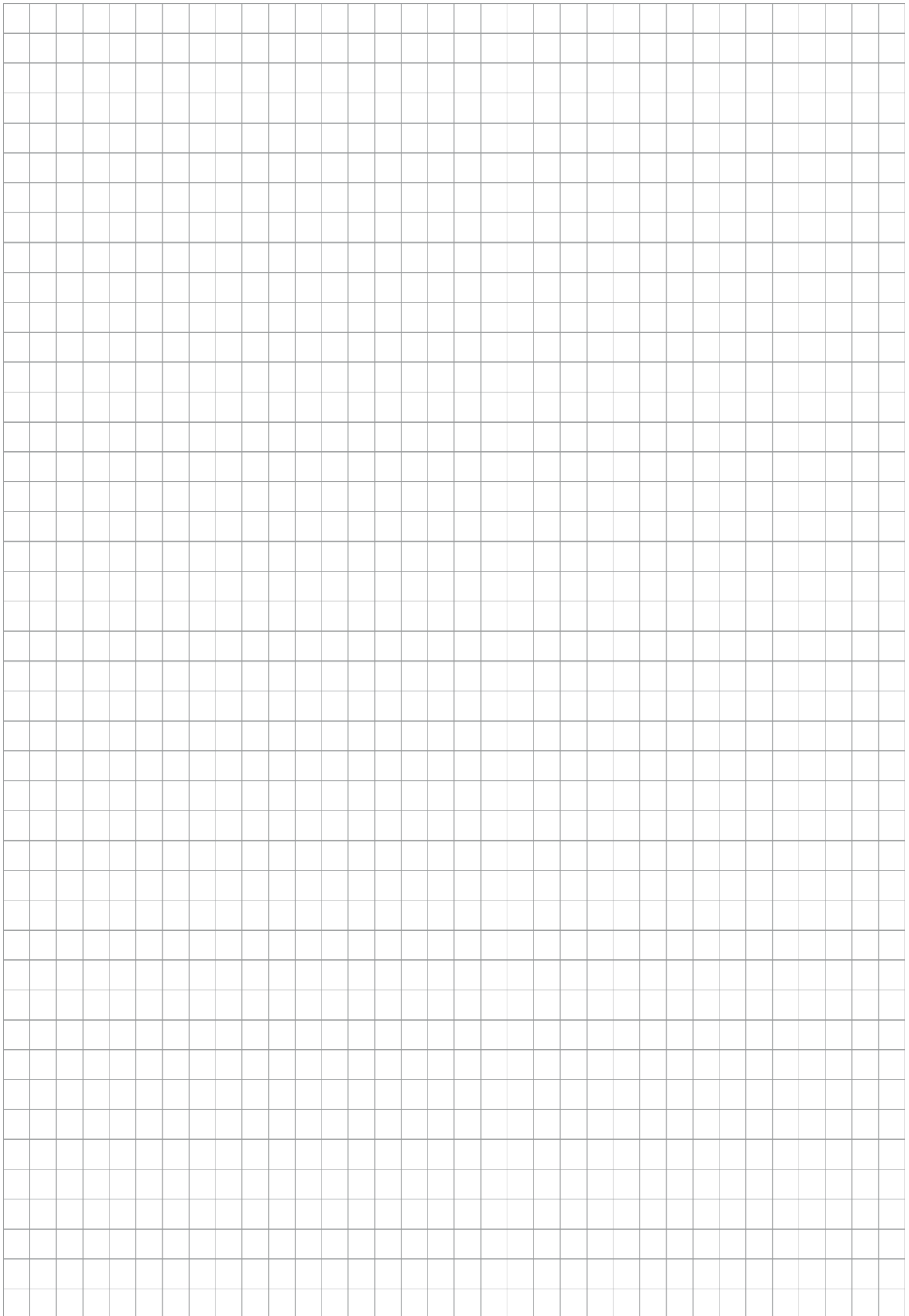
The special technical documentation according to Annex VII, Part B, belonging to the partly completed machine, has been created.

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

Signature: see original declaration

Lauffen/Neckar, November 2022

p.p. Fatih Gülgönül;
Head of Engineering





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