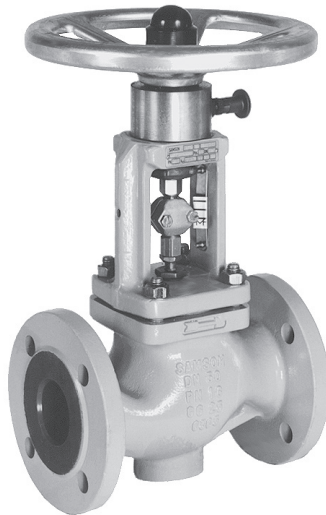


# MOUNTING AND OPERATING INSTRUCTIONS



## EB 8312-3 EN

Translation of original instructions



Type 3273 Hand-operated Actuator  
(mounted on Type 3241 Valve)

## Type 3273 Hand-operated Actuator

Edition April 2024

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## Note on these mounting and operating instructions

These mounting and operating instructions assist you in mounting and operating the device safely. The instructions are binding for handling SAMSON devices. The images shown in these instructions are for illustration purposes only. The actual product may vary.

- For the safe and proper use of these instructions, read them carefully and keep them for later reference.
- If you have any questions about these instructions, contact SAMSON's After-sales Service Department ([aftersaleservice@samsongroup.com](mailto:aftersaleservice@samsongroup.com)).



Documents relating to the device, such as the mounting and operating instructions, are available on our website at [www.samsongroup.com](http://www.samsongroup.com) > **Downloads > Documentation.**

## Definition of signal words

### **DANGER**

*Hazardous situations which, if not avoided, will result in death or serious injury*

### **WARNING**

*Hazardous situations which, if not avoided, could result in death or serious injury*

### **NOTICE**

*Property damage message or malfunction*

### **Note**

*Additional information*

### **Tip**

*Recommended action*

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# 1 Safety instructions and measures

### Intended use

The SAMSON Type 3273 Hand-operated Actuator mounted on a valve is intended for the following activities:

- To manually move the valve to the closed or open position
- To operate a mounted valve without pneumatic or electric actuator

The hand-operated actuator is designed to operate under exactly defined conditions (e.g. thrust, travel). Therefore, operators must ensure that the hand-operated actuator is only used in operating conditions that meet the specifications used for sizing the hand-operated actuator at the ordering stage. In case operators intend to use the hand-operated actuator in applications or conditions other than those specified, contact SAMSON.

SAMSON does not assume any liability for damage resulting from the failure to use the device for its intended purpose or for damage caused by external forces or any other external factors.

→ Refer to the technical data and nameplate for limits and fields of application as well as possible uses.

### Reasonably foreseeable misuse

The hand-operated actuator is not suitable for the following applications:

- Use outside the limits defined during sizing and by the technical data

Furthermore, the following activities do not comply with the intended use:

- Use of non-original spare parts
- Performing service and repair work not described

### Qualifications of operating personnel

The hand-operated actuator must be mounted, started up, serviced and repaired by fully trained and qualified personnel only; the accepted industry codes and practices must be observed. According to these mounting and operating instructions, trained personnel refers to individuals who are able to judge the work they are assigned to and recognize possible hazards due to their specialized training, their knowledge and experience as well as their knowledge of the applicable standards.

### Personal protective equipment

SAMSON recommends wearing the following protective equipment:

- Safety gloves due to the moving parts (actuator stem, plug stem, handwheel)
- ➔ Check with the plant operator for details on further protective equipment.

### Revisions and other modifications

Revisions, conversions or other modifications of the product are not authorized by SAMSON. They are performed at the user's own risk and may lead to safety hazards, for example. Furthermore, the product may no longer meet the requirements for its intended use.

### Safety features

The hand-operated actuator is locked by a locking bolt to prevent accidental adjustment of the valve travel.

### Warning against residual hazards

To avoid personal injury or property damage, plant operators and operating personnel must prevent hazards that could be caused by moving parts on the hand-operated actuator by taking appropriate precautions. Plant operators and operating personnel must observe all hazard statements, warnings and caution notes in these mounting and operating instructions.

### Responsibilities of the operator

Operators are responsible for proper use and compliance with the safety regulations. Operators are obliged to provide these mounting and operating instructions as well as the referenced documents to the operating personnel and to instruct them in proper operation. Furthermore, operators must ensure that operating personnel or third parties are not exposed to any danger.

### Responsibilities of operating personnel

Operating personnel must read and understand these mounting and operating instructions as well as the referenced documents and observe the specified hazard statements, warnings and caution notes. Furthermore, operating personnel must be familiar with the applicable health, safety and accident prevention regulations and comply with them.

## Safety instructions and measures

### Referenced documentation

The following documents apply in addition to these mounting and operating instructions:

- Associated Data Sheet ► T 8312
- Mounting and operating instructions for the valve on which it is mounted
- ► AB 0100 for tools, lubricant and tightening torques
- When a substance is used in the device, which is listed as being a substance of very high concern on the candidate list of the REACH regulation:  
Information on safe use of the part affected ► [www.samsongroup.com](http://www.samsongroup.com) > About SAMSON > Environment, Social & Governance > Material Compliance > REACH  
If a device contains a substance listed as a substance of very high concern on the candidate list of the REACH regulation, this is indicated on the SAMSON delivery note.

## 1.1 Notes on possible severe personal injury

### DANGER

The hand-operated actuator poses no hazard with possible severe personal injury.

- Observe hazard statements in the associated valve documentation.

## 1.2 Notes on possible personal injury

### WARNING

#### **Crush hazard arising from moving parts.**

The hand-operated actuator contains moving parts (actuator stem, plug stem, hand-wheel), which can injure hands or fingers if inserted into it.

- Do not insert hands or finger into the yoke while the valve is in operation.
- Use the locking bolt to lock the handwheel.

#### **Exposure to hazardous substances poses a serious risk to health.**

Certain lubricants and cleaning agents are classified as hazardous substances. These substances have a special label and a material safety data sheet (MSDS) issued by the manufacturer.

- Make sure that an MSDS is available for any hazardous substance used. If necessary, contact the manufacturer to obtain an MSDS.
- Inform yourself about the hazardous substances and their correct handling.

## 1.3 Notes on possible property damage

### NOTICE

#### **Risk of damage to the hand-operated actuator due to the use of unsuitable tools.**

- To turn the handwheel, do not use any additional tools, such as a lever or wrench.

#### **Risk of damage to the hand-operated actuator due to the use of excessive force.**

- Do not turn the handwheel any further when it has reached its end position by exerting force.

### NOTICE

#### **Risk of damage to control valve components due to over- or under-torquing.**

Observe the specified torques when tightening control valve components. Excessive tightening torques lead to parts wearing out more quickly. Parts that are not tightened far enough may loosen.

→ Observe the specified tightening torques (▶ AB 0100).



## 2 Markings on the device

The nameplate shown was up to date at the time of publication of this document. The nameplate on the device may differ from the one shown.

### 2.1 Nameplate on hand-operated actuator

It includes all details required to identify the hand-operated actuator:

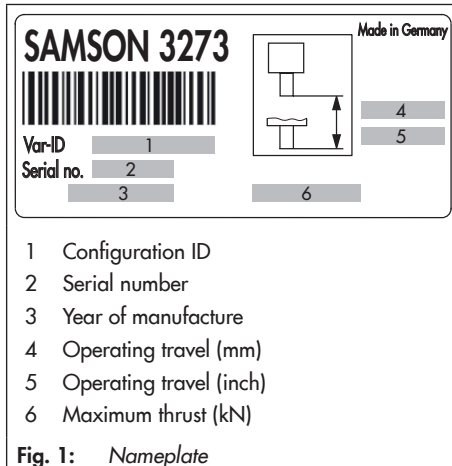


Fig. 1: Nameplate

The nameplate is affixed to the body below the handwheel (see Fig. 2).

### 2.2 Valve nameplate

See associated valve documentation.

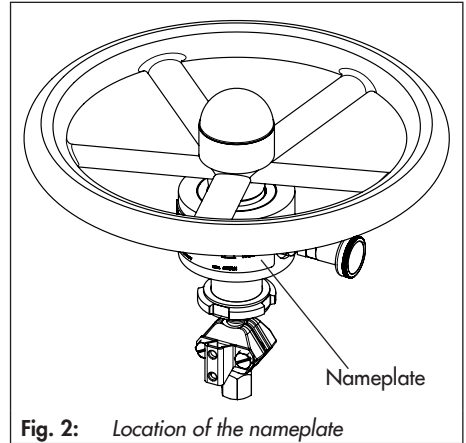


Fig. 2: Location of the nameplate

## 3 Design and principle of operation

See Fig. 3

The Type 3273 Hand-operated Actuator is a spindle actuator equipped with a non-rising handwheel. The hand-operated actuator can be used without a mounted pneumatic or electric actuator to position SAMSON Series 240, 250 and 290 Valves. A locking bolt (17) locks the hand-operated actuator to prevent accidental adjustment of the valve travel.

The spindle nut (20) transfers the rotary motion of the handwheel (6) to the spindle (8), which moves the valve. Depending on the direction of rotation and mounted valve, the actuator stem extends or retracts.

## Design and principle of operation

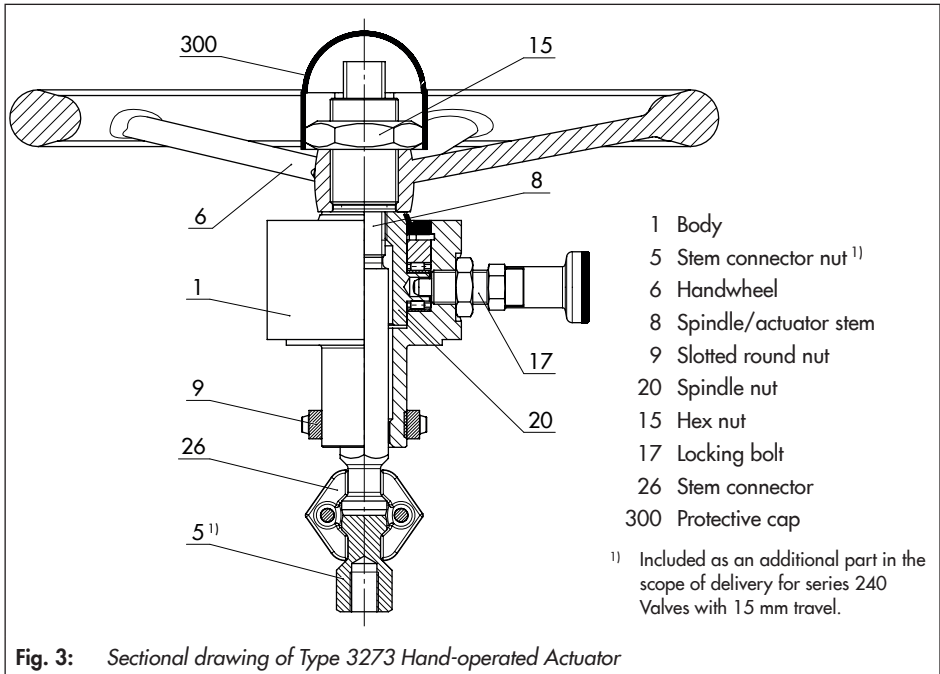


Fig. 3: Sectional drawing of Type 3273 Hand-operated Actuator

### For mounted SAMSON globe valves

The handwheel is marked 'Open/Close' and has directional arrows.

- Turn the handwheel clockwise: the globe valve closes.
- Turn the handwheel counterclockwise: the globe valve opens.

### For mounted SAMSON three-way valves

A label is affixed to the handwheel, which indicates in which direction the threaded rod is moved when the handwheel is turned (see Fig. 4).

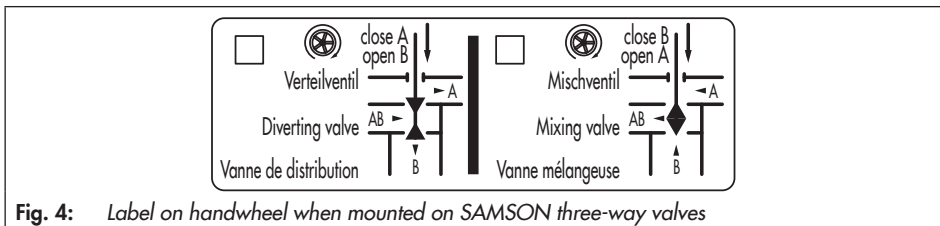


Fig. 4: Label on handwheel when mounted on SAMSON three-way valves

### 3.1 Versions

- **Type 3273-1** · Handwheel diameter of 180 mm, max. thrust 18 kN
- **Type 3273-2** · Handwheel diameter of 250 mm, max. thrust 32 kN

### 3.2 Technical data

The nameplate provides information on the hand-operated actuator version (see Chapter 2).

**i Note**

More information is available in Data Sheet **T 8312**.

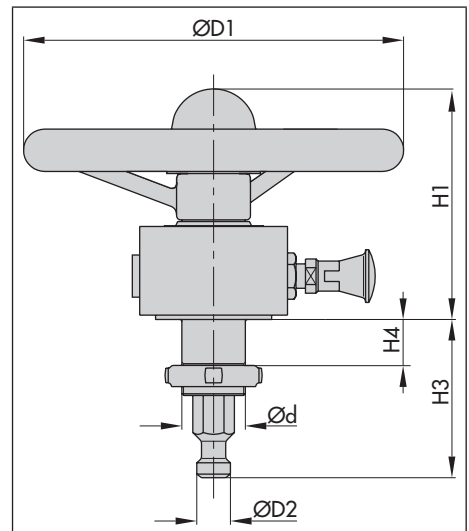
**Table 1:** Technical data for Type 3273 Hand-operated Actuator

Type		3273-1	3273-2
Rated travel	mm	15/30	
Max. travel	mm	23/38	
Max. thrust	kN	18	32
Req. manual force	N	230	300
Perm. temperature	°C	100	
Materials			
Body		St 37-2, powder coated	
Handwheel		Aluminum	
Spindle		Stainless steel 1.4104 or 1.4006	
Spindle nut		Stainless steel 1.4104 or 1.4006	

**Table 2:** Dimensions in mm and weights in kg

Type	3273-1	3273-2
H1	110	115
H3 (valve CLOSED) with rated travel	15 mm 30 mm	75 90
H4	22	
ØD1	180	250
ØD2	16	
Ød	M30x1.5	
Weight, approx.	2	2.5

#### Dimensional drawing



### 4 Shipment and on-site transport

The work described in this chapter is to be performed only by personnel appropriately qualified to carry out such tasks.

#### 4.1 Accepting the delivered goods

After receiving the shipment, proceed as follows:

1. Check the scope of delivery. Check that the specifications on the nameplate of the hand-operated actuator match the specifications in the delivery note.
2. Check the shipment for transportation damage. Report any damage to SAMSON and the forwarding agent (refer to delivery note).
3. Determine the weight and dimensions of the units to be lifted and transported in order to select the appropriate lifting equipment and lifting accessories, if required. Refer to the transport documents.

#### 4.2 Removing the packaging from the hand-operated actuator

Observe the following sequence:

- Do not open or remove the packaging until immediately before mounting the hand-operated actuator.

- Leave the actuator in its transport container or on the pallet to transport it on site.
- Dispose and recycle the packaging in accordance with the local regulations.

#### 4.3 Transporting and lifting the hand-operated actuator

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##### DANGER

***Danger due to suspended loads falling.***

- *Stay clear of suspended or moving loads.*
  - *Close off and secure the transport paths.*
- 

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##### WARNING

***Risk of lifting equipment tipping over and risk of damage to lifting accessories due to exceeding the rated lifting capacity.***

- *Only use approved lifting equipment and accessories whose minimum lifting capacity is higher than the weight of the item being transported (including the packaging, if applicable).*
- 

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##### Tip

*Our after-sales service can provide more detailed transport and lifting instructions on request.*

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##### **Transporting the hand-operated actuator**

The hand-operated actuator can be transported using lifting equipment (e.g. crane or forklift).

- Leave the hand-operated actuator in its transport container or on the pallet to transport it.
- Observe the transport instructions.

### Transport instructions

- Protect the hand-operated actuator against external influences (e.g. impact).
- Do not damage the corrosion protection (paint, surface coatings). Repair any damage immediately.
- Protect the hand-operated actuator against moisture and dirt.
- The permissible transportation temperature is between  $-20$  and  $+65$  °C.

### Lifting the hand-operated actuator

Due to the low service weight, lifting equipment is not required to lift the hand-operated actuator (e.g. to mount it onto a valve).

#### Note

See valve documentation for more information on lifting the entire control valve assembly.

## 4.4 Storing the hand-operated actuator

#### NOTICE

**Risk of damage to the hand-operated actuator due to improper storage.**

- Observe the storage instructions.
- Avoid long storage times.

- Contact SAMSON in case of different storage conditions or longer storage times.

### Storage instructions

- Protect the hand-operated actuator against external influences (e.g. impact).
- Secure the hand-operated actuator in the stored position against slipping or tipping over.
- Do not damage the corrosion protection (paint, surface coatings). Repair any damage immediately.
- Protect the hand-operated actuator against moisture and dirt. Store it at a relative humidity of less than 75 %. In damp spaces, prevent condensation. If necessary, use a drying agent or heating.
- Make sure that the ambient air is free of acids or other corrosive media.
- The permissible storage temperature is between  $-20$  and  $+65$  °C.
- Do not place any objects on the hand-operated actuator.
- Pack the hand-operated actuator in air-tight packaging.

#### Tip

SAMSON's After-sales Service can provide more detailed storage instructions on request.

### 5 Installation

The work described in this chapter is to be performed only by personnel appropriately qualified to carry out such tasks.

#### ! NOTICE

**Risk of damage to control valve components due to over- or under-torquing.**

Observe the specified torques when tightening control valve components. Excessive tightening torques lead to parts wearing out more quickly. Parts that are not tightened far enough may loosen.

→ Observe the specified tightening torques (▶ AB 0100).

#### ! NOTICE

**Risk of damage to control valve components due to the use of unsuitable tools.**

Certain tools are required to work on the control valve.

→ Only use tools approved by SAMSON (▶ AB 0100).

#### ! NOTICE

**Risk of damage to control valve components due to the use of unsuitable lubricants.**

The lubricants to be used depend on the material of the control valve. Unsuitable lubricants may corrode and damage surfaces.

→ Only use lubricants approved by SAMSON (▶ AB 0100).

#### ! NOTICE

**Risk of malfunction due to different travels.**

→ Make sure that the travels of the hand-operated actuator and valve match. If in doubt, contact our after-sales service.

### 5.1 Preparation for installation

Proceed as follows:

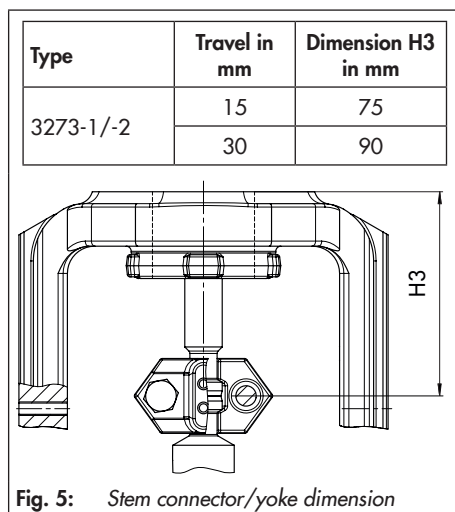
- Check the hand-operated actuator for damage.
- Check whether the hand-operated actuator (model, travel, thrust and handwheel diameter) fits the actuator and valve.

If the valve and hand-operated actuator are delivered separately, assemble the components as described in the following chapter.

### 5.2 Mounting the hand-operated actuator onto the valve

1. Unscrew the lock nut and stem connector nut from the plug stem of the valve and thread them downward.
2. Firmly press the plug together with the plug stem into the valve seat.
3. Remove the stem connector clamps (26/27) and slotted nut (9) from the hand-operated actuator.
4. Slide the slotted nut (9) over the valve's plug stem.

5. Place the hand-operated actuator on the yoke of the valve. Fasten tight with slotted nut (9).
6. Turn the handwheel to adjust the dimension H3 (see Fig. 5) for the actuator stem (8).
7. Thread the stem connector nut on the plug stem upward until the contact surfaces of the stem connector nut and the actuator stem (8) touch.
8. Use the lock nut to lock the plug stem against the stem connector nut.
9. Connect the actuator stem and plug stem using the stem connector clamps (26/27).



### 5.3 Aligning the travel indicator scale

After mounting the hand-operated actuator, the travel indicator scale on the valve's yoke must be aligned. To do so, align '0' on the travel indicator scale with the tip of the stem connector clamp.

1. Move the valve to the closed position.
2. Loosen the screws on the travel indicator scale.
3. Align the travel indicator scale.
4. Fix the travel indicator scale into place by tightening the screws.

## 6 Start-up

The work described in this chapter is to be performed only by personnel appropriately qualified to carry out such tasks.

### 6.1 Quick check

To test the valve's ability to function after mounting the hand-operated actuator, the following quick checks can be performed:

#### Travel motion

- Open and close the valve to check the end positions of the valve.

## 7 Operation

The hand-operated actuator is ready for use when mounting and start-up have been completed.

### ⚠ WARNING

**Crush hazard arising from moving parts (actuator stem, plug stem and handwheel).**

→ Do not insert hands or finger into the yoke while the valve is in operation.

### ⚠ NOTICE

**Risk of damage to the hand-operated actuator due to the use of unsuitable tools.**

→ To turn the handwheel, do not use any additional tools, such as a lever or wrench.

### ⚠ NOTICE

**Operation disturbed by a blocked actuator or plug stem.**

→ Do not impede the movement of the actuator or plug stem by inserting objects into their path.

### ⚠ NOTICE

**Risk of valve damage due to the use of excessive force.**

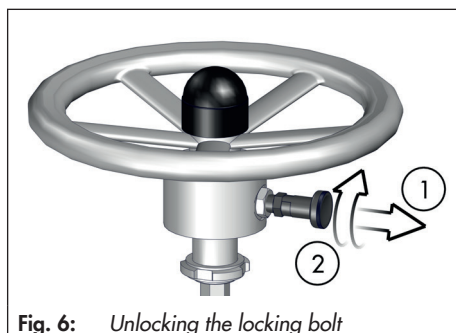
→ Do not turn the handwheel any further by exerting force after the valve has reached its end position.

The handwheel is used to position the valve and locked by the locking bolt to prevent accidental adjustment of the valve travel.

**Table 3:** Turning direction of the handwheel

	Open the valve	Close the valve
<b>SAMSON globe valve</b>	Turn the handwheel counterclockwise	Turn the handwheel clockwise
<b>SAMSON three-way valve</b>		





1. Pull the locking bolt and turn it 90° (see Fig. 6). The locking bolt remains in the locked position by turning it.
2. Turn the handwheel in the required direction (see Table 3). One turn of the handwheel will change the travel by 1.5 mm.
3. After adjusting the required valve travel, turn the locking bolt to lock it again. Turn the handwheel further by a ¼ turn at the most until the locking bolt engages.

### 8 Malfunctions

Depending on the operating conditions, check the hand-operated actuator at certain intervals to prevent possible failure before it can occur. Plant operators are responsible for drawing up an inspection and test plan.



#### Tip

*Our after-sales service can support you in drawing up an inspection and test plan for your plant.*

### Troubleshooting

Malfunction	Possible reasons	Recommended action
The handwheel cannot be turned.	The handwheel is still locked.	Unlock the handwheel.
	The valve plug is already in the end position.	–
The locking bolt cannot be unlocked.	The bolt is worn.	Lubricate the locking bolt. If the locking bolt remains blocked, contact our after-sales service.



#### Note

*Contact our after-sales service for malfunctions not listed in the table.*

## 9 Servicing

The work described in this chapter is to be performed only by personnel appropriately qualified to carry out such tasks.

---

### **i** Note

*The hand-operated actuator was checked by SAMSON before delivery.*

- The product warranty becomes void if service or repair work not described in these instructions is performed without prior agreement by our after-sales service.*
  - Only use original spare parts by SAMSON, which comply with the original specifications.*
- 

---

### **i** Note

*See associated valve documentation for information on servicing the valve.*

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## 9.1 Ordering spare parts and operating supplies

Contact your nearest SAMSON subsidiary or SAMSON's After-sales Service for information on spare parts, lubricants and tools.

### **Spare parts**

See Chapter 14 for details on spare parts.

### **Lubricants**

See document ► AB 0100 for details on suitable lubricants.

### **Tools**

See document ► AB 0100 for details on suitable tools.

# 10 Decommissioning

### **⚠ WARNING**

#### **Crush hazard arising from moving parts.**

The hand-operated actuator contains moving parts (actuator stem, plug stem, handwheel), which can injure hands or fingers if inserted into it.

- ➔ Do not insert hands or finger into the yoke while the valve is in operation.
- ➔ Use the locking bolt to lock the handwheel.

### **i Note**

See associated valve documentation for additional information on decommissioning.

To decommission the hand-operated actuator for maintenance and repair work on the valve or for disassembly, proceed as follows:

1. Put the control valve out of operation.  
See associated valve documentation.
2. Release any stored energy.
3. Lock the handwheel.

## 11 Removal

### **⚠ WARNING**

#### **Crush hazard arising from moving parts.**

The hand-operated actuator contains moving parts (actuator stem, plug stem, handwheel), which can injure hands or fingers if inserted into it.

- ➔ Do not insert hands or finger into the yoke while the valve is in operation.
- ➔ Use the locking bolt to lock the handwheel.

### **i Note CE**

See associated valve and actuator documentation for additional removal instructions.

Before removing the valve, make sure the following conditions are met:

- The control valve is put out of operation (see associated valve documentation).
- The handwheel is locked.

### 11.1 Removing the hand-operated actuator from the valve

1. Remove the stem connector clamps (26/27).
2. Turn the handwheel to retract the actuator stem slightly.
3. Unscrew the slotted nut (9) and slide it over the valve's plug stem.
4. Remove the hand-operated actuator from the valve yoke.
5. Screw the slotted nut (9) and stem connector clamps (26/27) back onto the hand-operated actuator to keep them safe.

## 12 Repairs

If the hand-operated actuator does not function properly according to how it was originally sized, it is defective and must be repaired or exchanged.

### ! NOTICE

**Risk of damage to the hand-operated actuator due to incorrect service or repair work.**

- Do not perform any repair work on your own.
- Contact SAMSON's After-sales Service for service and repair work.

### 12.1 Returning devices to SAMSON

Defective devices can be returned to SAMSON for repair.

Proceed as follows to return devices:

1. Exceptions apply concerning some special device models
  - ▶ [www.samsongroup.com](http://www.samsongroup.com) > Service > After-sales Service > Returning goods.
2. Send an e-mail
  - ▶ [returns-de@samsongroup.com](mailto:returns-de@samsongroup.com) to register the return shipment including the following information:
    - Type
    - Article number
    - Configuration ID
    - Original order

- Completed Declaration on Contamination, which can be downloaded from our website at ▶ [www.samsongroup.com](http://www.samsongroup.com) > Service > After-sales Service > Returning goods.

**After checking your registration, we will send you a return merchandise authorization (RMA).**

3. Attach the RMA (together with the Declaration on Decontamination) to the outside of your shipment so that the documents are clearly visible.
4. Send the shipment to the address given on the RMA.

### i Note

*Further information on returned devices and how they are handled can be found at*  
 ▶ [www.samsongroup.com](http://www.samsongroup.com) > Service > After-sales Service.

### 13 Disposal



SAMSON is a producer registered at the following European institution  
▶ <https://www.ewrn.org/national-registers/national-registers>.  
WEEE reg. no.: DE 62194439/  
FR 02566

- Observe local, national and international refuse regulations.
- Do not dispose of components, lubricants and hazardous substances together with your household waste.

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#### **i Note**

*We can provide you with a recycling passport according to PAS 1049<sup>1)</sup> on request. Simply e-mail us at [aftersaleservice@samsongroup.com](mailto:aftersaleservice@samsongroup.com) giving details of your company address.*

---

#### **💡 Tip**

*On request, we can appoint a service provider to dismantle and recycle the product as part of a distributor take-back scheme.*

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<sup>1)</sup> PAS 1049 is relevant to electrical and electronic equipment (e.g. electric actuators). This PAS specification does not apply to non-electrical equipment.

## 14 Appendix

### 14.1 After-sales service

Contact our after-sales service for support concerning service or repair work or when malfunctions or defects arise.

#### **E-mail address**

You can reach our after-sales service at [aftersalesservice@samsongroup.com](mailto:aftersalesservice@samsongroup.com).

#### **Addresses of SAMSON AG and its subsidiaries**

The addresses of SAMSON AG, its subsidiaries, representatives and service facilities worldwide can be found on our website ([www.samsongroup.com](http://www.samsongroup.com)) or in all SAMSON product catalogs.

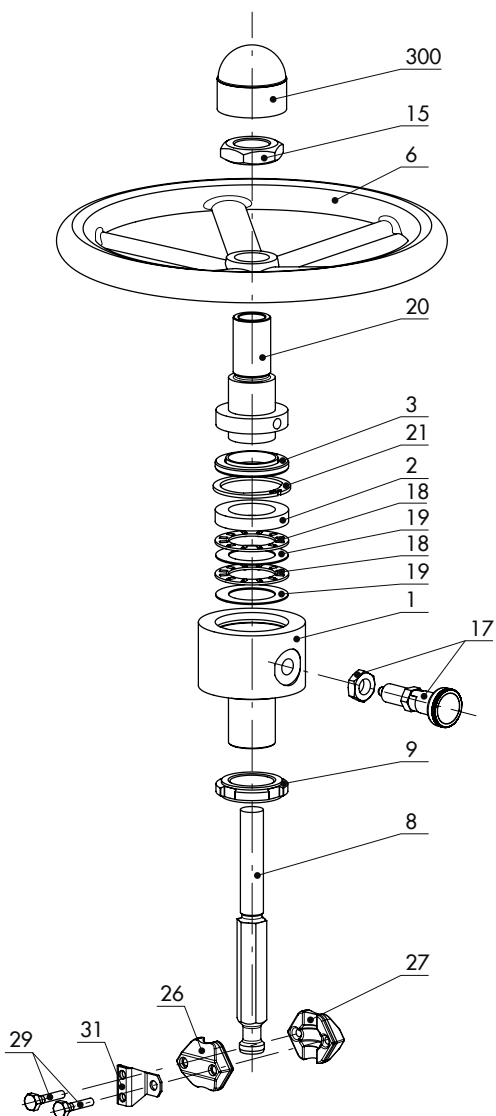
#### **Required specifications**

Please submit the following details:

- Order number and position number in the order
- Type designation and model number
- Travel
- Handwheel diameter (180 or 250 mm)
- Mounted valve (model and valve size)
- Installation drawing

## 14.2 Spare parts

- 1 Body
- 2 Ring
- 3 Wiper ring
- 6 Handwheel
- 8 Spindle/actuator stem
- 9 Slotted round nut
- 15 Hex nut
- 17 Locking bolt
- 18 Axial needle bearing
- 19 Washer
- 20 Spindle nut
- 21 Retaining ring
- 26 Stem connector clamp
- 27 Stem connector clamp
- 29 Hex screw
- 31 Bracket
- 300 Protective cap







**EB 8312-3 EN**



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