

MOUNTING AND OPERATING INSTRUCTIONS



EB 8048-21 EN

Translation of original instructions



Type 3349 Valve with Type 3277 Pneumatic Actuator and Type 3730 Positioner

Note: This version of the product is to be discontinued shortly.

Replacement device:
Type 3349 HV01

These mounting and operating instructions will then only apply to valves already in use. The mounting and operating instructions ► EB 8048-2 apply to the Type 3349 HV01. They can be downloaded from our website at

► www.samsongroup.com > Service & Support > Downloads > Documentation



Type 3349/3379 Control Valve with Type 3724 Positioner

Type 3349 Aseptic Angle Valve with USP-VI diaphragm

In combination with an actuator, e.g. a SAMSON Type 3271 or Type 3277 Pneumatic Actuator or Type 3379 Pneumatic Actuator

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 (aftersaleservice@samsongroup.com).



Documents relating to the device, such as the mounting and operating instructions, are available on our website at www.samsongroup.com > **Service & Support** > **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

1	Safety instructions and measures	5
1.1	Notes on possible severe personal injury	8
1.2	Notes on possible personal injury	8
1.3	Notes on possible property damage	10
2	Markings on the device	12
2.1	Body inscription	12
2.2	Actuator nameplate	12
2.3	Material identification number	12
3	Design and principle of operation	14
3.1	Fail-safe positions	14
3.2	Versions	17
3.3	Technical data	18
4	Shipment and on-site transport	22
4.1	Accepting the delivered goods	22
4.2	Removing the packaging from the valve	22
4.3	Transporting and lifting the valve	22
4.3.1	Transporting the valve	23
4.3.2	Lifting the valve	24
4.4	Storing the valve	26
5	Installation	27
5.1	Installation conditions	27
5.2	Preparation for installation	28
5.3	Mounting the device	29
5.3.1	Mounting the actuator onto the valve	30
5.4	Installing the valve into the pipeline	32
5.5	Testing the installed valve	32
5.5.1	Leak test	34
5.5.2	Travel motion	34
5.5.3	Fail-safe position	34
5.5.4	Pressure test	34
6	Start-up	35
7	Operation	36
8.1	Troubleshooting	38
7.1	CIP (cleaning-in-place)	38
7.2	SIP (sterilization-in-place)	38

Contents

8	Malfunctions	38
8.2	Emergency action	39
9	Servicing.....	40
9.1	Checking the extent of servicing	42
9.2	Preparing the valve for service work	42
9.3	Installing the valve after service work	42
9.4	Service work for version with Type 3271 or Type 3277 Actuator	42
9.4.1	Replacing the packing	43
9.4.2	Replacing the diaphragm and plug	43
9.5	Service work for version with Type 3379 Actuator	46
9.5.1	Replacing the packing	46
9.5.2	Replacing the diaphragm and plug	47
9.6	Checking the concentricity of the plug to the plug stem	50
9.7	Ordering spare parts and operating supplies	50
10	Decommissioning	51
11	Removal	53
11.1	Removing the valve from the pipeline.....	53
11.2	Removing the actuator from the valve	54
12	Repairs	54
12.1	Returning devices to SAMSON	54
13	Disposal.....	55
14	Annex.....	56
14.1	After-sales service	56
14.2	Certificates	56
14.3	Spare parts	60

1 Safety instructions and measures

Intended use

The SAMSON Type 3349 Angle Valve in combination with an actuator (e.g. Type 3271, Type 3277 or Type 3379 Pneumatic Actuator) is designed to regulate the flow rate, pressure or temperature of liquids, gases or vapors. The angle valve is suitable for use in aseptic applications (e.g. in the pharmaceutical and food industries).

The valve with its actuator is designed to operate under exactly defined conditions (e.g. operating pressure, process medium, temperature). Therefore, operators must ensure that the control valve is only used in operating conditions that meet the specifications used for sizing the valve at the ordering stage. In case operators intend to use the control valve 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 control valve is not suitable for the following applications:

- Use outside the limits defined during sizing and by the technical data
- Use outside the limits defined by the valve accessories connected to the valve

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 control valve 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.

Welding operations must only be performed by personnel who has the necessary qualification to perform the applied welding procedure and handle the materials used.

Safety instructions and measures

Personal protective equipment

We recommend checking the hazards posed by the process medium being used (e.g.

▶ GESTIS (CLP) hazardous substances database). Depending on the process medium and/or the activity, the protective equipment required includes:

- Protective clothing, gloves, eye protection and respiratory protection in applications with hot, cold and/or corrosive media
 - Wear hearing protection when working near the valve
 - Hard hat
 - Safety harness when working at height
 - Safety footwear, ESD (electrostatic discharge) footwear, if necessary
- ➔ 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 devices

Upon supply air or control signal failure, the valve moves to its fail-safe position (see section 3.1). The fail-safe action of the actuator is the same as its direction of action and is specified on the nameplate of SAMSON actuators (see actuator documentation).

Warning against residual hazards

To avoid personal injury or property damage, plant operators and operating personnel must prevent hazards that could be caused in the control valve by the process medium, the operating pressure, the signal pressure or by moving parts by taking appropriate precautions. Plant operators and operating personnel must observe all hazard statements, warning and caution notes in these mounting and operating instructions.

Hazards resulting from the special working conditions at the installation site of the valve must be identified in a risk assessment and prevented through the corresponding safety instructions drawn up by the operator.

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.

Operators are additionally responsible for ensuring that the limits for the product defined in the technical data are observed. This also applies to the start-up and shutdown procedures. Start-up and shutdown procedures fall within the scope of the operator's duties and, as such, are not part of these mounting and operating instructions. SAMSON is unable to make any statements about these procedures since the operative details (e.g. differential pressures and temperatures) vary in each individual case and are only known to the operator.

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.

Referenced standards, directives and regulations

The control valves meet the requirements in the Regulation (EC) No. 1935/2004 for materials and articles intended to come into contact with food

The control valves comply with the requirements of the European Pressure Equipment Directive 2014/68/EU and the Machinery Directive 2006/42/EC. Valves with a CE marking have a declaration of conformity which includes information about the applied conformity assessment procedure. This declaration of conformity is included in the annex of these instructions (see section 14.2).

According to the ignition hazard assessment performed in accordance with Clause 5.2 of ISO 80079-36, the non-electrical control valves do not have their own potential ignition source even in the rare incident of an operating fault. As a result, they do not fall within the scope of Directive 2014/34/EU.

➔ For connection to the equipotential bonding system, observe the requirements specified in Clause 6.4 of EN 60079-14 (VDE 0165-1).

Referenced documentation

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

- Mounting and operating instructions for mounted actuator, e.g. ► EB 8310-X for Type 3271 and Type 3277 Actuators or ► EB 8315 for Type 3379 Actuator
- Mounting and operating instructions for mounted valve accessories (positioner, solenoid valve etc.), for example ► EB 8395 for Type 3724 Positioner
- ► AB 0100 for tools, tightening torques and lubricant
- Manual ► H 02: Appropriate Machinery Components for SAMSON Pneumatic Control Valves with a Declaration of Conformity of Final Machinery

1.1 Notes on possible severe personal injury

DANGER

Risk of bursting in pressure equipment.

Valves and pipelines are pressure equipment. Impermissible pressure or improper opening can lead to valve components bursting.

- Observe the maximum permissible pressure for valve and plant.
- Before starting any work on the control valve, depressurize all plant sections affected as well as the valve.
- Drain the process medium from all the plant sections concerned as well as the valve.

1.2 Notes on possible personal injury

WARNING

Risk of burn injuries due to hot or cold components and pipelines.

Depending on the process medium, valve components and pipelines may get very hot or cold and cause burn injuries.

- Allow components and pipelines to cool down or warm up to the ambient temperature.
- Wear protective clothing and safety gloves.

⚠ WARNING

Risk of hearing loss or deafness due to loud noise.

The noise emissions depend on the valve version, plant facilities and process medium.

- Wear hearing protection when working near the valve.

Risk of personal injury due to exhaust air being vented.

While the valve is operating, air is vented from the actuator, for example, during closed-loop operation or when the valve opens or closes.

- Install the control valve in such a way that vent openings are not located at eye level and the actuator does not vent at eye level in the work position.
- Use suitable silencers and vent plugs.
- Wear eye protection when working in close proximity to the control valve.

Crush hazard arising from moving parts.

The pneumatic control valves with Type 3271 and Type 3277 Actuator contain moving parts (actuator and plug stem), which can injure hands or fingers if inserted into the valve.

- Do not insert hands or finger into the yoke while the air supply is connected to the actuator.
- Before working on the control valve, disconnect and lock the pneumatic air supply as well as the control signal.
- Do not impede the movement of the actuator and plug stem by inserting objects into the yoke.
- Before unblocking the actuator and plug stem after they have become blocked (e.g. due to seizing up after remaining in the same position for a long time), release any stored energy in the actuator (e.g. spring compression). See associated actuator documentation.

Risk of personal injury due to preloaded springs.

Valves in combination with pneumatic actuators with preloaded springs are under tension. These control valves with SAMSON pneumatic actuators can be identified by the long bolts protruding from the bottom of the actuator.

- Before starting any work on the actuator, relieve the compression from the preloaded springs (see associated actuator documentation).

WARNING

Risk of personal injury due to residual process medium in the valve.

While working on the valve, residual medium can flow out of the valve and, depending on its properties, cause personal injury, e.g. (chemical) burns.

- If possible, drain the process medium from all the plant sections affected and the valve.
- Wear protective clothing, safety gloves, respiratory protection and eye protection.

Risk of personal injury through incorrect operation, use or installation as a result of information on the valve being illegible.

Over time, markings, labels and nameplates on the valve may become covered with dirt or become illegible in some other way. As a result, hazards may go unnoticed and the necessary instructions not followed. There is a risk of personal injury.

- Keep all relevant markings and inscriptions on the device in a constantly legible state.
- Immediately renew damaged, missing or incorrect nameplates or labels.

1.3 Notes on possible property damage

NOTICE

Risk of valve damage due to contamination (e.g. solid particles) in the pipeline.

The plant operator is responsible for cleaning the pipelines in the plant.

- Flush the pipelines before start-up.

Risk of valve damage due to unsuitable medium properties.

The valve is designed for a process medium with defined properties.

- Only use the process medium specified for sizing the equipment.

Risk of leakage and valve damage due to excessively high or low tightening torques.

Observe the specified torques when tightening control valve components. Excessive tightening torques lead to parts wearing out more quickly. Parts that are too loose may cause leakage.

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

! NOTICE

Risk of valve damage due to the use of unsuitable tools.

Certain tools are required to work on the valve.

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

Risk of valve damage due to the use of unsuitable lubricants.

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

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

Risk of the process medium being contaminated through the use of unsuitable lubricants and/or contaminated tools and components.

→ Keep the valve and the tools used free from solvents and grease.

→ Make sure that only suitable lubricants are used.

2 Markings on the device

2.1 Body inscription

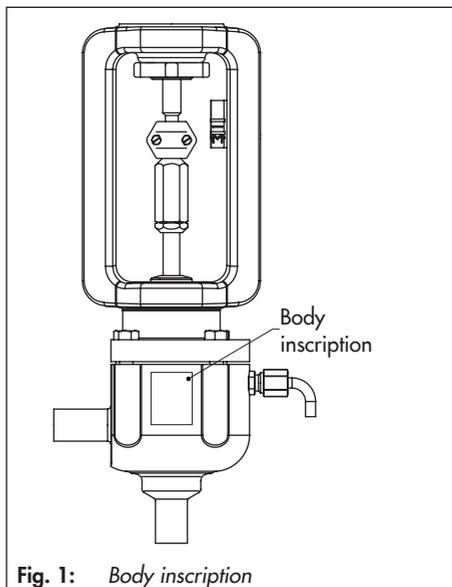
The details on the valve version are lasered onto the front and back of the valve body (see Fig. 1). No nameplate is used.

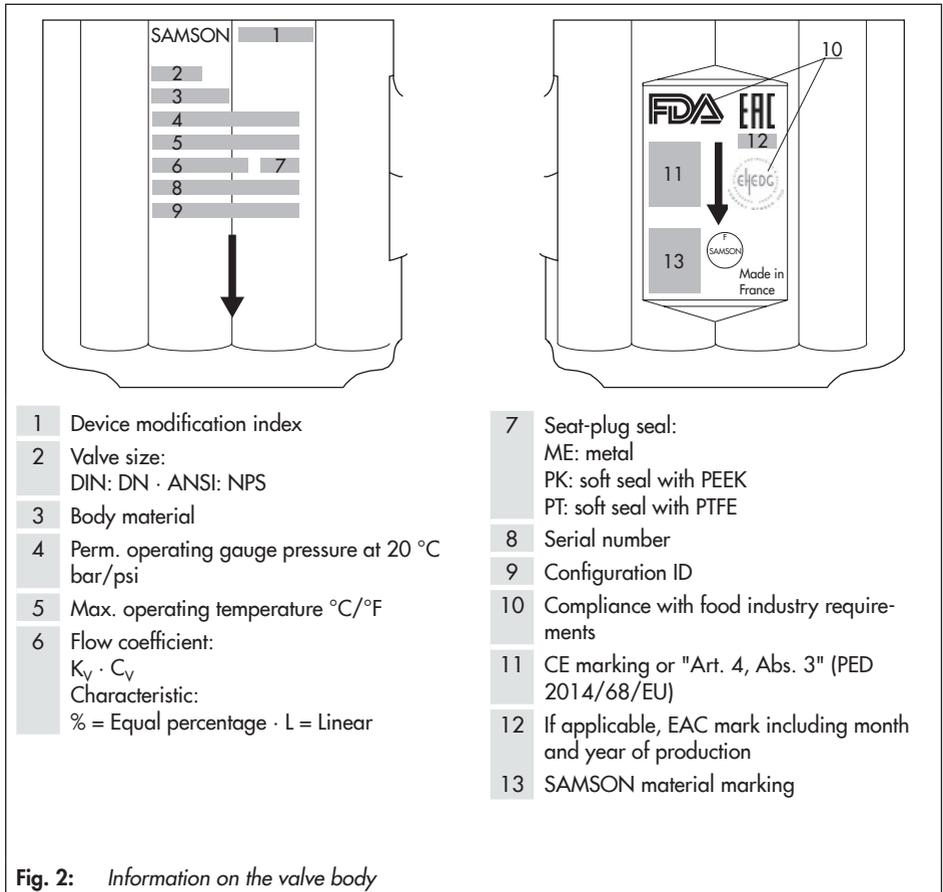
2.2 Actuator nameplate

See associated actuator documentation.

2.3 Material identification number

The seat and plug of the valves have an article number written on them. Specifying this article number, you can contact us to find out which material is used.





3 Design and principle of operation

The Type 3349 Angle Valve is preferably combined with a SAMSON Type 3271 or Type 3277 Pneumatic Actuator (see Fig. 3) as well as the Type 3379 Pneumatic Actuator (see Fig. 4). The valve comes with welding ends as standard. The valve is suitable for aseptic applications and is designed without any cavities.

The process medium flows through the valve in the flow-to-close direction as indicated by the arrow. The position of the valve plug determines the flow rate across the cross-sectional area of flow released between the plug and lathed seat.

In the standard version, the plug stem is sealed by the USP-VI diaphragm. In the special version, an additional backup packing is used (see Fig. 5). The test connection allows the diaphragm to be monitored for leakage.

In the version with backup packing, the test connection is sealed by a stopper. The stopper must be replaced with a suitable leakage indicator (e.g. a contact pressure gauge, an outlet to an open vessel or an inspection glass) when the valve is installed. The test connection of valves without a backup packing is fitted with a pipe elbow to allow the safe drainage of any medium that escapes.

When combined with the Type 3271 or Type 3277 Actuator, the actuator stem and plug stem are connected using stem connector clamps (A26/27). When combined with the Type 3379 Actuator, the actuator stem and plug stem are screwed together.

3.1 Fail-safe positions

The fail-safe position depends on the mounted actuator. Depending on how the compression springs are arranged in the pneumatic actuator, the valve has two different fail-safe positions:

Actuator stem extends (FA)

When the signal pressure is reduced or the air supply fails, the springs move the actuator stem downward and close the valve. The valve opens when the signal pressure is increased enough to overcome the force exerted by the springs.

Actuator stem retracts (FE)

When the signal pressure is reduced or the air supply fails, the springs move the actuator stem upwards and open the valve. The valve closes when the signal pressure is increased enough to overcome the force exerted by the springs.

Tip

The direction of action of the Type 3271 and Type 3277 Pneumatic Actuator can be reversed, if required. Refer to the mounting and operating instructions of the pneumatic actuator:

► *EB 8310-X for Type 3271 and Type 3277*

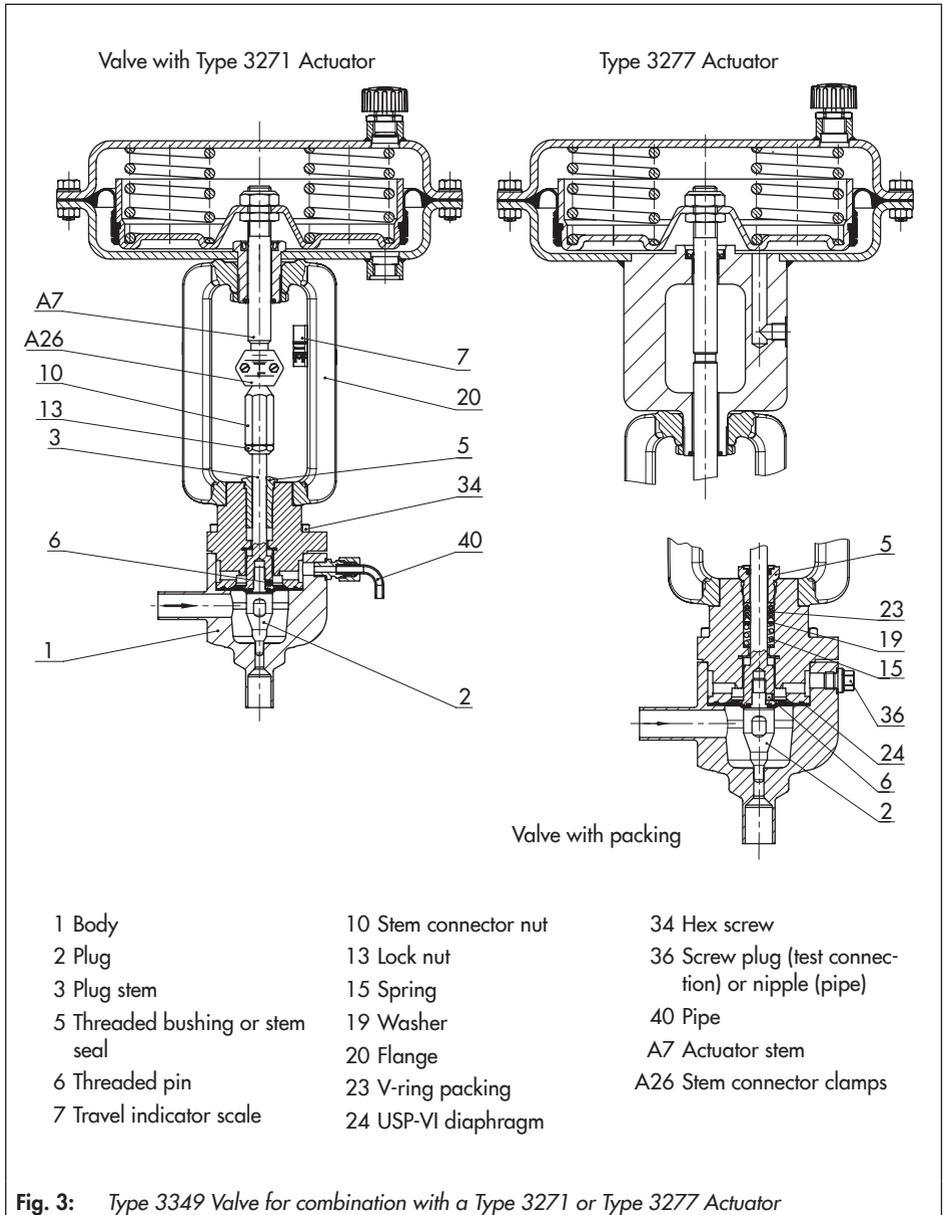
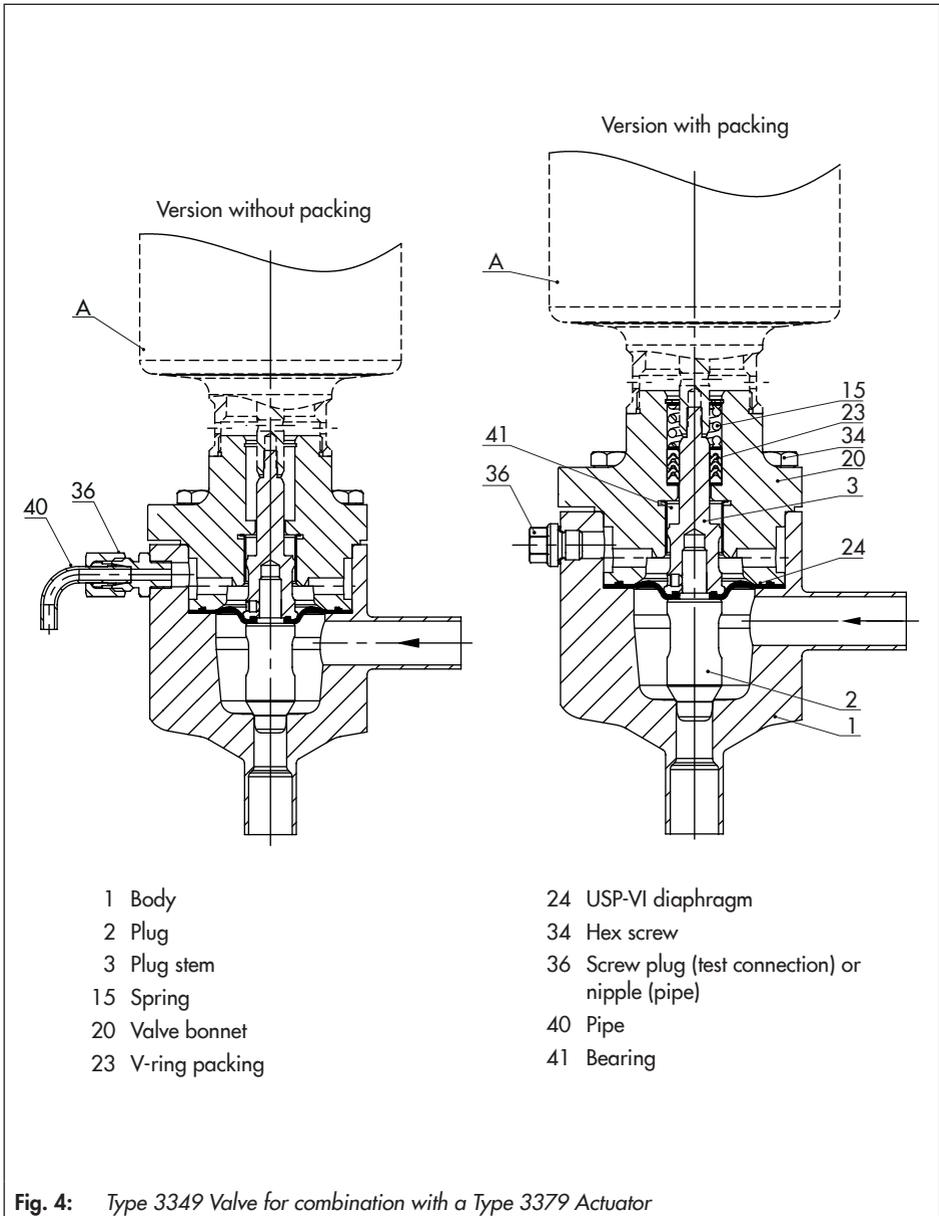
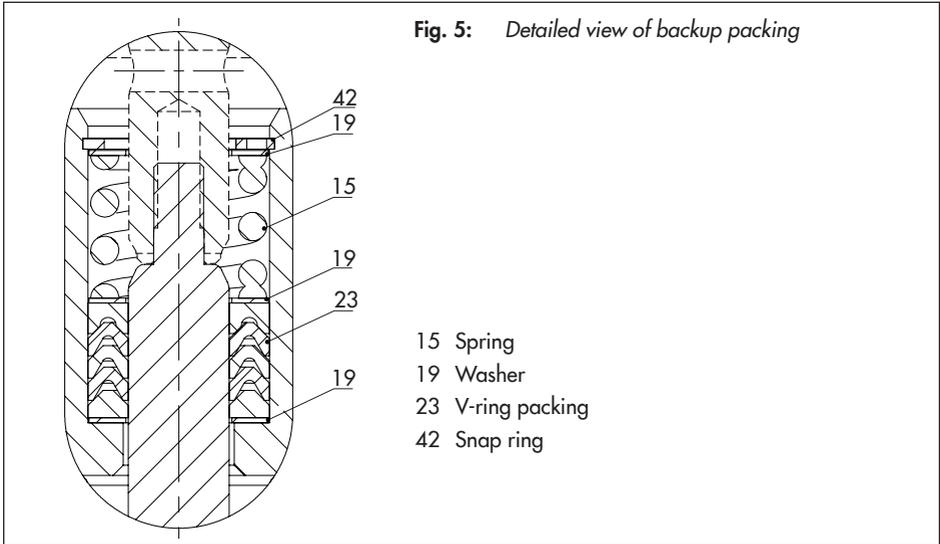


Fig. 3: Type 3349 Valve for combination with a Type 3271 or Type 3277 Actuator

Design and principle of operation





3.2 Versions

Micro-flow valve

The Type 3349 Valve is also available as a micro-flow valve.

With actuator	Valve size	
	DN	NPS
Type 3271/3277	8 to 25	¼ to 1
Type 3379	8 to 25	¼ to 1

Actuators

In these instructions, the preferable combination with a Type 3271, Type 3277 or Type 3379 Pneumatic Actuator is described. The pneumatic actuator can be replaced by another pneumatic actuator in a different size, but with the same travel.

➔ Observe the maximum permissible actuator force.

i Note

If the travel range of the actuator is larger than the travel range of the valve, the spring assembly in the actuator must be preloaded so that the travel ranges match. See associated actuator documentation.

Valve accessories

A Type 3724 Positioner is frequently used when the Type 3349 Angle is combined with a Type 3379 Pneumatic Actuator.

3.3 Technical data

The inscription on the valve body and the nameplate on the actuator provide information on the control valve version. See section 2.1 and the actuator documentation.

i Note

More information is available in Data Sheets
▶ T 8048-21 and ▶ T 8048-22.

Conformity

The Type 3349 Valve bears both the CE and EAC marks of conformity.



Temperature range

Depending on the version, the control valve is designed for a temperature range from 0 to 160 °C (32 to 320 °F).

Leakage class

Depending on the version, the following leakage class applies:

Seal (7 on nameplate)	Unit	PT, PK
Leakage class (acc. to IEC 60534-4 or ANSI/FCI 70-2)	Min. IV	VI

Noise emissions

SAMSON is unable to make general statements about noise emissions. The noise emissions depend on the valve version, plant facilities and process medium.

Safety guard

For operating conditions that require increased safety (e.g. in cases where the valve is freely accessible to untrained staff), a safety guard must be installed to rule out a crush hazard arising from moving parts (actuator and plug stem). Plant operators are responsible for deciding whether a guard is to be used. The decision is based on the risk posed by the plant and its operating conditions.

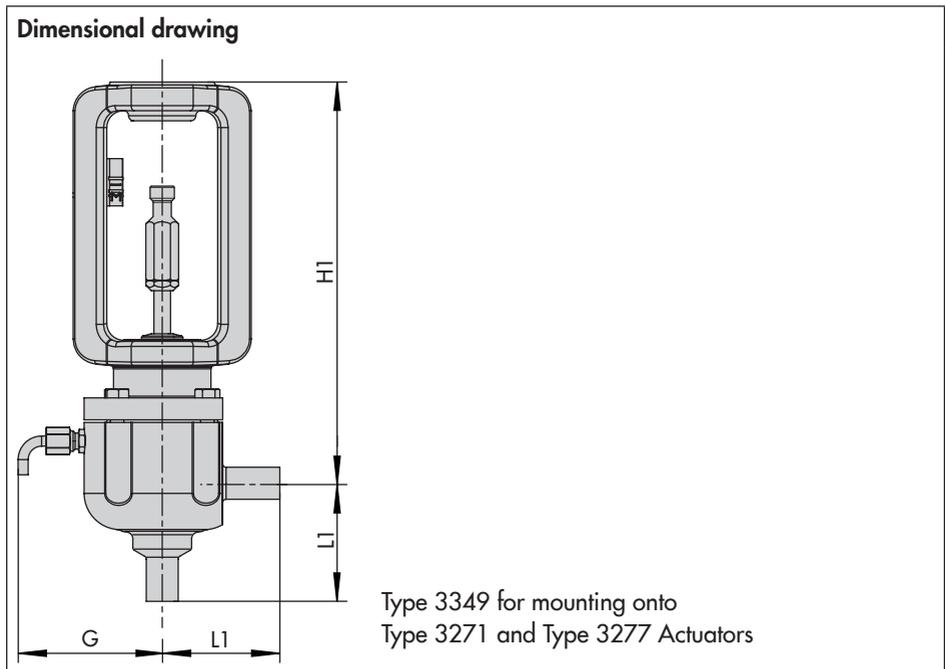
Dimensions and weights

Table 1: Dimensions of Type 3349 Angle Valve for mounting onto Type 3271 and Type 3277 Actuators

DN		15	20	25	32	40	50	65	80	100
NPS		½	¾	1	1¼	1½	2	2½	3	4
H1	mm	238	241	244	276	279	285	293	348	360
L1 ¹⁾	mm	70	70	70	105	105	105	105	150	150
G	mm	86	86	86	113	113	113	113	144	144
Weight ²⁾	kg	6			16			42		

¹⁾ Length with welding ends (DIN version); dimensions of other connections and versions ▶ T 8048-21

²⁾ Weight with welding ends



Design and principle of operation

Table 2: Dimensions of Type 3349 Angle Valve for mounting onto Type 3379 Actuator

DN		15	20	25	32	40	50
NPS		½	¾	1	1¼	1½	2
Rated travel	mm	7.5			15		
H1	mm	68			101		
L1 ¹⁾	mm	70			105		
G	mm	84			112		
Weight ²⁾	kg	3.7			13		

¹⁾ Length with welding ends (dimensions of other connections ► T 8048-22)

²⁾ Weight with welding ends

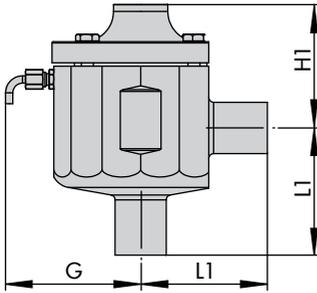
Table 3: Dimensions of Type 3349 as micro-flow valve for mounting onto Type 3379 Actuator

DN		8	10	15	20	25
NPS		-	¼	½	¾	1
Rated travel	mm	7.5				
L1 ¹⁾	mm	50				
DIN 11866, Series A						
H1	mm	61	61	65	65	70
G	mm	83				
Weight ²⁾	kg	1				
DIN 11866, Series B						
H1	mm	61	65	65	70	70
G	mm	83				
Weight ²⁾	kg	1				
DIN 11866, Series C						
H1	mm	-	61	61	65	70
G	mm		83			
Weight ²⁾	kg		1			

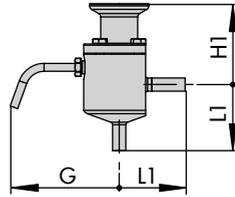
¹⁾ Length with welding ends (dimensions of other connections ► T 8048-22)

²⁾ Weight with welding ends

Dimensional drawings



Type 3349 for mounting on Type 3379
Actuator · Standard version



Type 3349 for mounting on Type 3379
Actuator · Micro-flow valve version

4 Shipment and on-site transport

The work described in this section is only to be performed 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 valve nameplate match the specifications in the delivery note. See the 'Markings on the device' section for nameplate details.
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 and section 3.3.

4.2 Removing the packaging from the valve

Observe the following sequence:

- Do not open or remove the packaging until immediately before lifting to install the valve into the pipeline.

- Leave the control valve in its transport container or on the pallet to transport it on site.
- Do not remove the protective caps from the inlet and outlet until immediately before installing the valve into the pipeline. They prevent foreign particles from entering the valve.
- Dispose and recycle the packaging in accordance with the local regulations.

4.3 Transporting and lifting the valve

⚠ DANGER

Danger due to suspended loads falling.

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

⚠ 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 valve (including actuator and packaging, if applicable).*
-

⚠ WARNING

Risk of personal injury due to the control valve tipping over.

- Observe the valve's center of gravity.
- Secure the valve against tipping over or turning.

⚠ WARNING

Risk of injury due to incorrect lifting without the use of lifting equipment.

Lifting the control valve without the use of lifting equipment may lead to injuries (back injury in particular) depending on the weight of the control valve.

- Observe the occupational health and safety regulations valid in the country of use.

ⓘ NOTICE

Risk of valve damage due to incorrectly attached slings.

- When lifting the control valve, make sure that the slings attached to the valve body bear the entire load.
- Do not attach slings to the pipe elbow.
- Do not attach load-bearing slings to any valve accessories.
- Observe lifting instructions (see section 4.3.2).

💡 Tip

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

4.3.1 Transporting the valve

The control valve can be transported using lifting equipment (e.g. crane or forklift).

- Leave the control valve in its transport container or on the pallet to transport it.
- Observe the transport instructions.

Transport instructions

- Protect the control valve against external influences (e.g. impact).
- Do not damage the corrosion protection (paint, surface coatings). Repair any damage immediately.
- Protect the piping and any mounted valve accessories against damage.
- Protect the control valve against moisture and dirt.
- Observe the permissible temperature range (see section 3.3).

4.3.2 Lifting the valve

To install a large valve into the pipeline, use lifting equipment (e.g. crane or forklift) to lift it.

Lifting instructions

- Use a hook with safety latch (see Fig. 6 to Fig. 9) to secure the slings from slipping off the hook during lifting and transporting.
- Secure slings against slipping.
- Make sure the slings can be removed from the valve once it has been installed into the pipeline.
- Prevent the control valve from tilting or tipping over.
- Do not leave loads suspended when interrupting work for longer periods of time.
- Make sure that the axis of the pipeline is always horizontal during lifting and the axis of the plug stem is always vertical.
- Make sure that the additional sling between the lashing point on the actuator and rigging equipment (hook, shackle etc.) does not bear any load when lifting valves with an actuator that has a lifting eyelet/eyebolt on it. The sling only protects the control valve from tilting while being lifted. Before lifting the control valve, tighten the sling.

Lifting the control valve

1. **With Type 3271 or 3277:** carefully guide two slings around the flange and attach them to the rigging equipment of

the crane or forklift (see Fig. 6, Fig. 7 and Fig. 8). Make sure that the actuator stem and valve accessories are not damaged.

For actuator versions with lifting eyelet, attach an additional sling to the lifting eyelet of the actuator and to the rigging equipment of the crane or forklift (see Fig. 7).

With Type 3379: carefully guide two slings around the actuator. Secure the slings against slipping by using a connector (see Fig. 9).

2. Carefully lift the control valve. Check whether the lifting equipment and accessories can bear the weight.
3. Move the control valve at an even pace to the site of installation.
4. Install the valve into the pipeline (see section 5.4).
5. After installation into the pipeline: depending on the type of connection (e.g. welding joint, flanged joint etc.) check whether the valve in the pipeline holds.
6. Remove slings.

Lifting points on the control valve

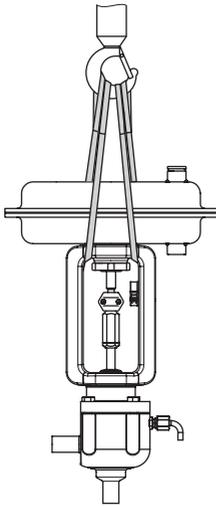


Fig. 6: Type 3349 with Type 3271 without lifting eyelet

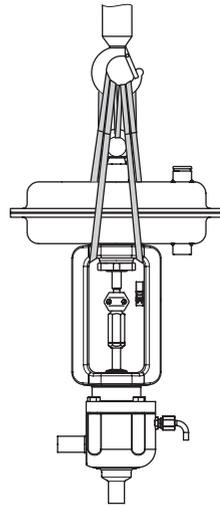


Fig. 7: Type 3349 with Type 3271 with lifting eyelet

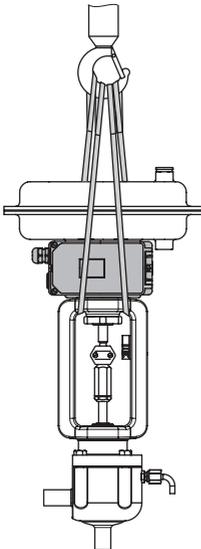


Fig. 8: Type 3349 with Type 3277 without lifting eyelet

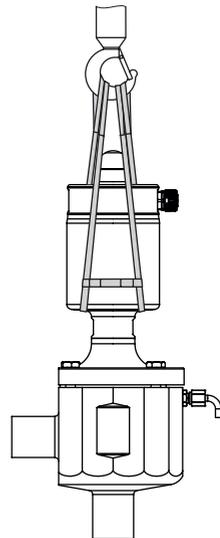


Fig. 9: Type 3349/3379

4.4 Storing the valve

NOTICE

Risk of valve damage due to improper storage.

- Observe the storage instructions.
 - Avoid long storage times.
 - Contact SAMSON in case of different storage conditions or longer storage times.
-

Note

We recommend regularly checking the control valve and the prevailing storage conditions during long storage periods.

Storage instructions

- Protect the control valve against external influences (e.g. impact).
- Secure the valve in the stored position against slipping or tipping over.
- Do not damage the corrosion protection (paint, surface coatings). Repair any damage immediately.
- Protect the control valve 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.
- Observe the permissible temperature range (see section 3.3).

- Do not place any objects on the control valve.

Special storage instructions for elastomers

Elastomer, e.g. actuator diaphragm

- To keep elastomers in shape and to prevent cracking, do not bend them or hang them up.
 - We recommend a storage temperature of 15 °C for elastomers.
 - Store elastomers away from lubricants, chemicals, solutions and fuels.
-

Tip

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

5 Installation

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

5.1 Installation conditions

Work position

The work position for the control valve is the front view looking onto the operating controls (including valve accessories).

Plant operators must ensure that, after installation of the device, the operating personnel

can perform all necessary work safely and easily access the device from the work position.

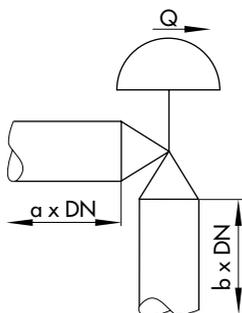
Pipeline routing

The inlet and outlet lengths (see Table 4) vary depending on several variables and process conditions and are intended as recommendations. Contact SAMSON if the lengths are significantly shorter than the recommended lengths.

To ensure that the valve functions properly, proceed as follows:

Table 4: Inlet and outlet lengths

State of process medium	Valve conditions	Inlet length a	Outlet length b
Gas	$Ma \leq 0.3$	2	4
Vapor	$Ma \leq 0.3$ ¹⁾	2	4
Liquid	Free of cavitation/ $w < 10$ m/s	2	4
	Cavitation producing noise/ $w \leq 3$ m/s	2	4
	Cavitation producing noise/ $3 < w < 5$ m/s	2	10



Q Flow rate
a Inlet length
b Outlet length

¹⁾ No wet steam

Installation

- Observe the inlet and outlet lengths (see Table 4). Contact SAMSON if the valve conditions or states of the medium process deviate.
- Install the valve free of stress and with the least amount of vibrations as possible. If necessary, attach supports to the valve.
- Install the valve allowing sufficient space to remove the actuator and valve or to perform service and repair work on them.

Mounting orientation

Generally, we recommend installing the valve with the actuator upright and on top of the valve.

For valves that are intended to be free of cavities, the control valve **must** be installed with the actuator on top:

- Contact SAMSON if the mounting position is not as specified above.

Support and suspension

i Note

The plant engineering company is responsible for selecting and implementing a suitable support or suspension of the installed control valve and the pipeline.

Depending on the valve version and mounting position, the valve, actuator and pipeline must be supported or suspended.

- Valves, which are not installed in the pipeline in the upright position with the actuator on top, must be supported or suspended.

Valve accessories

- During connection of valve accessories, make sure that they are easily accessible and can be operated safely from the work position.

Vent plugs

Vent plugs are screwed into the exhaust air ports of pneumatic and electropneumatic devices. They ensure that any exhaust air that forms can be vented to the atmosphere (to avoid excess pressure in the device). Furthermore, the vent plugs allow air intake to prevent a vacuum from forming in the device.

- Locate the vent plug on the opposite side to the work position of operating personnel.

5.2 Preparation for installation

Before installation, make sure the following conditions are met:

- The valve is clean.
- The valve and all valve accessories (including piping) are not damaged.
- The valve data on the nameplate (type designation, valve size, material, pressure rating and temperature range) match the plant conditions (size and pressure rating of the pipeline, medium temperature etc.). For more details on the nameplate, see section 2.1.
- The requested or required additional pipe fittings have been installed or prepared as necessary before installing the valve.

Proceed as follows:

- Lay out the necessary material and tools to have them ready during installation work.
- Flush the pipelines.

i Note

The plant operator is responsible for cleaning the pipelines in the plant.

- For steam applications, dry the pipelines. Moisture will damage the inside of the valve.
- Check any mounted pressure gauges to make sure they function properly.
- When the valve and actuator are already assembled, check the tightening torques of the bolted joints (▶ AB 0100). Components may loosen during transport.

5.3 Mounting the device

The activities listed below are necessary to install the valve and before it can be started up.

! WARNING

Risk of personal injury due to preloaded springs.

Actuators with preloaded springs are under tension. They can be identified by the long bolts protruding from the bottom of the actuator.

- Before starting any work on the actuator, relieve the compression from the preloaded springs (see associated actuator documentation).

! NOTICE

Risk of valve damage due to excessively high or low tightening torques.

Observe the specified torques when tightening control valve components. Excessive tightening torques lead to parts wearing out more quickly. Parts that are too loose may cause leakage.

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

! NOTICE

Risk of valve damage due to the use of unsuitable tools.

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

! NOTICE

Risk of the process medium being contaminated through the use of unsuitable lubricants and/or contaminated tools and components.

- Keep the valve and the tools used free from solvents and grease.
- Make sure that only suitable lubricants are used.

i Note

To meet 3-A conformity requirements, a gasket recommended by 3-A Sanitary Standards Inc. (see website

- ▶ <http://www.3-a.org>) must be used for a Type 3349 Valve with threaded ends according to DIN 11851/DIN 11887.

5.3.1 Mounting the actuator onto the valve

Depending on the version, SAMSON control valves are either delivered with the actuator already mounted on the valve or the valve and actuator are delivered separately. When delivered separately, the valve and actuator must be assembled together on site.

a) Version with Type 3271 or Type 3277 Actuator

Refer to Fig. 11

Proceed as described in the actuator documentation if the valve and actuator have not been assembled by SAMSON.

→ Make sure that the dimension x from the bottom of the actuator stem to the bottom of the actuator case is correctly adjusted (see Table 5).

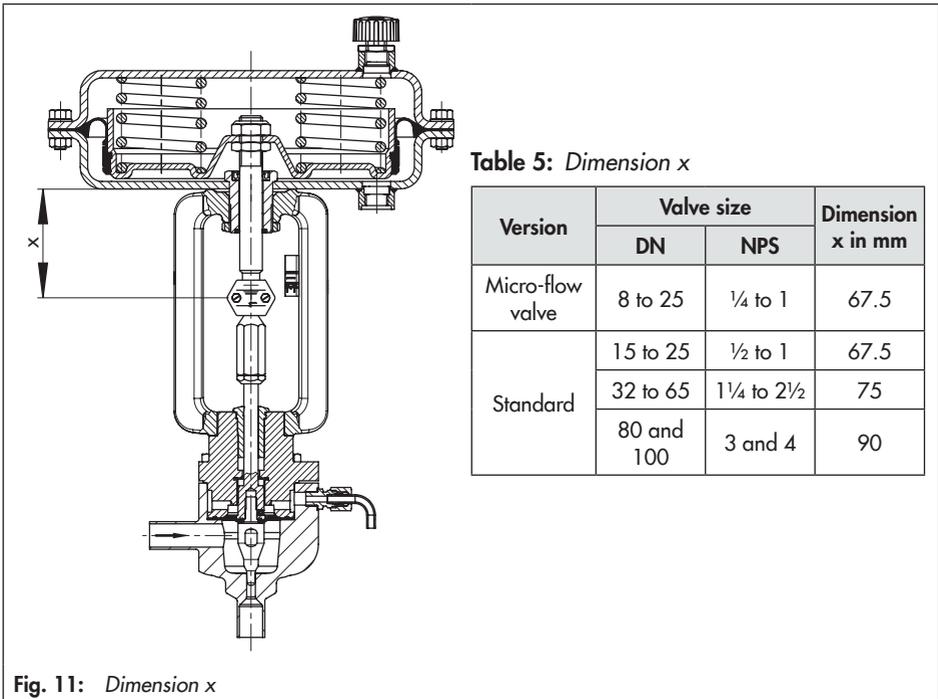


Table 5: Dimension x

Version	Valve size		Dimension x in mm
	DN	NPS	
Micro-flow valve	8 to 25	¼ to 1	67.5
Standard	15 to 25	½ to 1	67.5
	32 to 65	1¼ to 2½	75
	80 and 100	3 and 4	90

Fig. 11: Dimension x

b) Version with Type 3379 Actuator

Refer to Fig. 10

i Note

To prevent the actuator stem from rotating, a locking pin with 3.5 mm diameter is required. The locking pin (item no. 1281-0066) can be ordered from SAMSON.

1. Undo the screws (34) on the valve bonnet (20).
2. Lift the valve bonnet (20) together with the plug (2), plug stem (3) and diaphragm (24) off the body (1).
3. Screw the actuator (A) onto the valve bonnet (20).
4. **"Actuator stem extends" fail-safe action:** guide the locking pin (\varnothing 3.5 mm) through the hole located in the bottom actuator section and the actuator stem.
"Actuator stem retracts" fail-safe action: apply 6 bar signal pressure to the actuator. Guide the locking pin (\varnothing 3.5 mm) through the hole located in the bottom actuator section and the actuator stem.
5. Unscrew the plug stem (3) together with diaphragm (24) and plug (2) from the actuator stem.
6. Remove locking pin.
7. Place the actuator and valve bonnet (20) together with the plug (2), plug stem (3) and diaphragm (24) onto the body (1).

8. Gradually tighten the screws (34) on the valve bonnet (20) in a crisscross pattern. Observe tightening torques.
9. For further instructions concerning Type 3379 Actuator (pneumatic connections, alignment of the actuator etc.) u EB 8315.

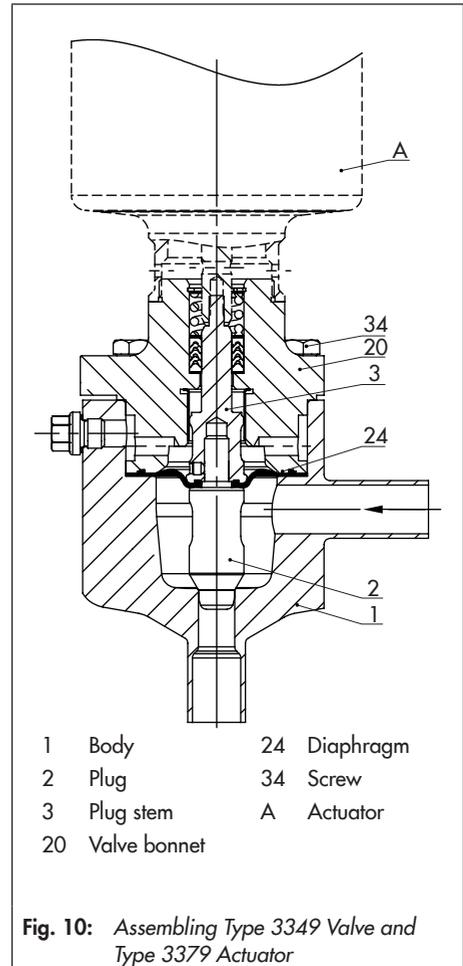


Fig. 10: Assembling Type 3349 Valve and Type 3379 Actuator

5.4 Installing the valve into the pipeline

⚠ NOTICE

Risk of valve damage due to work being carried out by personnel not qualified for such tasks.

The plant operator or specialist company performing the welding is responsible for the selection of the welding procedure and the actual welding operations on the valve. This also applies to any required heat treatment to be performed on the valve.

→ Only allow qualified welding personnel to carry out welding operations.

⚠ NOTICE

Premature wear and leakage due to insufficient support or suspension.

→ Support or suspend the valve sufficiently at suitable points.

1. Close the shut-off valves in the pipeline at the inlet and outlet of the plant section while the valve is being installed.
2. Prepare the relevant section of the pipeline for installing the valve.
3. Remove the protective caps from the valve ports before installing the valve.
4. Lift the valve using suitable lifting equipment to the site of installation (see section 4.3.2). Observe the flow direction through the valve. The arrow on the valve indicates the direction of flow.

5. Completely retract the actuator stem to protect the plug from sparks during welding.
6. Weld the valve free of stress into the pipeline.
7. Attach a support or suspension on the valve, if necessary.

5.5 Testing the installed valve

⚠ DANGER

Risk of bursting due to incorrect opening of pressurized equipment or components.

Valves and pipelines are pressure equipment that may burst when handled incorrectly.

Flying projectile fragments or the release of process medium under pressure can cause serious injury or even death.

Before working on the control valve:

- Depressurize all plant sections affected and the valve (including the actuator). Release any stored energy.
- Drain the process medium from all the plant sections concerned as well as the valve.

⚠ WARNING

Risk of personal injury due to pressurized components and process medium being discharged.

- Do not loosen the screw of the test connection while the valve is pressurized.

⚠ WARNING**Risk of hearing loss or deafness due to loud noise.**

Noise emission (e.g. cavitation or flashing) may occur during operation caused by the process medium and the operating conditions. Additionally, a loud noise may briefly occur through the sudden venting of the pneumatic actuator or pneumatic valve accessories not fitted with noise-reducing fittings. Both can damage hearing.

- ➔ Wear hearing protection when working near the valve.

⚠ WARNING**Crush hazard arising from actuator and plug stem moving in pneumatic control valves with Type 3271 or Type 3277 Actuator.**

- ➔ Do not insert hands or finger into the yoke while the air supply is connected to the actuator.
- ➔ Before working on the control valve, disconnect and lock the pneumatic air supply as well as the control signal.
- ➔ Do not impede the movement of the actuator and plug stem by inserting objects into the yoke.
- ➔ Before unblocking the actuator and plug stem after they have become blocked (e.g. due to seizing up after remaining in the same position for a long time), release any stored energy in the actuator (e.g. spring compression). See associated actuator documentation.

⚠ WARNING**Risk of personal injury due to exhaust air being vented.**

While the valve is operating, air is vented from the actuator, for example, during closed-loop operation or when the valve opens or closes.

- ➔ Wear eye protection when working in close proximity to the control valve.

⚠ WARNING**Risk of personal injury due to preloaded springs.**

Actuators with preloaded springs are under tension. They can be identified by the long bolts protruding from the bottom of the actuator.

- ➔ Before starting any work on the actuator, relieve the compression from the preloaded springs (see associated actuator documentation).

ⓘ NOTICE**Diaphragm damage through the use of an incompressible medium.**

Closing the valve when the shut-off valves upstream and downstream of the valve are closed may lead to the diaphragm rupturing in plants with liquid media flowing through them.

- ➔ Only close the valve when the shut-off valves upstream and downstream of the valve are open.

Installation

To test the valve functioning before start-up or putting back the valve into operation, perform the following tests:

5.5.1 Leak test

The plant operator is responsible for performing the leak test and selecting the test method. The leak test must comply with the requirements of the national and international standards that apply at the site of installation.



Tip

Our after-sales service can support you to plan and perform a leak test for your plant.

1. Close the valve.
2. Slowly apply the test medium to the inlet space upstream of the valve. A sudden surge in pressure and resulting high flow velocities can damage the valve.
3. Open the valve.
4. Apply the required test pressure.
5. Check the valve for leakage to the atmosphere.
6. Depressurize the pipeline section and valve.
7. Rework any parts that leak and repeat the leak test.

5.5.2 Travel motion

The movement of the actuator stem must be linear and smooth.

- Apply the maximum and minimum control signals to check the end positions of the valve while observing the movement of the actuator stem.
- Check the travel reading at the travel indicator scale.

5.5.3 Fail-safe position

- Shut off the signal pressure line.
- Check whether the valve moves to the fail-safe position (see section 3.1).

5.5.4 Pressure test

The plant operator is responsible for performing the pressure test.



Tip

Our after-sales service can support you to plan and perform a pressure test for your plant.

During the pressure test, make sure the following conditions are met:

- Retract the plug stem to open the valve.
- Observe the maximum permissible pressure for both the valve and plant.

6 Start-up

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

⚠ WARNING

Risk of burn injuries due to hot or cold components and pipeline.

Valve components and the pipeline may become very hot or cold. Risk of burn injuries.

- Allow components and pipelines to cool down or warm up to the ambient temperature.
- Wear protective clothing and safety gloves.

⚠ WARNING

Risk of personal injury due to pressurized components and process medium being discharged.

- Do not loosen the screw of the test connection while the valve is pressurized.

⚠ WARNING

Risk of hearing loss or deafness due to loud noise.

Noise emission (e.g. cavitation or flashing) may occur during operation caused by the process medium and the operating conditions. Additionally, a loud noise may briefly occur through the sudden venting of the pneumatic actuator or pneumatic valve accessories not fitted with noise-reducing fittings. Both can damage hearing.

- Wear hearing protection when working near the valve.

⚠ WARNING

Crush hazard arising from actuator and plug stem moving in pneumatic control valves with Type 3271 or Type 3277 Actuator.

- Do not insert hands or finger into the yoke while the air supply is connected to the actuator.
- Before working on the control valve, disconnect and lock the pneumatic air supply as well as the control signal.
- Do not impede the movement of the actuator and plug stem by inserting objects into the yoke.
- Before unblocking the actuator and plug stem after they have become blocked (e.g. due to seizing up after remaining in the same position for a long time), release any stored energy in the actuator (e.g. spring compression). See associated actuator documentation.

⚠ WARNING

Risk of personal injury due to exhaust air being vented.

While the valve is operating, air is vented from the actuator, for example, during closed-loop operation or when the valve opens or closes.

- Wear eye protection when working in close proximity to the control valve.

NOTICE

Diaphragm damage through the use of an incompressible medium.

Closing the valve when the shut-off valves upstream and downstream of the valve are closed may lead to the diaphragm rupturing in plants with liquid media flowing through them.

→ Only close the valve when the shut-off valves upstream and downstream of the valve are open.

Before start-up or putting the valve back into service, make sure the following conditions are met:

- The valve is properly installed into the pipeline (see section 5).
- The leak and function tests have been completed successfully (see section 5.5).
- The prevailing conditions in the plant section affected meet the valve sizing requirements (see information under 'Intended use' in section 1).

Start-up/putting the device back into operation

1. Allow the valve to cool down or warm up to reach ambient temperature before start-up when the ambient temperature and process medium temperature differ greatly or the medium properties require such a measure.
2. Slowly open the shut-off valves in the pipeline. Slowly opening these valves prevents a sudden surge in pressure and high flow velocities which can damage the valve.

3. Check the valve to ensure it functions properly.

7 Operation

Immediately after completing start-up or putting the valve back into operation, the valve is ready for use.

WARNING

Risk of burn injuries due to hot or cold components and pipeline.

Valve components and the pipeline may become very hot or cold. Risk of burn injuries.

- Allow components and pipelines to cool down or warm up to the ambient temperature.
 - Wear protective clothing and safety gloves.
-

WARNING

Risk of personal injury due to pressurized components and process medium being discharged.

- Do not loosen the screw of the test connection while the valve is pressurized.
-

WARNING

Risk of hearing loss or deafness due to loud noise.

Noise emission (e.g. cavitation or flashing) may occur during operation caused by the process medium and the operating conditions. Additionally, a loud noise may briefly

occur through the sudden venting of the pneumatic actuator or pneumatic valve accessories not fitted with noise-reducing fittings. Both can damage hearing.

- Wear hearing protection when working near the valve.

⚠ WARNING

Crush hazard arising from actuator and plug stem moving in pneumatic control valves with Type 3271 or Type 3277 Actuator.

- Do not insert hands or finger into the yoke while the air supply is connected to the actuator.
- Before working on the control valve, disconnect and lock the pneumatic air supply as well as the control signal.
- Do not impede the movement of the actuator and plug stem by inserting objects into the yoke.
- Before unblocking the actuator and plug stem after they have become blocked (e.g. due to seizing up after remaining in the same position for a long time), release any stored energy in the actuator (e.g. spring compression). See associated actuator documentation.

⚠ WARNING

Risk of personal injury due to exhaust air being vented.

While the valve is operating, air is vented from the actuator, for example, during closed-loop operation or when the valve opens or closes.

- Wear eye protection when working in close proximity to the control valve.

⚠ WARNING

Risk of personal injury due to process medium escaping.

- Align the pipe elbow to ensure that any escaping process medium does not hit operating personnel.
- Wear protective clothing (eye protection, safety gloves) when working in close proximity to the control valve.

ⓘ NOTICE

Risk of impairment of aseptic or hygienic service.

In the version with backup packing, the test connection is sealed by a stopper.

- To guarantee aseptic or hygienic service, connect a leakage detection device to the test connection.

ⓘ NOTICE

Diaphragm damage through the use of an incompressible medium.

Closing the valve when the shut-off valves upstream and downstream of the valve are closed may lead to the diaphragm rupturing in plants with liquid media flowing through them.

- Only close the valve when the shut-off valves upstream and downstream of the valve are open.

Malfunctions

7.1 CIP (cleaning-in-place)

CIP can be performed with commonly used cleaning fluids.

- Observe the applicable hygiene regulations.

7.2 SIP (sterilization-in-place)

SIP can be performed using steam at a temperature up to 180 °C for a maximum of 30 minutes.

- Observe the applicable hygiene regulations.

8 Malfunctions

Read hazard statements, warnings and caution notes in sections 1.1, 1.2 and 1.3.

Depending on the operating conditions, check the valve 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.

8.1 Troubleshooting

Malfunction	Possible reasons	Recommended action
Actuator/plug stem does not move on demand.	Actuator is blocked.	Check attachment. Remove the blockage. WARNING! A blocked actuator or plug stem (e.g. due to seizing up after remaining in the same position for a long time) can suddenly start to move uncontrollably. Injury to hands or fingers is possible if they are inserted into the actuator or valve. Before trying to unblock the actuator or plug stem, disconnect and lock the pneumatic air supply as well as the control signal. Before unblocking the actuator, release any stored energy in the actuator (e.g. spring compression). See associated actuator documentation.
	Diaphragm in the actuator defective	See associated actuator documentation.
	Signal pressure too low	Check the signal pressure. Check the signal pressure line for leakage.

Malfunction	Possible reasons	Recommended action
Actuator and plug stem does not stroke through the entire range.	Signal pressure too low	Check the signal pressure. Check the signal pressure line for leakage.
	Plug has become detached.	Fasten plug and plug stem together (see section 9.4.2 and 9.5.2).
	Incorrect setting of valve accessories	Check the settings of the valve accessories.
Increased flow through closed valve (seat leakage)	Dirt or other foreign particles deposited between the seat and plug.	Shut off the section of the pipeline and flush the valve.
	Valve trim, particularly with soft seat, is worn.	Replace the plug (see section 9.4.2 or section 9.5.2) or contact our after-sales service.
The valve leaks to the atmosphere (fugitive emissions).	Defective packing	Replace the packing (see section 9.4.1 or section 9.5.1) or contact our after-sales service.
	Diaphragm not correctly clamped into position.	Check that the diaphragm is correctly seated. If necessary, replace the diaphragm (see section 9.4.2 or 9.5.2). Check the tightening torque of the joint between plug and plug stem. Check the tightening torque of the joint between body and bonnet/flange.
	Diaphragm damaged.	Replace the diaphragm (see section 9.4.2 or 9.5.2).

i Note

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

8.2 Emergency action

Plant operators are responsible for emergency action to be taken in the plant.

In the event of a valve malfunction:

1. Close the shut-off valves upstream and downstream of the control valve to stop

the process medium from flowing through the valve.

2. Perform troubleshooting (see section 8.1).
3. Rectify those malfunctions that can be remedied based on the instructions provided here. Contact our after-sales service in all other cases.

Putting the valve back into operation after a malfunction

See section 6.

9 Servicing

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

The following documents are also required for servicing the valve:

- Mounting and operating instructions for the mounted actuator, e.g. ► EB 8310-X for Type 3271 or Type 3277 Pneumatic Actuator
- ► AB 0100 for tools, tightening torques and lubricant

⚠ DANGER

Risk of bursting due to incorrect opening of pressurized equipment or components.

Valves and pipelines are pressure equipment that may burst when handled incorrectly. Flying projectile fragments or the release of process medium under pressure can cause serious injury or even death.

Before working on the control valve:

- Depressurize all plant sections affected and the valve (including the actuator). Release any stored energy.
- Drain the process medium from all the plant sections concerned as well as the valve.

⚠ WARNING

Risk of burn injuries due to hot or cold components and pipeline.

Valve components and the pipeline may become very hot or cold. Risk of burn injuries.

- Allow components and pipelines to cool down or warm up to the ambient temperature.
- Wear protective clothing and safety gloves.

⚠ WARNING

Risk of personal injury due to pressurized components and process medium being discharged.

- Do not loosen the screw of the test connection while the valve is pressurized.

⚠ WARNING

Risk of hearing loss or deafness due to loud noise.

Noise emission (e.g. cavitation or flashing) may occur during operation caused by the process medium and the operating conditions. Additionally, a loud noise may briefly occur through the sudden venting of the pneumatic actuator or pneumatic valve accessories not fitted with noise-reducing fittings. Both can damage hearing.

- Wear hearing protection when working near the valve.

⚠ WARNING

Crush hazard arising from actuator and plug stem moving in pneumatic control valves with Type 3271 or Type 3277 Actuator.

- Do not insert hands or finger into the yoke while the air supply is connected to the actuator.

- Before working on the control valve, disconnect and lock the pneumatic air supply as well as the control signal.
- Do not impede the movement of the actuator and plug stem by inserting objects into the yoke.
- Before unblocking the actuator and plug stem after they have become blocked (e.g. due to seizing up after remaining in the same position for a long time), release any stored energy in the actuator (e.g. spring compression). See associated actuator documentation.

⚠ WARNING

Risk of personal injury due to exhaust air being vented.

While the valve is operating, air is vented from the actuator, for example, during closed-loop operation or when the valve opens or closes.

- Wear eye protection when working in close proximity to the control valve.

⚠ WARNING

Risk of personal injury due to preloaded springs.

Actuators with preloaded springs are under tension. They can be identified by the long bolts protruding from the bottom of the actuator.

- Before starting any work on the actuator, relieve the compression from the preloaded springs (see associated actuator documentation).

⚠ WARNING

Risk of personal injury due to residual process medium in the valve.

While working on the valve, residual medium can flow out of the valve and, depending on its properties, cause personal injury, e.g. (chemical) burns.

- Wear protective clothing, safety gloves, respiratory protection and eye protection.

⚠ NOTICE

Risk of valve damage due to excessively high or low tightening torques.

Observe the specified torques when tightening control valve components. Excessive tightening torques lead to parts wearing out more quickly. Parts that are too loose may cause leakage.

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

⚠ NOTICE

Risk of valve damage due to the use of unsuitable tools.

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

⚠ NOTICE

Risk of valve damage due to the use of unsuitable lubricants.

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

NOTICE

Risk of the process medium being contaminated through the use of unsuitable lubricants and/or contaminated tools and components.

- Keep the valve and the tools used free from solvents and grease.
- Make sure that only suitable lubricants are used.

Note

The control valve was checked by SAMSON before delivery.

- Certain test results certified by SAMSON lose their validity when the valve is opened. Such testing includes seat leakage and leak tests.
- The product warranty becomes void if service or repair work not described in these instructions is performed without prior agreement by SAMSON's After-sales Service.
- Only use original spare parts by SAMSON, which comply with the original specifications.

9.1 Checking the extent of servicing

- Check wear at seat and plug. Replace the damaged plug (see section 9.4.2 or 9.5.2).
- Check the diaphragm for damage (e.g. cracks, milky coloring at the bends). Re-

place the damaged diaphragm (see section 9.4.2 or 9.5.2).

- If the valve leaks even if the diaphragm is intact, check the tightening torque of the joint between plug and plug stem as well as body and bonnet/flange.

9.2 Preparing the valve for service work

1. Lay out the necessary material and tools to have them ready for the service work.
2. Put the control valve out of operation (see section 10).
3. Remove the valve from the pipeline (see section 11).

9.3 Installing the valve after service work

1. Reinstall the valve into the pipeline (see section 5).
2. Put the control valve back into operation (see section 6). Observe the requirements and conditions for start-up or putting the valve back into operation.

9.4 Service work for version with Type 3271 or Type 3277 Actuator

- Before performing any service work, preparations must be made to the control valve (see section 9.2).

- ➔ After all service work is completed, check the control valve before putting it back into operation (see section 5.5).

9.4.1 Replacing the packing

1. Remove the actuator from the valve. See associated actuator documentation.
2. Undo the hex screws (34).
3. Lift the flange (20) together with the plug stem (3), plug (2) and diaphragm (24) off the body (1).
4. Unscrew the threaded bushing (5).
5. Pull the plug (2) together with plug stem (3) and diaphragm (24) out of the flange (20).
6. Pull the entire packing out of the packing chamber using a suitable tool. Renew the damaged parts and carefully clean the packing chamber.
7. Push the plug (2) together with plug stem (3) and diaphragm (24) into the flange (20).
8. Carefully slide the packing parts over the plug stem into the packing chamber using a suitable tool.
9. Tighten the threaded bushing (5).
10. Place the flange (20) together with the plug stem (3), plug (2) and diaphragm (24) onto the body (1).
11. Apply a suitable lubricant to the hex screws (34).
12. Tighten the hex screws (34) on the flange (20) gradually in a crisscross pattern. Observe tightening torques.

13. Mount actuator. See associated actuator documentation and section 5.
14. Adjust lower or upper signal bench range. See associated actuator documentation.

9.4.2 Replacing the diaphragm and plug

1. Remove the actuator from the valve. See associated actuator documentation.
 2. Undo the hex screws (34).
 3. Lift the flange (20) together with the plug stem (3), plug (2) and diaphragm (24) off the body (1).
 4. Pull the plug (2) together with plug stem (3) and diaphragm (24) out of the flange (20).
- For version with packing:** replace the packing (see section 9.4.1).
5. Unscrew the threaded pin (6).
 6. Unscrew the plug stem (3) from the plug (2).
 7. Remove diaphragm (24).
 8. Apply a suitable lubricant to the thread of the plug stem (3).
 9. Screw a new plug (2) onto the plug stem (3) using a suitable tool. Observe tightening torques.
 10. Mark the side mounting position.
 11. Unscrew the plug stem (3) from the plug (2).
 12. Insert a new diaphragm (24) into the new plug.

Servicing

13. Screw the new plug (2) back onto the plug stem (3) again using a suitable tool. Align the plug stem with the mounted position mark made earlier. To do this, clamp the plug into a suitable clamping fixture and pull it with a suitable tool.
14. Remove the mounting position mark.
15. Secure the plug (2) with the threaded pin (6).
16. Check the concentricity of the plug (see section 9.6).
17. Push the plug (2) together with plug stem (3) and diaphragm (24) into the flange (20).
18. Place the flange (20) together with the plug stem (3), plug (2) and diaphragm (24) onto the body (1).
19. Apply a suitable lubricant to the hex screws (34).
20. Tighten the hex screws (34) on the flange (20) gradually in a crisscross pattern until the valve bonnet touches the body flange.
21. Mount actuator. See associated actuator documentation and section 5.
22. Adjust lower or upper signal bench range. See associated actuator documentation.

i Note

Greater deformation forces are required for new diaphragms (in comparison to already installed diaphragms). We recommend shaping the new diaphragms beforehand using conventional hex screws:

- Tighten the conventional hex screws as described in step 20.*
 - Replace the conventional hex screws with the existing hex screws (34).*
 - Tighten the hex screws (34) as described in step 20.*
-

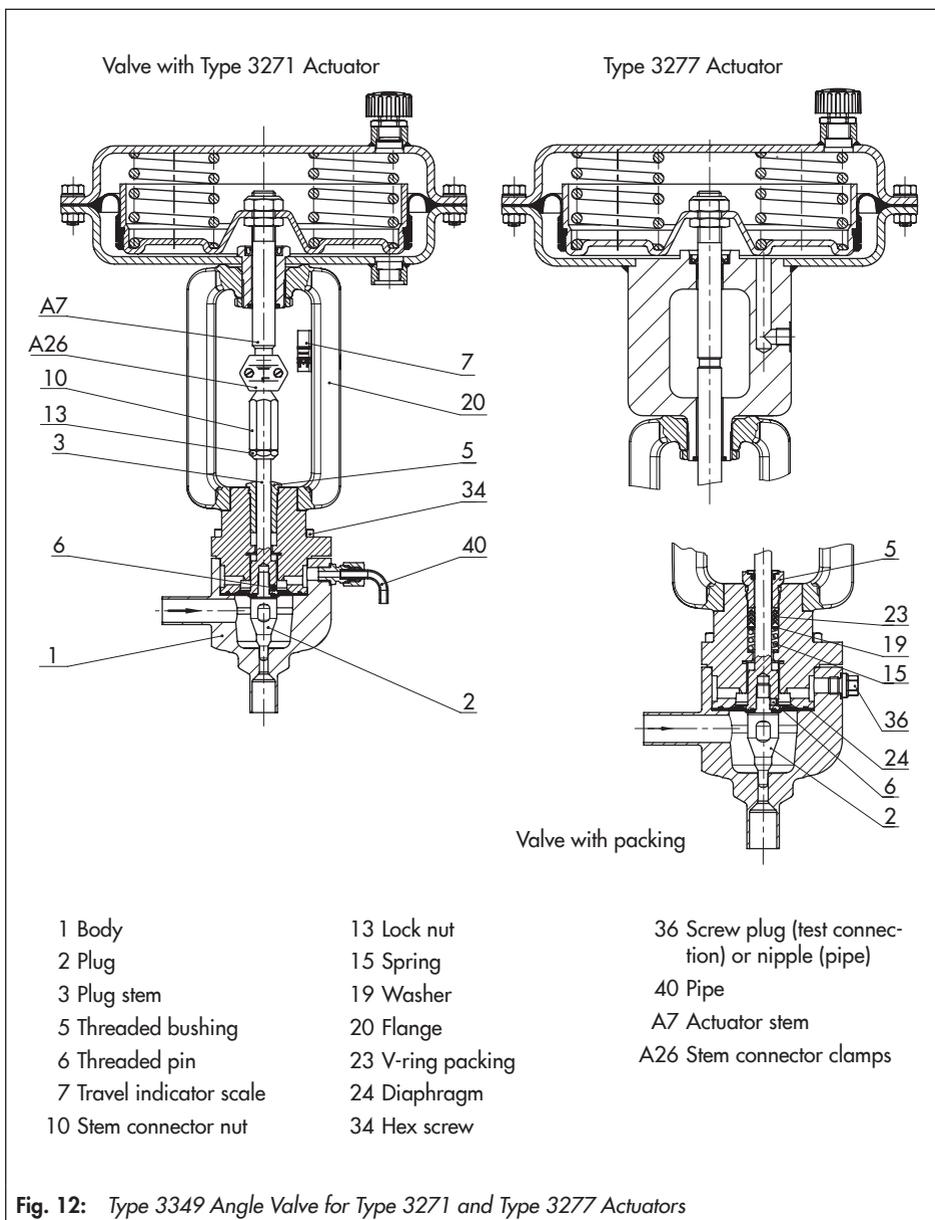


Fig. 12: Type 3349 Angle Valve for Type 3271 and Type 3277 Actuators

9.5 Service work for version with Type 3379 Actuator

i Note

To prevent the actuator stem from rotating, a locking pin with 3.5 mm diameter is required. The locking pin (item no. 1281-0066) can be ordered from SAMSON.

9.5.1 Replacing the packing

1. Undo the screws (34) on the valve bonnet (20).
2. Lift the actuator (A) and valve bonnet (20) together with the plug stem (3), plug (2) and diaphragm (24) off the body (1).
3. **"Actuator stem extends" fail-safe action:** guide the locking pin (\varnothing 3.5 mm) through the hole located in the bottom actuator section and the actuator stem.
"Actuator stem retracts" fail-safe action: apply 6 bar signal pressure to the actuator. Guide the locking pin (\varnothing 3.5 mm) through the hole located in the bottom actuator section and the actuator stem.
4. Unscrew the plug stem (3) together with plug (2) and diaphragm (24) off the actuator stem and pull it out of the valve bonnet (20).
5. Unscrew the actuator (A) from the valve bonnet (20).
6. Remove locking pin.
7. Compress the packing using a suitable tool and remove the snap ring (42).
8. Pull the entire packing out of the packing chamber using a suitable tool. Renew the damaged parts and carefully clean the packing chamber.
9. Check the plug and diaphragm for damage. Replace them, if necessary (see section 9.5.2).
10. Push the plug (2) together with plug stem (3) and diaphragm (24) into the valve bonnet (20).
11. Carefully slide the packing parts over the plug stem into the packing chamber using a suitable tool.
12. Compress the packing using a suitable tool and insert the snap ring (42).
13. Screw the actuator (A) onto the valve bonnet (20).
14. **"Actuator stem extends" fail-safe action:** guide the locking pin (\varnothing 3.5 mm) through the hole located in the bottom actuator section and the actuator stem.
"Actuator stem retracts" fail-safe action: apply 6 bar signal pressure to the actuator. Guide the locking pin (\varnothing 3.5 mm) through the hole located in the bottom actuator section and the actuator stem.
15. Apply a suitable lubricant to the actuator stem.
16. Screw the plug stem (3) together with plug (2) and diaphragm (24) onto the actuator stem. Observe tightening torques.
17. Remove locking pin.

18. Place the actuator and valve bonnet (20) together with the plug stem (3), plug (2) and diaphragm (24) onto the body (1).
19. Apply a suitable lubricant to the hex screws (34).
20. Tighten the hex screws (34) on the valve bonnet (20) gradually in a crisscross pattern. Observe tightening torques.
21. For version with Type 3724 Positioner: initialize the positioner (▶ EB 8395).

9.5.2 Replacing the diaphragm and plug

i Note

Before replacing the diaphragm and plug, remove the valve from the plant.

1. Undo the screws (34) on the valve bonnet (20).
2. Lift the actuator (A) and valve bonnet (20) together with the plug stem (3), plug (2) and diaphragm (24) off the body (1).
3. **"Actuator stem extends" fail-safe action:** guide the locking pin (Ø 3.5 mm) through the hole located in the bottom actuator section and the actuator stem.
"Actuator stem retracts" fail-safe action: apply 6 bar signal pressure to the actuator. Guide the locking pin (Ø 3.5 mm) through the hole located in the bottom actuator section and the actuator stem.
4. Unscrew the plug stem (3) together with plug (2) and diaphragm (24) off the actuator stem and pull it out of the valve bonnet (20).
5. Unscrew the actuator (A) from the valve bonnet (20).
6. Remove locking pin.
For version with packing: replace the packing (see section 9.5.1).
7. Unscrew the threaded pin (6).
8. Unscrew the plug stem (3) from the plug (2).
9. Remove diaphragm (24).
10. Apply a suitable lubricant to the thread of the plug stem (3).
11. Screw a new plug (2) onto the plug stem (3) using a suitable tool. Observe tightening torques.
12. Mark the side mounting position.
13. Unscrew the plug stem (3) from the plug (2).
14. Insert a new diaphragm (24) into the new plug.
15. Screw the new plug (2) back onto the plug stem (3) again using a suitable tool. Align the plug stem with the mounted position mark made earlier. To do this, clamp the plug into a suitable clamping fixture and pull it with a suitable tool.
16. Remove the mounting position mark.
17. Secure the plug (2) with the threaded pin (6).
18. Check the concentricity of the plug (see section 9.6).

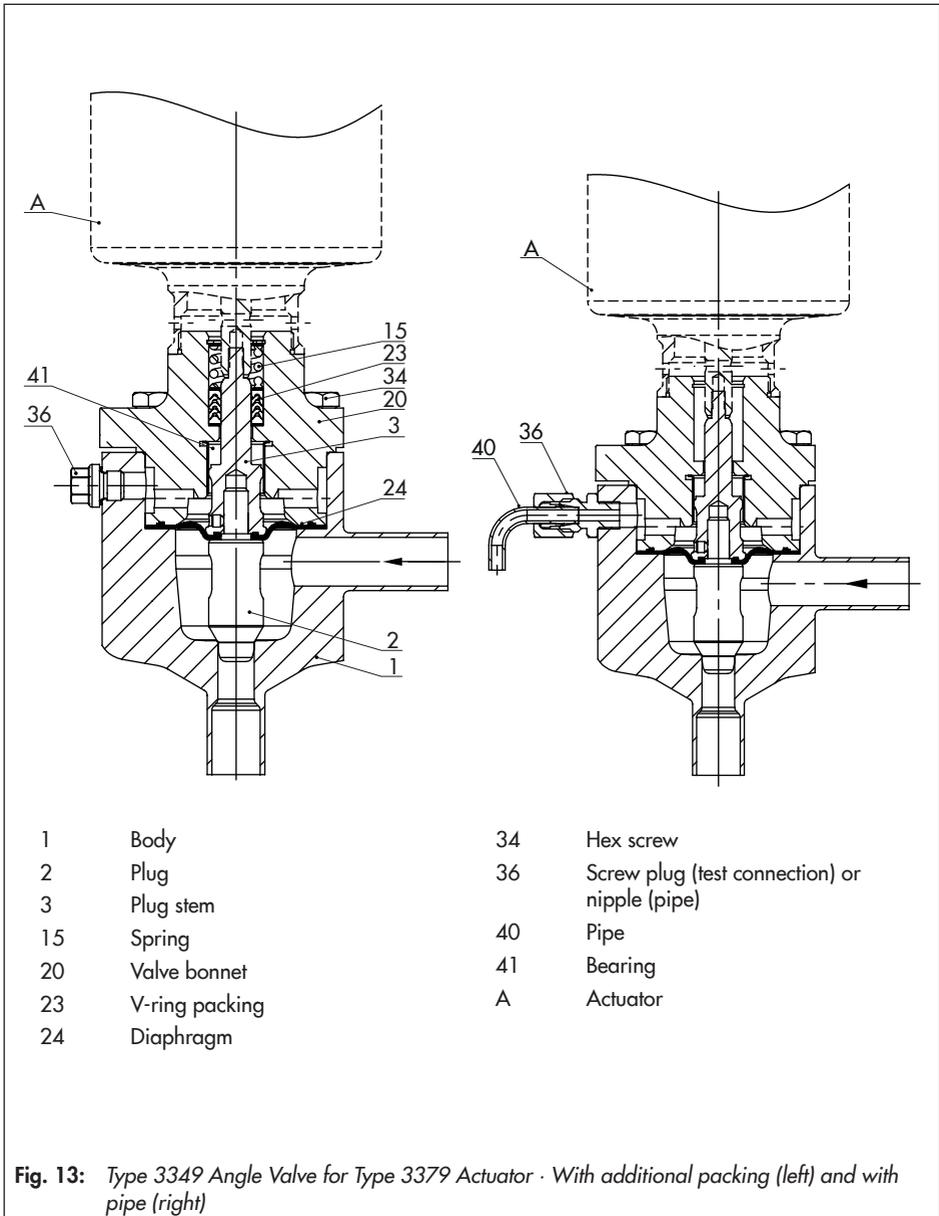


Fig. 13: Type 3349 Angle Valve for Type 3379 Actuator · With additional packing (left) and with pipe (right)

19. Push the plug (2) together with plug stem (3) and diaphragm (24) into the valve bonnet (20).
20. Apply a suitable lubricant to the thread of the valve bonnet (20).
21. Screw the actuator (A) onto the valve bonnet (20).
22. **"Actuator stem extends" fail-safe action:** guide the locking pin (\varnothing 3.5 mm) through the hole located in the bottom actuator section and the actuator stem.
"Actuator stem retracts" fail-safe action: apply 6 bar signal pressure to the actuator. Guide the locking pin (\varnothing 3.5 mm) through the hole located in the bottom actuator section and the actuator stem.
23. Apply a suitable lubricant to the actuator stem.
24. Screw the plug stem (3) together with plug (2) and diaphragm (24) onto the actuator stem. Observe tightening torques.
25. Remove locking pin.
26. Place the actuator and valve bonnet (20) together with the plug stem (3), plug (2) and diaphragm (24) onto the body (1).
27. Apply a suitable lubricant to the hex screws (34).
28. Tighten the hex screws (34) on the flange (20) gradually in a crisscross pattern until the valve bonnet touches the body flange.

i Note

Greater deformation forces are required for new diaphragms (in comparison to already

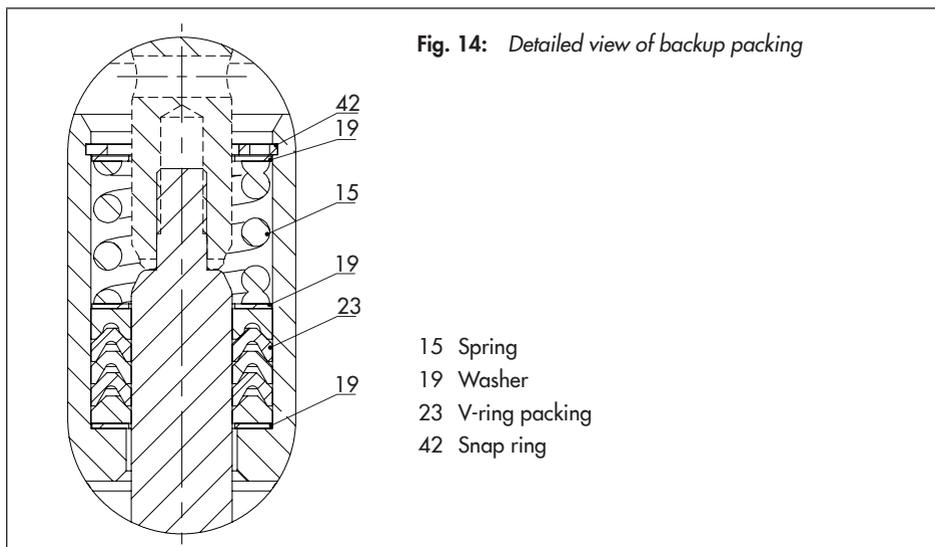


Fig. 14: Detailed view of backup packing

- 15 Spring
- 19 Washer
- 23 V-ring packing
- 42 Snap ring

Servicing

installed diaphragms). We recommend shaping the new diaphragms beforehand using conventional hex screws:

- Tighten the conventional hex screws as described in step 28.
- Replace the conventional hex screws with the existing hex screws (34).
- Tighten the hex screws (34) as described in step 28.

29. For version with Type 3724 Positioner: initialize the positioner (► EB 8395).

9.6 Checking the concentricity of the plug to the plug stem

Before mounting the plug, the concentricity of the plug to the plug stem must be checked.

1. Clamp the plug stem into a suitable chuck.
2. Check the concentricity of the plug to the plug stem. Observe the values listed in Table 6 and Table 7.
3. If the concentricity deviates, use a suitable tool (e.g. plastic hammer) and hit the plug until concentricity is achieved.



Tip

Instead of aligning the plug, the assembly (consisting of plug stem, diaphragm and plug) can be ordered from SAMSON.

Table 6: Concentricity of the plug · Version with Type 3271 or Type 3277 Actuator

Valve size		Max. deviation in mm
DN	NPS	
8 to 25	¼ to 1	0.01
15 to 25	½ to 1	0.01
32 to 65	1¼ to 2½	0.04
80 and 100	3 and 4	0.05

Table 7: Concentricity of the plug · Version with Type 3379 Actuator

Valve size		Max. deviation in mm
DN	NPS	
8 to 25	¼ to 1	0.01
15 to 25	½ to 1	0.01
32 to 50	1¼ to 2	0.04

9.7 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

Details on spare parts are available on request.

Lubricant

See document ► AB 0100 for details on suitable lubricants.

Tools

See document ► AB 0100 for details on suitable tools.

10 Decommissioning

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

⚠ DANGER

Risk of bursting due to incorrect opening of pressurized equipment or components.

Valves and pipelines are pressure equipment that may burst when handled incorrectly.

Flying projectile fragments or the release of process medium under pressure can cause serious injury or even death.

Before working on the control valve:

- Depressurize all plant sections affected and the valve (including the actuator). Release any stored energy.
- Drain the process medium from all the plant sections concerned as well as the valve.

⚠ WARNING

Risk of burn injuries due to hot or cold components and pipeline.

Valve components and the pipeline may become very hot or cold. Risk of burn injuries.

- Allow components and pipelines to cool down or warm up to the ambient temperature.
- Wear protective clothing and safety gloves.

⚠ WARNING

Risk of personal injury due to pressurized components and process medium being discharged.

- Do not loosen the screw of the test connection while the valve is pressurized.

⚠ WARNING

Risk of hearing loss or deafness due to loud noise.

Noise emission (e.g. cavitation or flashing) may occur during operation caused by the process medium and the operating conditions. Additionally, a loud noise may briefly occur through the sudden venting of the pneumatic actuator or pneumatic valve accessories not fitted with noise-reducing fittings. Both can damage hearing.

- Wear hearing protection when working near the valve.

⚠ WARNING

Crush hazard arising from actuator and plug stem moving in pneumatic control valves with Type 3271 or Type 3277 Actuator.

- Do not insert hands or finger into the yoke while the air supply is connected to the actuator.
- Before working on the control valve, disconnect and lock the pneumatic air supply as well as the control signal.
- Do not impede the movement of the actuator and plug stem by inserting objects into the yoke.

Decommissioning

→ Before unblocking the actuator and plug stem after they have become blocked (e.g. due to seizing up after remaining in the same position for a long time), release any stored energy in the actuator (e.g. spring compression). See associated actuator documentation.

WARNING

Risk of personal injury due to exhaust air being vented.

While the valve is operating, air is vented from the actuator, for example, during closed-loop operation or when the valve opens or closes.

→ Wear eye protection when working in close proximity to the control valve.

WARNING

Risk of personal injury due to residual process medium in the valve.

While working on the valve, residual medium can flow out of the valve and, depending on its properties, cause personal injury, e.g. (chemical) burns.

→ Wear protective clothing, safety gloves, respiratory protection and eye protection.

NOTICE

Diaphragm damage through the use of an incompressible medium.

Closing the valve when the shut-off valves upstream and downstream of the valve are closed may lead to the diaphragm rupturing

in plants with liquid media flowing through them.

→ Only close the valve when the shut-off valves upstream and downstream of the valve are open.

To decommission the control valve for service work or to remove it from the pipeline, proceed as follows:

1. Close the shut-off valves upstream and downstream of the control valve to stop the process medium from flowing through the valve.
2. Completely drain the pipelines and valve.
3. Disconnect and lock the pneumatic air supply to depressurize the actuator.
4. Release any stored energy.
5. If necessary, allow the pipeline and valve components to cool down or warm up to the ambient temperature.

11 Removal

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

⚠ WARNING

Risk of burn injuries due to hot or cold components and pipeline.

Valve components and the pipeline may become very hot or cold. Risk of burn injuries.

- Allow components and pipelines to cool down or warm up to the ambient temperature.
- Wear protective clothing and safety gloves.

⚠ WARNING

Crush hazard arising from actuator and plug stem moving in pneumatic control valves with Type 3271 or Type 3277 Actuator.

- Do not insert hands or finger into the yoke while the air supply is connected to the actuator.
- Before working on the control valve, disconnect and lock the pneumatic air supply as well as the control signal.
- Do not impede the movement of the actuator and plug stem by inserting objects into the yoke.
- Before unblocking the actuator and plug stem after they have become blocked (e.g. due to seizing up after remaining in the same position for a long time), release any stored energy in the actuator

(e.g. spring compression). See associated actuator documentation.

⚠ WARNING

Risk of personal injury due to residual process medium in the valve.

While working on the valve, residual medium can flow out of the valve and, depending on its properties, cause personal injury, e.g. (chemical) burns.

- Wear protective clothing, safety gloves, respiratory protection and eye protection.

⚠ WARNING

Risk of personal injury due to preloaded springs.

Actuators with preloaded springs are under tension. They can be identified by the long bolts protruding from the bottom of the actuator.

- Before starting any work on the actuator, relieve the compression from the preloaded springs.

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

- The control valve is put out of operation (see section 10).

11.1 Removing the valve from the pipeline

1. Support the control valve to hold it in place when separated from the pipeline.

Repairs

2. Cut the pipeline in front of the weld seam.
3. Remove the valve from the pipeline (see section 4.3).

11.2 Removing the actuator from the valve

See associated actuator documentation.

12 Repairs

If the valve does not function properly according to how it was originally sized or does not function at all, it is defective and must be repaired or exchanged.

NOTICE

Risk of valve damage 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 > Service & Support > After-sales Service.

2. Send an e-mail
 - ▶ retouren@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 > Service & Support > After-sales Service.

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.
-

Note

Further information on returned devices and how they are handled can be found at

- ▶ www.samsongroup.com > Service & Support > After-sales Service.
-

13 Disposal

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

14 Annex

14.1 After-sales service

Contact SAMSON's 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.

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) or in all SAMSON product catalogs.

Required specifications

Please submit the following details:

- Order number and position number in the order
- Type, model number, valve size and valve version
- Pressure and temperature of the process medium
- Flow rate in m³/h
- Bench range of the actuator (e.g. 0.2 to 1 bar)
- Is a strainer installed?
- Installation drawing

14.2 Certificates

These declarations are included on the next pages:

- Declaration of conformity in compliance with Pressure Equipment Directive 2014/68/EU on pages 57 to 58
- Declaration of conformity in compliance with Machinery Directive 2006/42/EC for Types 3349-1 and 3349-7 Control Valves on page 59

Other optional certificates are available on request.



DECLARATION UE DE CONFORMITE EU DECLARATION OF CONFORMITY EU-KONFORMITÄTSERKLÄRUNG

1/2

Module A / Modul A

DC014
2020-02

Par la présente, SAMSON REGULATION SAS déclare sous sa seule responsabilité pour les produits suivants :
For the following products, SAMSON REGULATION SAS hereby declares under its sole responsibility:
SAMSON REGULATION SAS erklärt in alleiniger Verantwortung für folgende Produkte:

Appareils / Devices / Geräte	Type / Typ	Exécution / Version / Ausführung
Vanne de décharge / back pressure reducing valve / Überströmventil	2371-0	DIN & ANSI - corps en acier forgé / body of forged steel / Gehäuse Schmiedestahl DN 32 – 100 P _{max} T = 20°C 10 bar NPS 1 1/4 – 4 P _{max} T = 70°F 150 psi Tous fluides / all fluids / alle Fluide
Détendeur alimentaire / pressure reducing valve / Druckminderventil	2371-1	
Vanne de régulation passage droit / globe valve / Durchgangsventil	3241	DIN - corps en fonte grise / body of cast iron / Gehäuse Grauguss: GJL-250 DN 65 – 150 PN16 Fluides / fluids / Fluide G2, L1, L2 ¹⁾
	3241	DIN - corps en fonte sphéroïdale / body of spheroidal graphite iron / Gehäuse Sphäroguss : GJS-400-18-LT DN 50 PN25 Fluides / fluids / Fluide G2, L1, L2 ¹⁾
	3241	ANSI - corps en fonte grise / body of cast iron / Gehäuse Grauguss: A126 B CI 250 NPS 1 1/2 - 3 ; CI 125 NPS 2 1/2 - 6 Fluides / fluids / Fluide G2, L1, L2 ¹⁾
Vanne de régulation 3 voies / 3-way Valve / Drei-Wege-Stellventil	3244	DIN - corps en fonte grise / body of cast iron / Gehäuse Grauguss: GJL-250 DN 65 – 150 PN16 Fluides / fluids / Fluide G2, L1, L2 ¹⁾
	3244	DIN - corps en fonte sphéroïdale / body of spheroidal graphite iron / Gehäuse Sphäroguss : GJS-400-18-LT DN 50 PN25 Fluides / fluids / Fluide G2, L1, L2 ¹⁾
Vanne aseptique / Aseptic valve / Aseptisches Ventil	3249	DIN & ANSI - corps en acier forgé / body of forged steel / Gehäuse Schmiedestahl DN 32 – 100 P _{max} T = 20°C 10 bar NPS 1 1/4 – 4 P _{max} T = 70°F 150 psi Tous fluides / all fluids / alle Fluide
Vanne de régulation passage droit / globe valve / Durchgangsventil	3321	DIN - corps en fonte grise / body of cast iron / Gehäuse Grauguss: GJL-250 DN 65 – 100 PN16 Fluides / fluids / Fluide G2, L1, L2 ¹⁾
	3321	ANSI - corps en fonte grise / body of cast iron / Gehäuse Grauguss: A126 B CI 125 NPS 2 1/2 - 4 Fluides / fluids / Fluide G2, L1, L2 ¹⁾
Vanne de régulation 3 voies / 3-way Valve / Drei-Wege-Stellventil	3323	DIN - corps en fonte grise / body of cast iron / Gehäuse Grauguss: GJL-250 DN 65 – 100 PN16 Fluides / fluids / Fluide G2, L1, L2 ¹⁾
	3323	ANSI - corps en fonte grise / body of cast iron / Gehäuse Grauguss: A126 B CI 125 NPS 2 1/2 - 4 Fluides / fluids / Fluide G2, L1, L2 ¹⁾
Vanne à membrane / Diaphragm valve / Membran-Ventil	3345	DIN & ANSI corps en fonte sphéroïdale, aciers moulé & forgé / body of spheroidal graphite iron, cast & forged steel / Gehäuse Sphäroguss, Gussstahl & Schmiedestahl DN 32 – 100 NPS 1 1/2 – 4 Tous fluides / all fluids / alle Fluide
Vanne alimentaire / Sanitary valve / Hygienisches Ventil	3347	DIN & ANSI corps en aciers moulé & forgé / body of cast & forged steel / Gehäuse Gussstahl & Schmiedestahl DN 65 – 125 P _{max} T = 20°C 16 bar NPS 2 1/2 – 5 P _{max} T = 70°F 240 psi Fluides / fluids / Fluide G2, L1, L2 ¹⁾
Vanne aseptique / Aseptic valve / Aseptisches Ventil	3349	DIN & ANSI - corps en acier forgé / body of forged steel / Gehäuse Schmiedestahl DN 32 – 100 P _{max} T = 20°C 10 bar NPS 1 1/4 – 4 P _{max} T = 70°F 150 psi Tous fluides / all fluids / alle Fluide
Vanne Tout ou Rien / On-Off Valve / Auf-Zu Ventil	3351	DIN - corps en fonte grise / body of cast iron / Gehäuse Grauguss: GJL-250 DN 65 – 150 PN16 Fluides / fluids / Fluide G2, L1, L2 ¹⁾
	3351	DIN - corps en fonte sphéroïdale / body of spheroidal graphite iron / Gehäuse Sphäroguss : GJS-400-18-LT DN 50 PN25 Fluides / fluids / Fluide G2, L1, L2 ¹⁾
	3351	ANSI - corps en fonte grise / body of cast iron / Gehäuse Grauguss: A126 B CI 250 NPS 1 1/2 - 3 ; CI 125 NPS 2 1/2 - 6 Fluides / fluids / Fluide G2, L1, L2 ¹⁾
Bride de mesure / Measure flange / Messflansch	5090	DIN & ANSI - corps en acier forgé / body of forged steel / Gehäuse Schmiedestahl DN 40 – 500 NPS 1.5 – 20
Tube de mesure / Measure tube / Messrohr	5091	DIN & ANSI - corps en acier forgé / body of forged steel / Gehäuse Schmiedestahl DN 40 – 500 NPS 1.5 – 20

¹⁾ Gas selon l'article 4 § 1.c) i) / Gases Acc. to article 4 paragraphs 1.c) i) / Gases nach Artikel 4 Abs. 1 Pkt. c) i)
Liquide selon l'article 4 § 1.c) ii) / Liquids Acc. to article 4 paragraphs 1.c) ii) / Flüssigkeiten nach Artikel 4 Abs. 1 Pkt. c) ii)

Agrément en cours d'examen par Bureau Veritas Exploitation / Approval being examined by Bureau Veritas Exploitation / Genehmigung wird von Bureau Veritas Exploitation geprüft.



**DECLARATION UE DE CONFORMITE
EU DECLARATION OF CONFORMITY
EU-KONFORMITÄTSERKLÄRUNG**

2/2

Module A / Modul A

**DC014
2020-02**

la conformité avec le règlement suivant : / the conformity with the following requirement: / die Konformität mit nachfolgender Anforderung:

<p>La Directive du Parlement Européen et du Conseil d'harmonisation des lois des Etats Membres concernant la mise à disposition sur le marché d'équipements sous pression / Directive of the European Parliament and of the Council on the Harmonization of the laws of the Member States relating of the making available on the market of pressure equipment / Richtlinie des Europäischen Parlaments und des Rates zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die Bereitstellung von Druckgeräten auf dem Markt</p>	<p>2014/68/UE 2014/68/EU</p>	<p>Du / of / vom 15.05.2014</p>
<p>Procédure d'évaluation de la conformité appliquée pour les fluides selon l'Article 4 § 1 Applied conformity assessment procedure for fluids according to Article 4 (1) Angewandtes Konformitätsbewertungsverfahren für Fluide nach Art. 4 Abs.1</p>		<p>Module A / Modul A</p>

Normes techniques appliquées / Technical standards applied / Angewandte technische Spezifikation :
DIN EN 12516-2, DIN EN 12516-3, ASME B16.34, DIN-EN 60534-4, DIN-EN 1092-1

Fabricant / manufacturer / Hersteller : Samson Régulation SAS, 1, rue Jean Corona, FR-69120 VAULX-EN-VELIN

Vaulx-en-Velin, le 07/02/20

Bruno Soulas
Directeur Administratif / Head of Administration

Joséphine Signoles-Fontaine
Responsable QSE / QSE Manager



EU DECLARATION OF CONFORMITY

DC033
2020-07

Declaration of Conformity of Final Machinery

in accordance with Annex II, section 1. A. of the Directive 2006/42/EC

For the following products:

Pneumatic Control & Aseptic Angle Valve Type 3349-1/-7 consisting of the type 3349 Valve and Type 3271/Type 3277 Pneumatic Actuator or Type 3349 with Type 3379 Pneumatic Actuator

We hereby declare that the machinery mentioned above complies with all applicable requirements stipulated in Machinery Directive 2006/42/EC.

For product descriptions of the valve and actuator, refer to:

- Type 3349 Valve: Mounting and Operating Instructions EB 8048-2/-3
- Types 3271 and 3277 Actuators: Mounting and Operating Instructions EB 8310-X
- Type 3379 Actuator: Mounting and Operating Instructions EB 8315

Valve accessories (e.g. positioners, limit switches, solenoid valves, lock-up valves, supply pressure regulators, volume boosters and quick exhaust valves) are classified as machinery components in this declaration of conformity and do not fall within the scope of the Machinery Directive as specified in § 35 and § 46 of the Guide to Application of the Machinery Directive 2006/42/EC issued by the European Commission. In the SAMSON Manual H 02 titled "Appropriate Machinery Components for SAMSON Pneumatic Control Valves with a Declaration of Conformity of Final Machinery", SAMSON defines the specifications and properties of appropriate machinery components that can be mounted onto the above specified final machinery.

Referenced technical standards and/or specifications:

- VCI, VDMA, VGB: "Leitfaden Maschinenrichtlinie (2006/42/EG) — Bedeutung für Armaturen, Mai 2018" [German only]
- VCI, VDMA, VGB: "Zusatzdokument zum „Leitfaden Maschinenrichtlinie (2006/42/EG) — Bedeutung für Armaturen vom Mai 2018" [German only], based on DIN EN ISO 12100:201 1-03

Comment:

Information on residual risks of the machinery can be found in the mounting and operating instructions of the valve and actuator as well as in the referenced documents listed in the mounting and operating instructions.

Persons authorized to compile the technical file:

SAMSON REGULATION SAS – 1 rue Jean Corona – FR-69120 VAULX-EN-VELIN
Vaulx-en-Velin, 30 July 2020

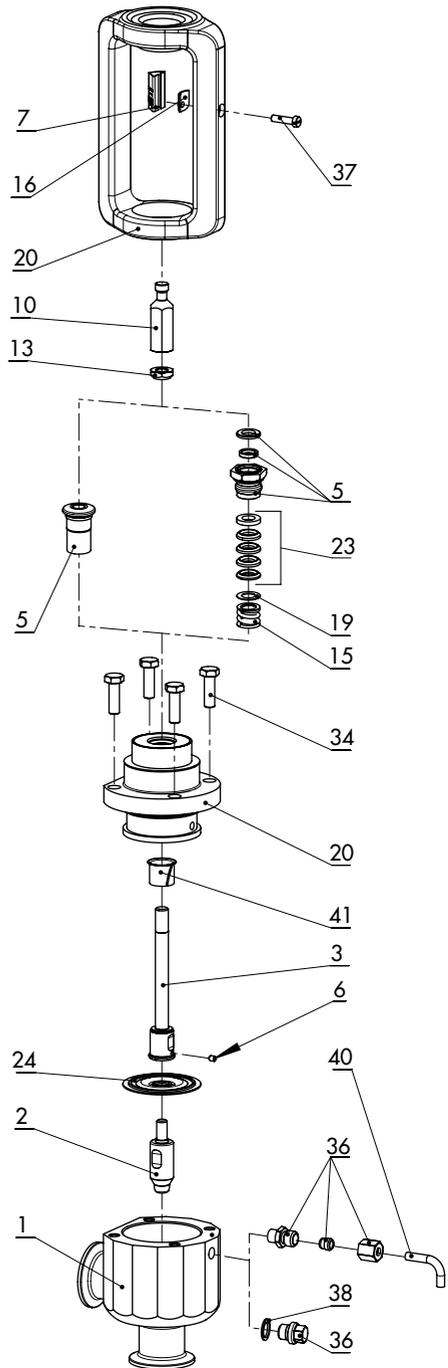
Michael Lachenal-Chevallet
R&D Manager

Joséphine Signoles-Fontaine
QSE Manager

14.3 Spare parts

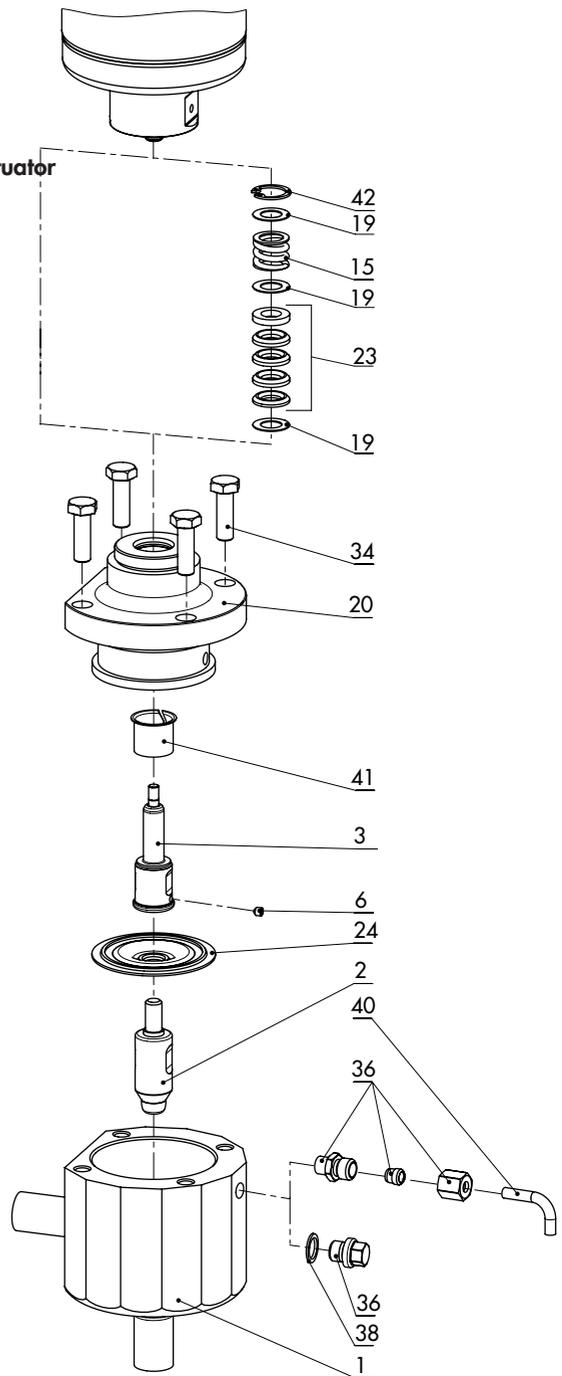
Standard version for Type 3271 and Type 3277 Actuators

- 1 Valve body
- 2 Plug
- 3 Plug stem
- 5 Threaded bushing or stem seal
- 6 Threaded pin
- 7 Travel indicator scale
- 10 Stem connector nut
- 13 Lock nut
- 15 Spring
- 16 Hanger
- 19 Washer
- 20 Flange (assembly)
- 23 V-ring packing
- 24 USP-VI diaphragm
- 34 Hex screw
- 36 Screw plug (test connection) or nipple (pipe)
- 37 Cap screw
- 38 Gasket
- 40 Pipe (assembly)
- 41 Bearing
- 42 Snap ring



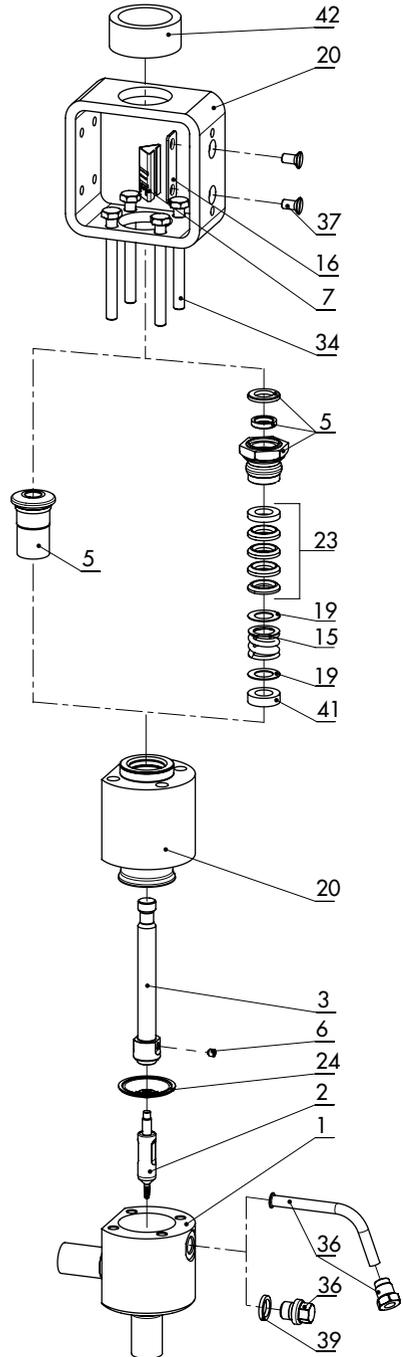
Standard version for Type 3379 Actuator

- 1 Valve body
- 2 Plug
- 3 Plug stem
- 6 Threaded pin
- 10 Stem connector nut
- 13 Lock nut
- 15 Spring
- 19 Washer
- 20 Valve bonnet
- 23 V-ring packing
- 24 USP-VI diaphragm
- 34 Hex screw
- 36 Screw plug (test connection) or nipple (pipe)
- 38 Gasket
- 40 Pipe (assembly)
- 41 Bearing
- 42 Snap ring



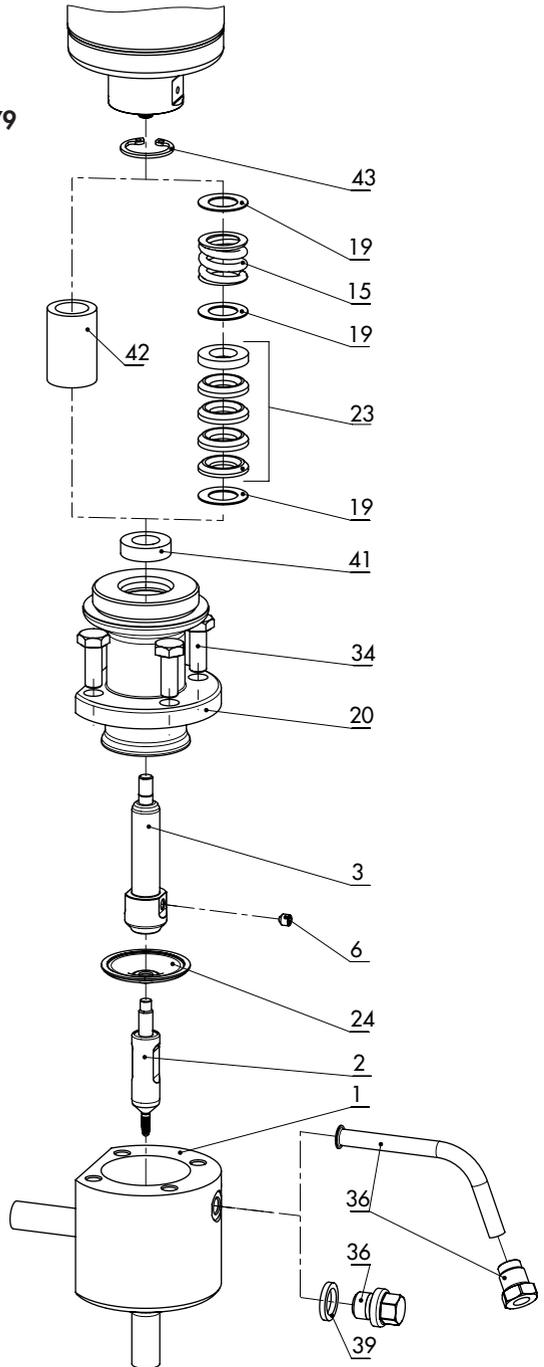
**Micro-flow valve version for Type 3271
and Type 3277 Actuators**

- 1 Valve body
- 2 Plug
- 3 Plug stem
- 5 Threaded bushing or stem seal
- 6 Threaded pin
- 7 Travel indicator scale
- 15 Spring
- 16 Plate
- 19 Washer
- 20 Flange (assembly)
- 23 V-ring packing
- 24 USP-VI diaphragm
- 34 Hex screw
- 36 Screw plug (test connection) or nipple (pipe)
- 37 Countersunk screw
- 39 Washer
- 41 Bearing
- 42 Spacer



**Micro-flow valve version for Type 3379
Actuator**

- 1 Valve body
- 2 Plug
- 3 Plug stem
- 6 Threaded pin
- 15 Spring
- 19 Washer
- 20 Valve bonnet
- 23 V-ring packing
- 24 USP-VI diaphragm
- 34 Hex screw
- 36 Screw plug (test connection) or nipple (pipe)
- 39 Washer
- 41 Bearing
- 42 Spacer
- 43 Snap ring





SAMSON AKTIENGESELLSCHAFT
Weismüllerstraße 3 · 60314 Frankfurt am Main, Germany
Phone: +49 69 4009-0 · Fax: +49 69 4009-1507
samson@samsongroup.com · www.samsongroup.com