MOUNTING AND OPERATING INSTRUCTIONS

EB 8111/8112 EN

Translation of original instructions



Type 3321 Valve
DIN and ANSI versions

CE EAC Ex certified

Edition April 2026

Note on these mounting and operating instructions

These mounting and operating instructions (EB) assist you in mounting and operating the device safely. The instructions are binding for handling SAMSON devices. The images shown in this document 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 additional questions not related to the contents of this document, contact SAMSON's After-sales Service (aftersalesservice@samsongroup.com).

Documents relating to the device, such as the mounting and operating instructions, are available on our website:
▶ https://www.samsongroup.com/en/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 7
1.2 Notes on possible personal injury 7
1.3 Notes on possible property damage 9
1.4 Warnings on the device 10

2 Markings on the device 11
2.1 Valve nameplate 11
2.2 Actuator nameplate 12
2.3 Material numbers 12

3 Design and principle of operation 13
3.1 Fail-safe positions 13
3.2 Variants 14
3.3 Additional fittings 14
3.4 Valve accessories 14
3.5 Technical data 14

4 Shipment and on-site transport 19
4.1 Accepting the delivered goods 19
4.2 Removing the packaging from the valve 19
4.3 Transporting and lifting the valve 19
4.3.1 Transporting the valve 20
4.3.2 Lifting the valve 20
4.4 Storing the valve 20

5 Installation 22
5.1 Installation conditions 22
5.2 Preparation for installation 23
5.3 Mounting the device 24
5.4 Mounting the actuator onto the valve 24
5.5 Installing the valve into the pipeline 26
5.6 Testing the installed valve 27
5.6.1 Leak test 28
5.6.2 Travel motion 28
5.6.3 Fail-safe position 28
5.6.4 Pressure test 28

6 Start-up 29

7 Operation 30

8 Malfunctions 31
8.1 Troubleshooting 31
8.2 Emergency action 32

9 Servicing 33
9.1 Periodic testing 35
9.2 Service work preparations 36
9.3 Installing the valve after service work 36
9.4 Service work 36
9.4.1 Replacing the body gasket 37
9.4.2 Replacing the packing 38
9.4.3 Replacing the seat and plug 39
9.5 Ordering spare parts and operating supplies 39

10 Decommissioning 41

11 Removal 43
11.1 Removing the valve from the pipeline 43
11.2 Removing the actuator from the valve 43

12 Repairs 44
12.1 Returning devices to SAMSON 44

13 Disposal 45

14 Certificates 46

15 Appendix 62
15.1 Tightening torques, lubricants and tools 62
15.2 Spare parts 62
15.3 After-sales service 65

1 Safety instructions and measures

Intended use

The SAMSON Type 3321 Globe Valve in combination with an actuator (e.g. Type 3372 Electropneumatic Actuator, Type 3371 Pneumatic Actuator, Type 5827 Electric Actuator or Type 3374 Electric Actuator) is designed to regulate the flow rate, pressure or temperature of liquids, gases or vapors.

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 control 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.

Explosion-protected versions of this device are to be operated only by personnel who has undergone special training or instructions or who is authorized to work on explosion-protected devices in hazardous areas.

Work on electrical installations is to be performed only by certified electricians and in compliance with all safety requirements.

Personal protective equipment

SAMSON recommends checking the hazards posed by the process medium being used (e.g. ▶ GESTIS 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, e.g. when working at height
- Safety footwear, if applicable ESD (electrostatic discharge) footwear

⇨ Check with the plant operator for details on further protective equipment.

Revisions and other modifications

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

Safety features

The fail-safe position of the control valve upon air supply or control signal failure depends on the actuator used (see associated actuator documentation). When the valve is combined with one of the following SAMSON pneumatic actuators, the control valve moves to a certain fail-safe position upon supply air or control signal failure (see Chapter 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.

SAMSON pneumatic actuators with fail-safe action:

- Type 3371

SAMSON electropneumatic actuator with fail-safe action:

- Type 3372

SAMSON electric actuators with fail-safe action:

– Type 3374-2x/-3x

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 standard operating procedures 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 device fulfills the requirements of the following directives for the European Economic Area (EEA):

– Machinery Directive 2006/42/EC

– Pressure Equipment Directive 2014/68/EU (depending on version, see certificate)

Devices with an EAC marking fulfill the requirements of the following regulations for the Eurasian Economic Union (EAEU):

– TR CU 010/2011

– TR CU 012/2011 (depending on version, see certificate)

– TR CU 032/2013 (depending on version, see certificate)

The declarations of conformity are included in Chapter 14.

Non-electric valve versions whose bodies are not lined with an insulating material coating do not have their own potential ignition source according to the risk assessment stipulated in Clause 5.2 of DIN EN ISO 80079-36, even in the rare incident of an operating fault. Therefore, such valve versions do not fall within the scope of ATEX Directive 2014/34/EU.

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

Referenced documents

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

– Mounting and operating instructions for mounted valve accessories (positioner, solenoid valve etc.)

– Mounting and operating instructions for the mounted actuator, for example:

  – ▶ EB 8313-3 for Type 3372 Electropneumatic Actuator (with Type 3725 Positioner)

  – ▶ EB 8317 for Type 3371 Pneumatic Actuator

  – ▶ EB 8331-3 for Type 3374 Electric Actuator (three-step version)

  – ▶ EB 8331-4 for Type 3374 Electric Actuator (version with positioner)

  - ▶ EB 5827-1 for Type 5827 Electric Actuator (version with three-step signal)
  - ▶ EB 5827-2 for Type 5827 Electric Actuator (version with positioner)
- ▶ AB 0100 for tools, tightening torques and lubricants
- Manual ▶ H 02: Appropriate Machinery Components for SAMSON Pneumatic Control Valves with a Declaration of Conformity of Final Machinery
- If a device contains a substance listed as a substance of very high concern (SVHC) on the candidate list of the REACH regulation, the document "Additional Information on Your Inquiry/Order" is added to the SAMSON order documents. This document includes the SCIP number assigned to the devices concerned. This number can be entered into the database on the European Chemicals Agency (ECHA) website (▶ https://www.echa.europa.eu/scip-database) to find out more information on the SVHC contained in the device.
  Further information on material compliance at SAMSON is available at ▶ www.samsongroup.com > About SAMSON > Environment, Social & Governance > Material Compliance

1.1 Notes on possible severe personal injury

⚠ DANGER

Risk of bursting in pressure equipment.

Control valves and pipelines are pressure equipment. Excessive pressurization or improper opening can lead to valve components bursting.

⇨ Observe the maximum permissible pressure for valve and plant.

⇨ Before starting any work on pressure-bearing or pressure-retaining parts belonging to the valve assembly, depressurize all plant sections affected as well as the valve.

⇨ Drain the process medium from the plant sections affected as well as from the valve.

⚠ DANGER

Risk of fatal injury due to electric shock from electrically powered components.

⇨ While working on electric devices or before opening the device, disconnect the supply voltage and protect it against unintentional reconnection.

⇨ Do not remove any covers to perform adjustment work on live parts.

⇨ Only use protective equipment that can be protected against unintentional reconnection of the power supply.

⇨ SAMSON electric actuators are protected against spray water. Avoid jets of water.

⇨ Observe all other safety instructions in the associated documentation of the electric device (e.g. electric actuator).

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 during operation and cause burn injuries.

⇨ Follow the standard operating procedures provided by the plant operator.

  In the event of a potential risk:

  ⇨ 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.

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 elements. Both can damage hearing.

⇨ Follow the standard operating procedures provided by the plant operator.

In the event of a potential risk:

⇨ Wear hearing protection when working near the valve.

⚠ WARNING

Risk of personal injury due to exhaust air being vented or compressed air escaping from pneumatically operated components.

When the valve is operated with a pneumatic actuator or pneumatic valve accessories, exhaust air is vented from the actuator, for example, while the valve is operating and 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 mufflers and vent plugs.

⇨ Wear eye protection when working in close proximity to pneumatic fittings and in the danger zone of the vent openings.

⚠ WARNING

Crush hazard arising from moving parts.

The control valve contains 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 or voltage supply is connected to the actuator.

⇨ Before working on the pneumatic control valve, disconnect and lock the pneumatic air supply as well as the control signal.

⇨ Before working on the electric control valve, disconnect the supply voltage and protect it against unintentional reconnection.

⇨ 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 preloaded springs in pneumatic actuators.

Valves in combination with pneumatic actuators with preloaded springs are under tension. These control valves with SAMSON pneumatic linear actuators (e.g. Type 3271/3277 or Type 3371) can be identified by the long bolts protruding from the bottom of the actuator.

⇨ Before starting any work on the actuator, which requires the actuator to be opened, or when the actuator stem has become blocked, 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.

⇨ Follow the standard operating procedures provided by the plant operator.

In the event of a potential risk:

⇨ If possible, drain the process medium from the plant sections affected and from the valve.

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

⚠ WARNING

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

Over time, markings, labels and nameplates on the control 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.

⚠ WARNING

Exposure to hazardous substances poses a serious risk to health.

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

⇨ Make sure that an MSDS is available for any hazardous substance used. If necessary, contact the manufacturer to obtain an MSDS.

⇨ Inform yourself about the hazardous substances and their correct handling.

1.3 Notes on possible property damage

NOTICE

Risk of 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.

NOTICE

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.

NOTICE

Risk of damage to the electric control valve due to the supply voltage exceeding the permissible tolerances.

Electric control valves with ≥50 V supply voltage are designed for use according to regulations for low-voltage installations. The following applies to all electric control valves:

⇨ Observe the permissible tolerances of the supply voltage. See associated actuator documentation.

NOTICE

Risk of leakage and valve damage due to over- or under-torquing.

Observe the specified torques when tightening control valve components. Over-torquing leads to parts wearing out more quickly. Under-torquing may cause leakage.

⇨ Observe the tightening torques specified in ▶ 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).

NOTICE

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).

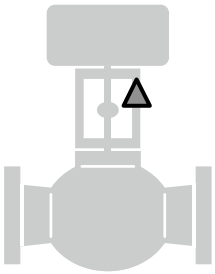
NOTICE

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

⇨ If necessary , keep the valve and the tools used free from solvents and grease.

⇨ Make sure that only suitable lubricants are used.

1.4 Warnings on the device

Warning symbols	Location on the device
	
Meaning of the warning	
Warning against moving parts There is a risk of injury to hands or fingers due to the stroking movement of the actuator and plug stem if they are inserted into the yoke while the air supply is connected to the actuator.	

2 Markings on the device

2.1 Valve nameplate

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

In nominal sizes DN 15 to 50 or NPS ½ to 2, the valve nameplate is affixed to the valve on the body flange. The nameplate is affixed to the top of the bonnet in nominal sizes DN 65 or NPS 2½ and larger.

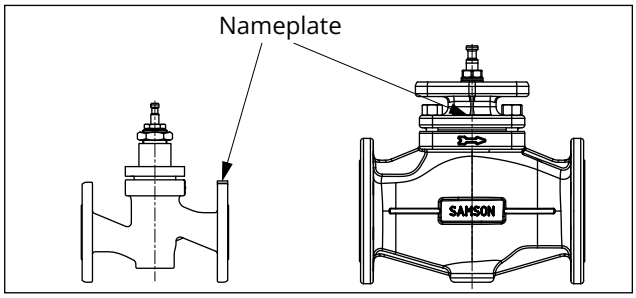


Fig. 1: *Left: DN 15 to 50 or NPS ½ to 2 · Nameplate on body flange*
Right: DN 65 or NPS 2½ and larger · Nameplate on top of the bonnet

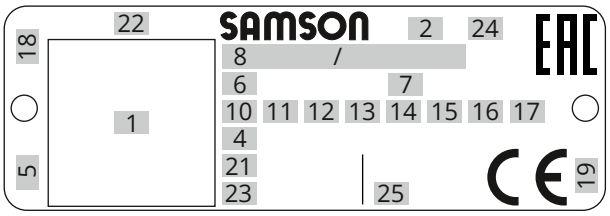


Fig. 2: *Inscriptions on the valve nameplate*

Item	Inscription meaning
1	Identification code (scannable)
2	Type designation
4	Material
5	Month and year of manufacture
6	Nominal size: DIN: **DN...** · ANSI: **NPS...** · JIS: **DN**...
7	Pressure rating: DIN: **PN...** · ANSI: **CL...** · JIS: **...K**
8	Order number/item
10	Flow coefficient: DIN: **KV** · ANSI/JIS: **CV**
11	Characteristic: **%**: Equal percentage **LIN**: Linear **mod-lin**: Modified linear
	NO/NC: On/off service
12	Seat-plug seal: **ME**: Metal **HA**: Carbide metal **ST**: Metal base material with Stellite® facing **KE**: Ceramic **PT**: PTFE soft seal **PK**: PEEK soft seal
13	Seat code (trim material): On request
14	Pressure balancing: **D**: DIN · **B**: ANSI/JIS
	Version: **M**: Mixing valve **V**: Diverting valve
15	Noise reduction: **1**: Flow divider (ST) 1 **2**: ST 2 **3**: ST 3 **1/PSA**: ST 1 standard and integrated in seat for PSA valve **AC-1/AC-2/AC-3/AC-5**: Anti-cavitation trim, versions 1 to 5 **LK**: Perforated plug **LK1/LK2/LK3**: Perforated plug with flow divider **ST 1 to 3** **MHC1**: Multi-Hole Cage **CC1**: Combi Cage **ZT1**: Zero Travel **LDB**: Low dB **CDST3/4/6**: 3-, 4- or 6-stage trim (cavitation dirty service trim)
16	PSA version: **PSA**
17	Cage/seat style: **RT**: Seat with retainer **CG**: Guided cage **TH**: Screwed-in seat **SF**: Suspended cage, flanged seat
18	Country of origin
19	ID of the notified body (EU), for example: – **0062** for Bureau Veritas Services SAS, 4 place des Saisons, 92400 Courbevoie – France

Item	Inscription meaning
21	**PED**: Pressure Equipment Directive
	G1/G2: Gases and vapors Fluid group 1 = Hazardous Fluid group 2 = Other
	L1: Liquids Fluid group 1 = Hazardous Fluid group 2 = Other
	I/II/III: Category 1 to 3
22	Serial number
23	NE 53 (NAMUR Recommendation)
24	Actuator type: Item 2**/3374-XX** (only when type-tested according to DIN EN 14597 and only with Type 3374 Electric Actuator)
25	**TSmin/TSmax**: Permissible min./max. temperatures for the valve **.../... °C**

Note

Fig. 2 and the inscription table list all possible characteristics and options that may appear on a valve nameplate. Only the inscriptions relevant to the ordered Type 3321 Valve actually appear on the nameplate.

Tip

SAMSON recommends to include the device's serial number (item 22 on the nameplate) and/or its material number (as specified in the order confirmation) in the plant documentation for the associated tag number.

The serial number enables you to view the device's current technical data as configured by SAMSON. The material number enables you to view the device's technical data as configured by SAMSON upon delivery of the device. To view these data, go to our website at:

▶ *www.samsongroup.com > Products > Electronic nameplate*

For example, you can also use the associated information to order a new nameplate from our after-sales service, if required.

2.2 Actuator nameplate

See associated actuator documentation.

2.3 Material numbers

The seat and plug of the valves have an item number written on them. You can contact us stating this item number to find out which material is used. Additionally, a seat code is used to identify the trim material. This seat code is specified on the nameplate.

3 Design and principle of operation

The single-seated Type 3321 Globe Valve is preferably to be combined with the following SAMSON actuators:

- Type 3372 Electropneumatic Actuator
- Type 3371 Pneumatic Actuator
- Type 3374 Electric Actuator
- Type 5827 Electric Actuator

A seat and plug with plug stem are installed in the valve. The plug stem is connected to the actuator stem by the stem connector clamps and is sealed by a packing.

The process medium flows through the valve in the direction indicated by the arrow in the flow-to-open direction. The plug position determines the cross-sectional area between the seat and plug.

The position of the plug is changed by the control signal acting on the actuator.

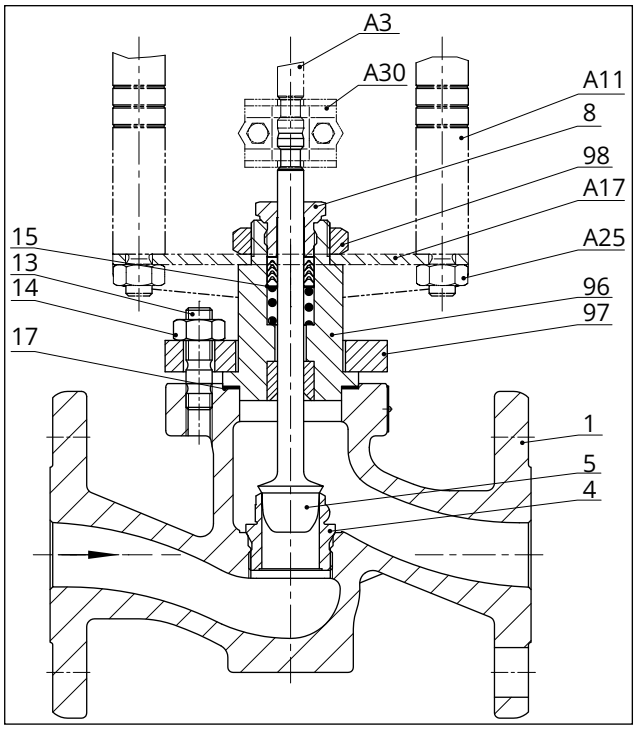


Fig. 3: *Type 3321 Valve, DN 15 to 50/NPS ½ to 2; mounting using a crossbeam and central nut (form B)*

1	Body	96	Flange bonnet
2	Valve bonnet	97	Flange
4	Seat	98	Central nut
5	Plug (with plug stem)	A3	Actuator stem
8	Threaded bushing (packing nut)	A11	Rod
		A17	Crossbeam
13	Screw		
14	Body nut		
15	Packing	A25	Nut
17	Body gasket	A30	Stem connector

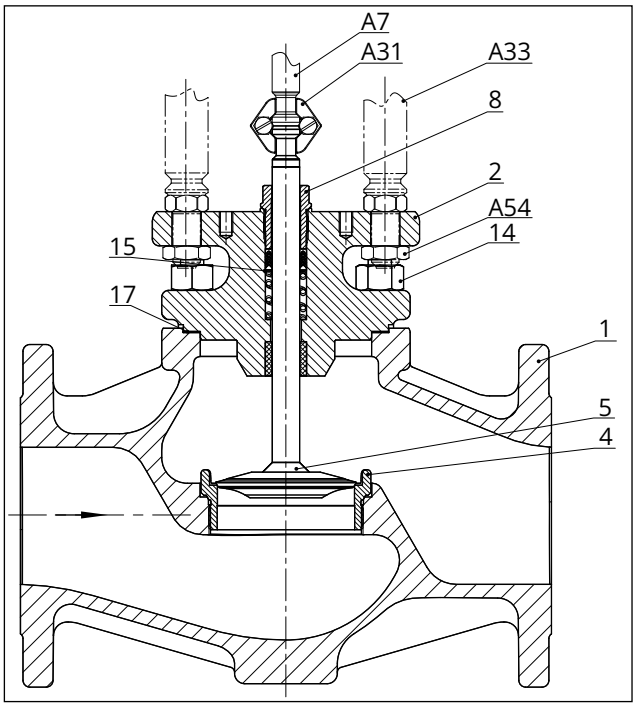


Fig. 4: *Type 3321 Valve, DN 65 to 100/NPS 2½ to 4; mounting using rods (form C)*

1	Body	15	Packing
2	Valve bonnet	17	Body gasket
4	Seat	A7	Actuator stem
5	Plug (with plug stem)	A31	Stem connector
8	Threaded bushing (packing nut)	A33	Rod
		A54	Nut
14	Body nut		

3.1 Fail-safe positions

The fail-safe position of the control valve upon air supply or control signal failure depends on the actuator used (see associated actuator documentation).

When the valve is combined with a pneumatic actuator with integrated springs or an electric actuator with fail-safe action, the control valve has two different fail-safe positions that become effective when the supply air or supply voltage fails:

- **Actuator stem extends (FA)**
  When the signal pressure is reduced or the air supply fails, the actuator stem moves downward and closes the valve.
- **Actuator stem retracts (FE)**
  When the signal pressure is reduced or the air supply fails, the actuator stem moves upward and opens the valve.

Tip

The direction of action of the electric and electropneumatic actuators is determined by the actuator version. The direction of action of the pneumatic actuators can be reversed, if required. Refer to the mounting and operating instructions of the pneumatic actuator.

3.2 Variants

With insulating section

The modular design allows an insulating section to be fitted to the standard valve version.

Actuators

In these instructions, the preferable combination with one of the following SAMSON actuators is described.

- Type 5827 Electric Actuator
- Type 3374 Electric Actuator
- Type 3372 Electropneumatic Actuator
- Type 3371 Pneumatic Actuator

3.3 Additional fittings

Strainer

SAMSON recommends installing a SAMSON strainer upstream of the valve. It prevents solid particles in the process medium from damaging the control valve.

Bypass and shut-off valves

SAMSON recommends installing a shut-off valve both upstream of the strainer and downstream of the control valve and installing a bypass line. The bypass ensures that the plant does not need to be shut down for service and repair work on the valve.

Insulation

Control valves can be insulated to reduce heat energy transfer.

If applicable, read the instructions in Chapter 5.

Safety guard

For operating conditions that require increased safety (e.g. in cases where the control 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.

Noise reduction

Trims with flow dividers can be used to reduce noise emission (▶ T 8081).

3.4 Valve accessories

See Information Sheet ▶ T 8350

3.5 Technical data

The nameplates on the valve and actuator provide information on the control valve version (see Chapter 2).

Note

More information on Type 3321 Valve is available in the following data sheets:

- *▶ T 8111 · DIN version*
- *▶ T 8112 · ANSI version*

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.

Table 1: *Technical data for Type 3321 · DIN version*

Material		Cast iron EN-GJL-250	Spheroidal graphite iron EN-GJS-400-18-LT	Cast steel 1.0619		Stainless steel 1.4408	
Connection	Flanges	According to DIN EN 1092-2	According to DIN EN 1092-2	According to DIN EN 1092-1		According to DIN EN 1092-1	
Nominal size	DN	15 to 100	15 to 100	15 to 50	65 to 100	15 to 50	65 to 100
Pressure rating	PN	16	25	40	16 and 40	40	16
Seat-plug seal		Metal or soft seal					
Characteristic		Inherent characteristic according to ▶ T 8000-3					
Rangeability		50:1 for DN 15 to 50 30:1 for DN 65 to 100					
Conformity		CE EAC					
Temperature range		-10 to +220 °C					
With insulating section[1)]		-10 to +300 °C					
Leakage class according to DIN EN 60534-4		Metal seal: IV Soft seal: VI					

1) Not in stainless steel with DN 65 to 100

Table 2: *Technical data for Type 3321 · ANSI version*

Material		A126 B	A216 WCC · A351 CF8M
Nominal size	NPS	½ · ¾ · 1 · 1½ · 2 · 2½ · 3 · 4	
Pressure rating	Class	Class 125	Class 150 or Class 300
Type of end connections	Flanges	ANSI flat face (FF)	Raised face (RF) · Ra = 3.2 to 6.3 µm
Seat-plug seal		Metal or soft seal	
Characteristic		Inherent characteristic according to ▶ T 8000-3	
Rangeability		50:1 for NPS ½ to 2 · 30:1 for NPS 2½ to 4	
Conformity		CE EAC	
Temperature range		14 to 430 °F (-10 to +220 °C)	
With insulating section[1)]		14 to 572 °F (-10 to +300 °C)	
Leakage class according to ANSI FCI 70-2		Metal seal: IV Soft seal: VI	

1) Not in stainless steel with NPS 2½ to 4

Table 3: *Materials for Type 3321 · DIN version*

Valve body		Cast iron EN-GJL-250	Spheroidal graphite iron EN-GJS-400-18-LT	Cast steel 1.0619	Stainless steel 1.4408
Valve bonnet		Up to DN 50: 1.0460 DN 65 and larger: EN-GJL-250	Up to DN 50: 1.0460 DN 65 and larger: EN-GJL-250	Up to DN 50: 1.0460 DN 65 and larger: 1.0619	Up to DN 50: 1.4404 DN 65 and larger: 1.4408
Valve flange[1]		1.0460			
Seat and plug	Seat	DN 15 to 50: 1.4104 DN 65 and larger: 1.4006			DN 15 to 50: 1.4401 · 1.4104[2] DN 65 and larger: in the valve body
	Plug	1.4401 · 1.4104[2]			
	Seal for soft-seated plug	PTFE			
Guide bushing		1.4104			1.4404
Packing		V-ring packing: PTFE with carbon; spring: 1.4310			
Body gasket		Graphite on metal core			

1) No contact with process medium; only up to DN 50. For DN 65 and larger: one-pieced (see valve bonnet for material)

2) Material double stamping

Table 4: *Materials for Type 3321 · ANSI version*

Valve body		A126 B	Cast steel A216 WCC	Cast stainless steel A351 CF8M
Valve bonnet		Up to NPS 2: A105 NPS 2½ and larger: A216 B	Up to NPS 2: A105 NPS 2½ and larger: A216 WCC	Up to NPS 2: A182 F316 NPS 2½ and larger: CF8M
Valve flange[1]		A105		
Seat and plug	Seat	NPS ½ to 2: A582 430F NPS 2½ and larger: A276 410T		NPS ½ to 2: CF3M/F316/316L/316/316L NPS 2½ and larger: in the valve body
	Plug	A479 316/A479 316L		
	Seal for soft-seated plug	PTFE with glass fiber		
Guide bushing		A582 430F		A182 F316
Packing		PTFE with carbon V-ring packing		
Body gasket		Graphite on metal core		

1) No contact with process medium; only up to NPS 2. For NPS 2½ and larger: one-pieced (see valve bonnet for material)

Dimensions and weights

Table 5: *Dimensions for Type 3321 Valve · DIN version*

Valve	DN	15	20	25	32	40	50	65	80	100
With standard bonnet										
Length L	mm	130	150	160	180	200	230	290	310	350
Height H1	mm	110			115			178		201
Height H2	mm	40			72			98		118
With insulating section										
Height H4	mm	261			265			325		325

Table 6: *Dimensions for Type 3321 Valve · ANSI version*

Valve	NPS	½	¾	1	1½	2	2½	3	4
	DN	15	20	25	40	50	65	80	100
Height H1	in	4.3			4.5		7.0		7.9
	mm	110			115		178		201
Height H2	in	1.6			2.8		3.9		4.4
	mm	40			72		98		113
With standard bonnet									
Class 150									
Length L	in	7.25	7.25	7.25	8.75	10	10.87	11.75	13.87
	mm	184	184	184	222	254	276	298	352
Class 300									
Length L	in	7.5	7.62	7.75	9.25	10.5	11.5	12.5	14.5
	mm	191	194	197	235	267	292	318	368
With insulating section									
Height H4	in	10.3			10.4		12.8		12.8
	mm	261			265		325		325

Table 7: *Weights[1] for Type 3321 Valve · DIN version*

Valve	DN	15	20	25	32	40	50	65	80	100
With standard bonnet										
Weight, approx.	kg	5	6	7	11	12	15	24	30	42
With insulating section										
Weight, approx.	kg	8	9	10	17	18	21	32	38	60

1) The weights specified apply to a specific standard device configuration. Weights of other valve configurations may differ depending on the version (material, trim etc.).

Table 8: *Weights[1] for Type 3321 Valve · ANSI version*

Valve	DN	15	20	25	40	50	65	80	100
	NPS	½	¾	1	1½	2	2½	3	4
With standard bonnet									
Weight, approx.	kg	6	7	8	12	16	26	32	44
	lbs	14	16	18	27	36	58	71	97
With insulating section									
Weight, approx.	kg	9	10	11	18	22	34	40	62
	lbs	19.8	22.1	24.3	39.7	48.5	75	88.2	136.7

1) The weights specified apply to a specific standard device configuration. Weights of other valve configurations may differ depending on the version (material, trim etc.).

Dimensional drawings

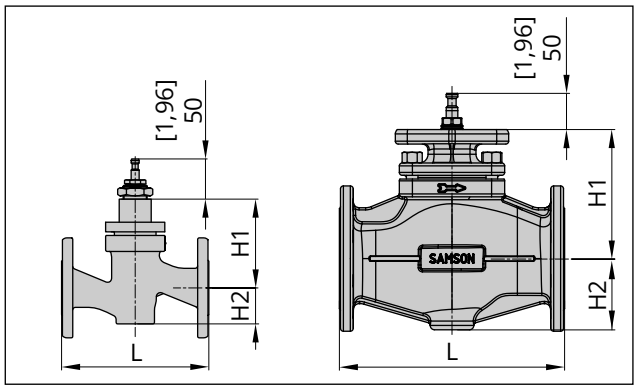


Fig. 5: *Type 3321 Globe Valve · Specifications in mm [inch]*
Left: DN 15 to 50/NPS ½ to 2
Right: DN 65 to 100/NPS 2½ to 4

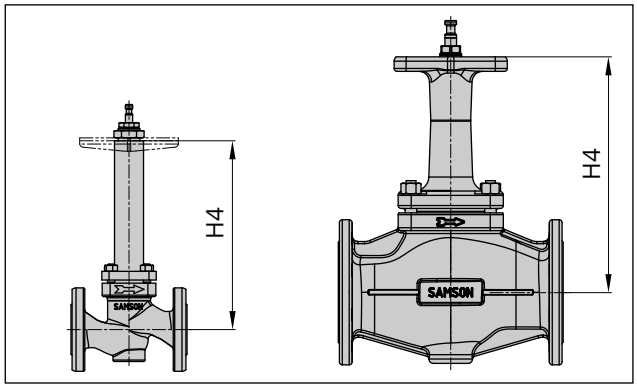


Fig. 6: *Type 3321 Globe Valve with insulating section*
Left: DN 15 to 50/NPS ½ to 2
Right: DN 65 to 100/NPS 2½ to 4

i *Note*

The associated actuator documentation applies to actuators, e.g. SAMSON actuators:

- ▶ *T 8313 for Type 3372 Electropneumatic Actuator*
- ▶ *T 8317 for Type 3371 Pneumatic Actuator*
- ▶ *T 5827 for Type 5827 Electric Actuator*
- ▶ *T 8331 for Type 3374 Electric Actuator*

4 Shipment and on-site transport

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

4.1 Accepting the delivered goods

After receiving the shipment, proceed as follows:

1. Check the scope of delivery. Check that the specifications on the valve nameplate match the specifications in the delivery note. See Chapter 2 for more details on the nameplate.
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. Refer to the transport documents and Chapter 3.5.

4.2 Removing the packaging from the valve

Observe the following sequence:

⇨ Do not open or remove the packaging until immediately before lifting the control valve to install it 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 control valve's center of gravity.*

⇨ *Secure the control 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 injuries in particular) depending on its weight.

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

❗ *NOTICE*

Risk of control 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 load-bearing slings to the actuator, handwheel or any other parts.*

⇨ *Only use slings which are not attached to the valve body to protect the control valve from tilting while being lifted.*

⇨ *Observe lifting instructions (see Chapter 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.
- The permissible transportation temperature of standard control valves is -20 to +65 °C (-4 to +149 °F).

i *Note*

Contact our after-sales service for the transportation temperatures of other valve versions.

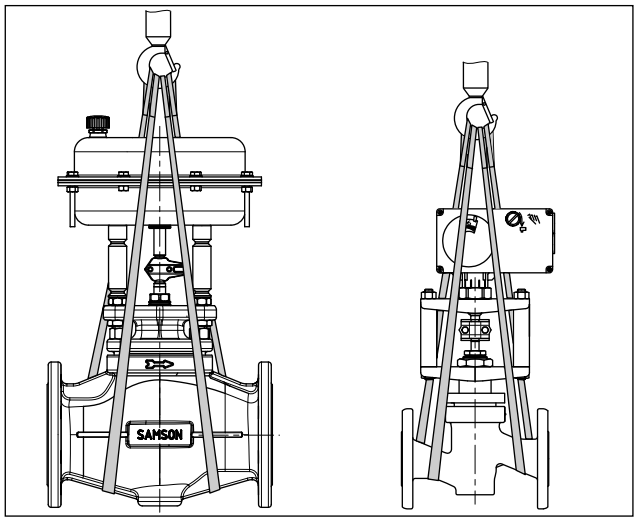


Fig. 7: *Lifting points on the control valve*

4.3.2 Lifting the valve

See Fig. 7

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

Lifting instructions

- Use a hook with safety latch 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 device 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.

Lifting the control valve

1. Attach one sling to each flange of the body and to the rigging equipment (e.g. hook) of the crane or forklift.
2. If necessary, attach further slings to the control valve and rigging equipment to secure the position of the control valve while it is being lifted.
3. Carefully lift the control valve. Check whether the lifting equipment and accessories can bear the weight.
4. Move the control valve at an even pace to the site of installation.
5. Install the control valve into the pipeline (see Chapter 5).
6. After installation in the pipeline, check whether the flanges are bolted tight and the valve in the pipeline holds.
7. Remove slings.

4.4 Storing the valve

! *NOTICE*

Risk of valve damage due to improper storage.

⇨ *Observe the storage instructions.*

⇨ *Avoid longer storage periods.*

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

i *Note*

SAMSON recommends to regularly check 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 control valve assembly 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.
- The permissible storage temperature of standard control valves is -20 to +65 °C (-4 to +149 °F). Contact our after-sales service for the storage temperatures of other valve versions.
- 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.
- SAMSON recommends a storage temperature of 15 °C (59 °F) for elastomers.
- Store elastomers away from lubricants, chemicals, solutions and fuels.

Tip

Our after-sales service can provide more detailed storage instructions on request.

5 Installation

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

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.

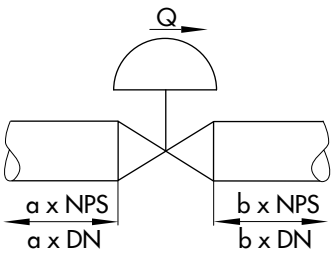
Pipeline routing

The inlet and outlet lengths (see Table 9) 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 control valve functions properly, proceed as follows:

- ⇨ Observe the recommended inlet and outlet lengths (see Table 9). Contact SAMSON if the valve conditions or state of the process medium are different from those specified.
- ⇨ Install the control valve free of stress and with the least amount of vibrations as possible. Read sections 'Mounting position' and 'Support and suspension' in this chapter.
- ⇨ Install the control valve allowing sufficient space to remove the actuator and valve or to perform service and repair work on them.

Table 9: *Inlet and outlet lengths*



Globe valve

Q Flow rate
a Inlet length
b Outlet length

State of process medium	Valve conditions	Inlet length a	Outlet length b
Gases	Ma ≤ 0.3	2	4
	0.3 ≤ Ma ≤ 0.7	2	10
Vapor	Ma ≤ 0.3 [1]	2	4
	0.3 ≤ Ma ≤ 0.7 [1]	2	10
	Wet steam (percentage of condensate >5 %)	2	20
Liquids	Free of cavitation/w < 10 m/s	2	4
	Cavitation producing noise/w ≤ 3 m/s	2	4
	Cavitation producing noise/3 < w < 5 m/s	2	10
	Critical cavitation/w ≤ 3 m/s	2	10
	Critical cavitation/3 < w < 5 m/s	2	20
Flashing	–	2	20
Multi-phase	–	10	20

[1] No wet steam

Mounting position

Generally, SAMSON recommends installing the valve with the actuator upright and on top of the valve.

⇨ 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, nominal size, material, pressure rating and temperature range) match the plant conditions (nominal size and pressure rating of the pipeline, medium temperature etc.). See Chapter 2 for more details on the nameplate.
– The requested or required additional pipe fittings (see Chapter 3.3) have been installed or prepared as necessary before installing the valve.

NOTICE

Risk of control valve damage due to incorrect insulation.

⇨ *Only insulate control valves up to the bonnet flange of the valve body (see Fig. 8). This also applies to versions with insulating section at medium temperatures below 0 °C (32 °F) or above 220 °C (428 °F). If the insulating section is insulated, it will not function properly.*

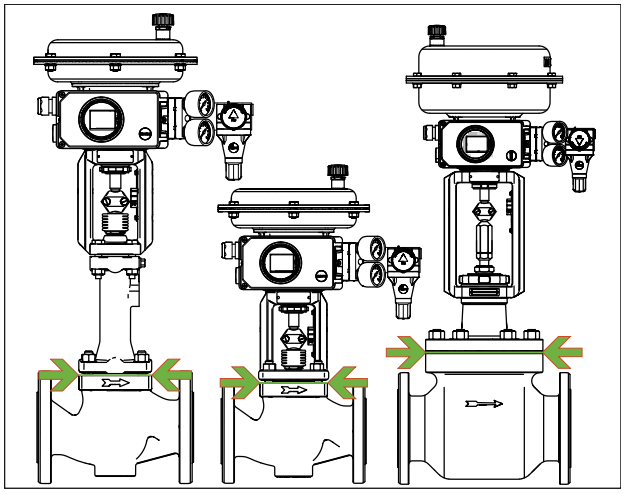


Fig. 8: *Limit of insulation for control valves (example shown)*

Proceed as follows:

⇨ Lay out the necessary material and tools to have them ready during installation work.

⇨ Flush the pipelines.

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. 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.

NOTICE

Risk of leakage and valve damage due to over- or under-torquing.

Observe the specified torques when tightening control valve components. Over-torquing leads to parts wearing out more quickly. Under-torquing may cause leakage.

⇨ *Observe the tightening torques specified in ▶ 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).*

5.4 Mounting the actuator onto the valve

DANGER

Risk of fatal injury due to electric shock from electrically powered components.

⇨ *While working on electric devices or before opening the device, disconnect the supply voltage and protect it against unintentional reconnection.*

⇨ *Do not remove any covers to perform adjustment work on live parts.*

⇨ *Only use protective equipment that can be protected against unintentional reconnection of the power supply.*

⇨ *SAMSON electric actuators are protected against spray water. Avoid jets of water.*

⇨ *Observe all other safety instructions in the associated documentation of the electric device (e.g. electric actuator).*

⚠ WARNING

Risk of personal injury due to preloaded springs in pneumatic actuators.

Valves in combination with pneumatic actuators with preloaded springs are under tension. These control valves with SAMSON pneumatic linear actuators (e.g. Type 3271/3277 or Type 3371) can be identified by the long bolts protruding from the bottom of the actuator.

⇨ *Before starting any work on the actuator, which requires the actuator to be opened, or when the actuator stem has become blocked, relieve the compression from the preloaded springs (see associated actuator documentation).*

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.

Table 10: *Possible combinations and types of actuator mounting*

Actuator		**Type of mounting**	
Type 3371	Actuator area	120 cm²	350 cm²
For nominal size	DN 15 to 50/ NPS ½ to 2	Form B	–
	DN 65 to 100/ NPS 2½ to 4	Form C	Form C
Type 3372	Actuator area	120 cm²	350 cm²
For nominal size	DN 15 to 50/ NPS ½ to 2	Form B	–
	DN 65 to 100/ NPS 2½ to 4	Form C	Form C
Type 3374		Form-fit attachment using stem connector and yoke	
Type 5827		Form-fit attachment using stem connector and yoke	

Mounting the actuator

⇨ To mount the actuator, proceed as described in the associated actuator documentation.

a) Pneumatic or electropneumatic actuator

There are two different ways to mount the pneumatic or electropneumatic actuator onto the valve depending on the version (nominal size etc.): mounting using crossbeam or mounting using rods (see Table 10).

Mounting using crossbeam and central nut

When the actuator is mounted to the valve using a crossbeam (form B, see Fig. 11), the actuator is fastened to the valve bonnet using a central nut.

Mounting using rods

When the actuator is mounted on rods (form C, see Fig. 16) the actuator is connected to the valve bonnet using rods. In this case, a crossbeam is not required for mounting the actuator. A plate keeps the correct distance between rods.



Fig. 9: *Type 3321-PP*



Fig. 10: *Type 3321-IP, up to DN 50/NPS 2, with Type 3725 Positioner*

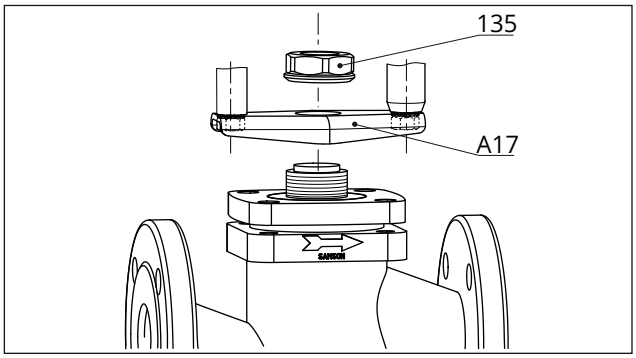


Fig. 11: *Mounting using crossbeam and central nut (form B)*

135 Central nut
A17 Crossbeam



Fig. 12: *Type 3321-E1*



Fig. 13: *Type 3321-E3*



Fig. 14: *Type 3321-PP*



Fig. 15: *Type 3321-IP, DN 65/NPS 2½ and larger, with Type 3725 Positioner*

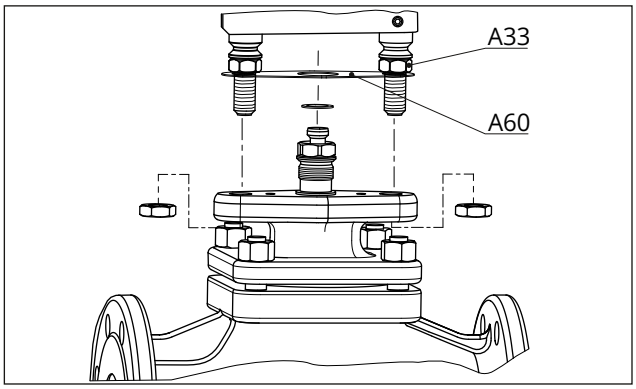


Fig. 16: *Mounting using rods (form C)*

A33 Rod
A60 Plate

b) Electric actuator

When an electric actuator is mounted onto the valve, it is mounted with a form-fit connection using a stem connector and yoke.

5.5 Installing the valve into the pipeline

NOTICE

Premature wear and leakage due to insufficient support or suspension.

⇨ *Support or suspend the valve sufficiently at suitable points.*

Version with flanges

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 Chapter 4.3.2). Observe the flow direction through the valve. The arrow on the valve indicates the direction of flow.
5. Make sure that the correct flange gaskets are used.
6. Bolt the pipe to the valve free of stress.
7. Attach a support or suspension on the valve, if necessary.

5.6 Testing the installed valve

⚠ DANGER

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

Control 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 starting any work on pressure-bearing or pressure-retaining parts belonging to the valve assembly:

⇨ *Depressurize all plant sections affected and the valve (including the actuator). Release any stored energy.*

⇨ *Drain the process medium from the plant sections affected as well as from the valve.*

⚠ DANGER

Risk of fatal injury due to electric shock from electrically powered components.

⇨ *While working on electric devices or before opening the device, disconnect the supply voltage and protect it against unintentional reconnection.*

⇨ *Do not remove any covers to perform adjustment work on live parts.*

⇨ *Only use protective equipment that can be protected against unintentional reconnection of the power supply.*

⇨ *SAMSON electric actuators are protected against spray water. Avoid jets of water.*

⇨ *Observe all other safety instructions in the associated documentation of the electric device (e.g. electric actuator).*

⚠ 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 elements. Both can damage hearing.

⇨ *Follow the standard operating procedures provided by the plant operator.*

In the event of a potential risk:

⇨ *Wear hearing protection when working near the valve.*

⚠ WARNING

Crush hazard arising from moving parts.

The control valve contains 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 or voltage supply is connected to the actuator.*

⇨ *Before working on the pneumatic control valve, disconnect and lock the pneumatic air supply as well as the control signal.*

⇨ *Before working on the electric control valve, disconnect the supply voltage and protect it against unintentional reconnection.*

⇨ *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 or compressed air escaping from pneumatically operated components.

When the valve is operated with a pneumatic actuator or pneumatic valve accessories, exhaust air is vented from the actuator, for example, while the valve is operating and when the valve opens or closes.

⇨ *Wear eye protection when working in close proximity to pneumatic fittings and in the danger zone of the vent openings.*

⚠ WARNING

Risk of personal injury due to preloaded springs in pneumatic actuators.

Valves in combination with pneumatic actuators with preloaded springs are under tension. These control valves with SAMSON pneumatic linear actuators (e.g. Type 3271/3277 or Type 3371) can be identified by the long bolts protruding from the bottom of the actuator.

⇨ *Before starting any work on the actuator, which requires the actuator to be opened, or when the actuator stem has become blocked, relieve the compression from the preloaded springs (see associated actuator documentation).*

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

5.6.1 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.

5.6.2 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.

5.6.3 Fail-safe position

The fail-safe position of a valve can only be checked when the valve is combined with an actuator that moves to the fail-safe position upon air supply or control signal failure.

Fail-safe position with pneumatic actuators with integrated springs

⇨ Shut off the signal pressure line.

⇨ Check whether the valve moves to the fail-safe position (see Chapter 3.1).

Fail-safe position for electric actuators with fail-safe action

⇨ Disconnect the supply voltage from the actuator.

⇨ Check whether the valve moves to the fail-safe position (see Chapter 3.1).

5.6.4 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 chapter is to be performed only by personnel appropriately qualified to carry out such tasks.

⚠ 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 during operation and cause burn injuries.

⇨ *Follow the standard operating procedures provided by the plant operator.*

In the event of a potential risk:

⇨ *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.

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 elements. Both can damage hearing.

⇨ *Follow the standard operating procedures provided by the plant operator.*

In the event of a potential risk:

⇨ *Wear hearing protection when working near the valve.*

⚠ WARNING

Crush hazard arising from moving parts.

The control valve contains 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 or voltage supply is connected to the actuator.*

⇨ *Before working on the pneumatic control valve, disconnect and lock the pneumatic air supply as well as the control signal.*

⇨ *Before working on the electric control valve, disconnect the supply voltage and protect it against unintentional reconnection.*

⇨ *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 or compressed air escaping from pneumatically operated components.

When the valve is operated with a pneumatic actuator or pneumatic valve accessories, exhaust air is vented from the actuator, for example, while the valve is operating and when the valve opens or closes.

⇨ *Wear eye protection when working in close proximity to pneumatic fittings and in the danger zone of the vent openings.*

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

– The control valve is properly installed into the pipeline (see Chapter 5).
– The leak and function tests have been completed successfully (see Chapter 5.6).
– The prevailing conditions in the plant section affected meet the valve sizing requirements (see section 'Intended use' in Chapter 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 may 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 pipelines.

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

⇨ *Follow the standard operating procedures provided by the plant operator.*

In the event of a potential risk:

⇨ *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.

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 elements. Both can damage hearing.

⇨ *Follow the standard operating procedures provided by the plant operator.*

In the event of a potential risk:

⇨ *Wear hearing protection when working near the valve.*

⚠ WARNING

Crush hazard arising from moving parts.

The control valve contains 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 or voltage supply is connected to the actuator.*

⇨ *Before working on the pneumatic control valve, disconnect and lock the pneumatic air supply as well as the control signal.*

⇨ *Before working on the electric control valve, disconnect the supply voltage and protect it against unintentional reconnection.*

⇨ *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 or compressed air escaping from pneumatically operated components.

When the valve is operated with a pneumatic actuator or pneumatic valve accessories, exhaust air is vented from the actuator, for example, while the valve is operating and when the valve opens or closes.

⇨ *Wear eye protection when working in close proximity to pneumatic fittings and in the danger zone of the vent openings.*

8 Malfunctions

Read hazard statements, warnings and caution notes in Chapter 1.

8.1 Troubleshooting

Malfunction	Possible reasons	Recommended action
Actuator and plug stem does not move on demand.	Actuator is blocked.	Put the control valve out of operation (see Chapter 10) and 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 or disconnect the supply voltage and protect it against unintentional reconnection. Before unblocking the actuator, release any stored energy in the actuator (e.g. spring compression). See associated actuator documentation.
	Electric actuator: No or incorrect supply voltage connected.	Check the supply voltage and connections.
	Pneumatic actuators: Diaphragm in the actuator defective	See associated actuator documentation.
	Pneumatic actuator: Signal pressure too low	Check the signal pressure. Check the signal pressure line for leakage.
Actuator and plug stem do not stroke through the full range.	Pneumatic actuator: Signal pressure too low	Check the signal pressure. Check the signal pressure line for leakage.
	Electric actuator: No or incorrect supply voltage connected.	Check the supply voltage and connections.
	Travel stop active	See associated actuator documentation.
	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 is worn out.	Replace valve trim (see Chapter 9) or contact our after-sales service.
The valve leaks to the atmosphere (fugitive emissions).	Defective packing	Replace packing (see Chapter 9) or contact our after-sales service.
	Flanged joint loose or body gaskets worn out	Check the flanged joint. Replace gaskets at the flanged joint (see Chapter 9) or contact our after-sales service.

i ***Note***

Contact SAMSON's 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 Chapter 8.1).
3. Rectify those malfunctions that can be remedied following the information given in this document. Contact our after-sales service in all other cases.

Putting the device back into operation after a malfunction

See Chapter 6.

9 Servicing

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

The following documents are also required for servicing the control valve:

- Mounting and operating instructions for the mounted actuator, for example:
  - ▶ EB 8313-3 for Type 3372 Electropneumatic Actuator (with Type 3725 Positioner)
  - ▶ EB 8317 for Type 3371 Pneumatic Actuator
  - ▶ EB 8331-3 for Type 3374 Electric Actuator (three-step version)
  - ▶ EB 8331-4 for Type 3374 Electric Actuator (version with positioner)
  - ▶ EB 5827-1 for Type 5827 Electric Actuator (version with three-step signal)
  - ▶ EB 5827-2 for Type 5827 Electric Actuator (version with positioner)
- ▶ AB 0100 for tools, tightening torques and lubricants

⚠ DANGER

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

Control 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 starting any work on pressure-bearing or pressure-retaining parts belonging to the valve assembly:

⇨ *Depressurize all plant sections affected and the valve (including the actuator). Release any stored energy.*

⇨ *Drain the process medium from the plant sections affected as well as from the valve.*

⚠ DANGER

Risk of fatal injury due to electric shock from electrically powered components.

⇨ *While working on electric devices or before opening the device, disconnect the supply voltage and protect it against unintentional reconnection.*

⇨ *Do not remove any covers to perform adjustment work on live parts.*

⇨ *Only use protective equipment that can be protected against unintentional reconnection of the power supply.*

⇨ *SAMSON electric actuators are protected against spray water. Avoid jets of water.*

⇨ *Observe all other safety instructions in the associated documentation of the electric device (e.g. electric actuator).*

⚠ 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 during operation and cause burn injuries.

⇨ *Follow the standard operating procedures provided by the plant operator.*

In the event of a potential risk:

⇨ *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.

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 elements. Both can damage hearing.

⇨ *Follow the standard operating procedures provided by the plant operator.*

In the event of a potential risk:

⇨ *Wear hearing protection when working near the valve.*

⚠ WARNING

Crush hazard arising from moving parts.

The control valve contains 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 or voltage supply is connected to the actuator.*

⇨ *Before working on the pneumatic control valve, disconnect and lock the pneumatic air supply as well as the control signal.*

⇨ *Before working on the electric control valve, disconnect the supply voltage and protect it against unintentional reconnection.*

⇨ *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 or compressed air escaping from pneumatically operated components.

When the valve is operated with a pneumatic actuator or pneumatic valve accessories, exhaust air is vented from the actuator, for example, while the valve is operating and when the valve opens or closes.

⇨ *Wear eye protection when working in close proximity to pneumatic fittings and in the danger zone of the vent openings.*

⚠ WARNING

Risk of personal injury due to preloaded springs in pneumatic actuators.

Valves in combination with pneumatic actuators with preloaded springs are under tension. These control valves with SAMSON pneumatic linear actuators (e.g. Type 3271/3277 or Type 3371) can be identified by the long bolts protruding from the bottom of the actuator.

⇨ *Before starting any work on the actuator, which requires the actuator to be opened, or when the actuator stem has become blocked, 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.

⇨ *Follow the standard operating procedures provided by the plant operator.*

In the event of a potential risk:

⇨ *If possible, drain the process medium from the plant sections affected and from the valve.*

⇨ *Wear protective clothing, safety gloves, respiratory protection and eye protection.*

❗ NOTICE

Risk of leakage and valve damage due to over- or under-torquing.

Observe the specified torques when tightening control valve components. Over-torquing leads to parts wearing out more quickly. Under-torquing may cause leakage.

⇨ *Observe the tightening torques specified in ▶ 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).*

❗ NOTICE

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).*

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 Periodic testing

Depending on the operating conditions, check the control 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.

SAMSON recommends the following inspections and tests:

Inspection and testing	Recommended action to be taken in the event of a negative result
Check the markings, labels and nameplates on the control valve for their readability and completeness.	Immediately renew damaged, missing or incorrect nameplates or labels.
	Clean any inscriptions that are covered with dirt and are illegible.
External leakage: Inspect the control valve at the possible points of leakage to ensure there is no leakage.	Check the bolted joint (tightening torque).
	Replace the gaskets at the flanged joints. To do so, put the control valve out of operation (see Chapter 10).
	Replace the packing (see Chapter 9.4). To do so, put the control valve out of operation (see Chapter 10).
Seat leakage (without testing to check that the leakage class requirements are met)	Shut off the section of the pipeline and flush the valve to remove any dirt and/or deposited foreign particles between the seat and plug.
	Renew seat and plug, if necessary (see Chapter 9.4). To do so, put the control valve out of operation (see Chapter 10).
Check the control valve for external damage that could impair the proper functioning of the control valve or even its safe operation.	Repair any damage immediately. If necessary, put the control valve out of operation to do so (see Chapter 10).
Check the valve accessories to ensure they are firmly mounted.	Tighten the connections of the valve accessories.

Inspection and testing	Recommended action to be taken in the event of a negative result
Check to ensure that the actuator and plug stems move smoothly.	If the actuator stem or plug stem is blocked, put the control valve out of operation (see Chapter 10) and 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.
	SAMSON recommends the use of positioners with integrated diagnostic firmware for control valves used for on/off service. The partial stroke test included in this software helps prevent a shut-off valve normally in its end position from seizing up or getting jammed.
If possible, check the valve's fail-safe position by briefly interrupting the air supply.	Put the control valve out of operation (see Chapter 10). Identify the cause for the malfunction and rectify it (see Chapter 8).

9.2 Service work preparations

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 Chapter 10).
3. Remove the actuator from the valve (see associated actuator documentation).

i Note

How the actuator is removed and mounted during service work depends on the type of mounting (form B or form C, see Chapter 5.4).

To remove the actuator (form B) from the valve, the central nut (98) must be loosened.

i Note

To remove an actuator with "stem extends" fail-safe action and/or with preloaded springs, a certain signal pressure must be applied to the actuator (see associated actuator documentation). Once the work is completed, the signal pressure must be removed and the air supply disconnected again and locked.

Tip

SAMSON recommends removing the valve from the pipeline before performing any service work (see Chapter 11).

Once preparation is completed, the service and/or conversion work can be performed as described in the subchapters of Chapter 9.4.

9.3 Installing the valve after service work

1. Mount the actuator (see associated actuator documentation and Chapter 5).

i Note

To fasten the actuator (form B) onto the valve, the central nut (98) must be tightened. Observe tightening torques.

2. Adjust lower or upper signal bench range (see associated actuator documentation).
3. If the valve has been removed, re-install the valve into the pipeline (see Chapter 5).
4. Put the control valve back into operation (see Chapter 6). Observe the requirements and conditions for start-up or putting the device back into operation.

9.4 Service work

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

⇨ After all service work is completed, check the control valve before putting it back into operation (see Chapter 5.6).

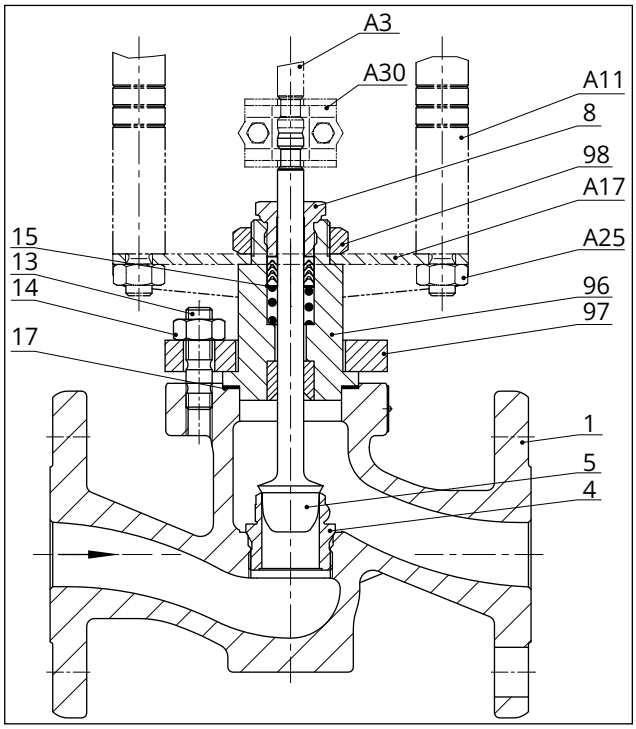


Fig. 17: *Type 3321 Valve, DN 15 to 50/NPS ½ to 2; mounting using a crossbeam and central nut (form B)*

1	Body	96	Flange bonnet
2	Valve bonnet	97	Flange
4	Seat	98	Central nut
5	Plug (with plug stem)	A3	Actuator stem
8	Threaded bushing (packing nut)	A11	Rod
13	Screw	A17	Crossbeam
14	Body nut	A25	Nut
15	Packing	A30	Stem connector
17	Body gasket		

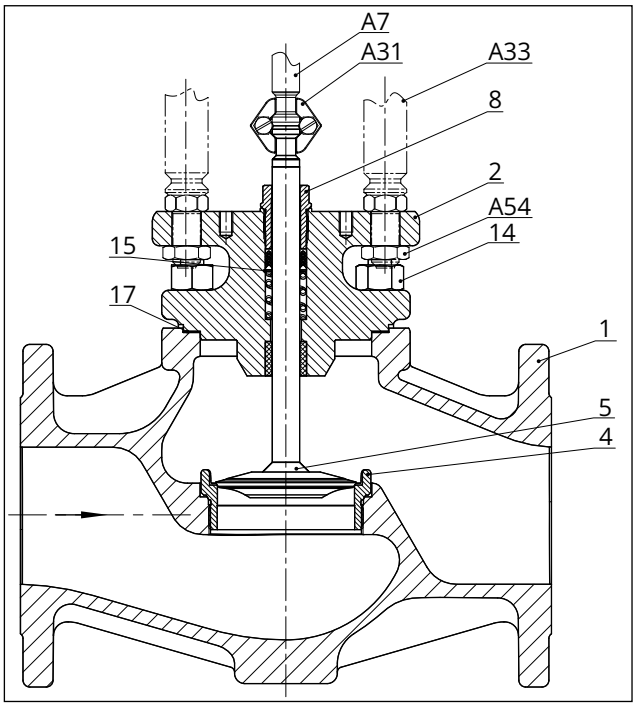


Fig. 18: *Type 3321 Valve, DN 65 to 100/NPS 2½ to 4; mounting using rods (form C)*

1	Body	15	Packing
2	Valve bonnet	17	Body gasket
4	Seat	A7	Actuator stem
5	Plug (with plug stem)	A31	Stem connector
8	Threaded bushing (packing nut)	A33	Rod
14	Body nut	A54	Nut

9.4.1 Replacing the body gasket

a) For mounting using crossbeam and central nut (form B)

1. Undo the body nuts (14) gradually in a criss-cross pattern.
2. Lift the flange (97), flange bonnet (96) and plug with plug stem (5) off the body (1).
3. Remove the gasket (17). Carefully clean the sealing faces in the valve body (1) and on the flange bonnet (96).
4. Apply a suitable lubricant to the new gasket (17) and insert it into the body.
5. Place the flange bonnet (96) and the flange (97) over the studs (13) onto the body.
6. Firmly press the plug (5) into the seat (4). Fasten down the flange bonnet (96) with the body nuts (14). Tighten the body nuts gradually in a criss-cross pattern. Observe tightening torques.

b) For mounting using rods (form C)

1. Undo the body nuts (14) gradually in a crisscross pattern.
2. Lift the valve bonnet (2) and plug with plug stem (5) off the body (1).
3. Remove the gasket (17). Carefully clean the sealing faces in the valve body (1) and on the valve bonnet (2).
4. Apply a suitable lubricant to the new gasket (17) and insert it into the body.
5. Place the valve bonnet (2) and plug with plug stem (5) onto the body.
6. Firmly press the plug (5) into the seat (4). At the same time, fasten the valve bonnet (2) using the body nuts (14). Tighten the body nuts gradually in a crisscross pattern. Observe tightening torques.

9.4.2 Replacing the packing

Note

The Type 3321 Valve is either fitted with a standard packing or a form D packing. The packings have an identical design, but contain different materials.

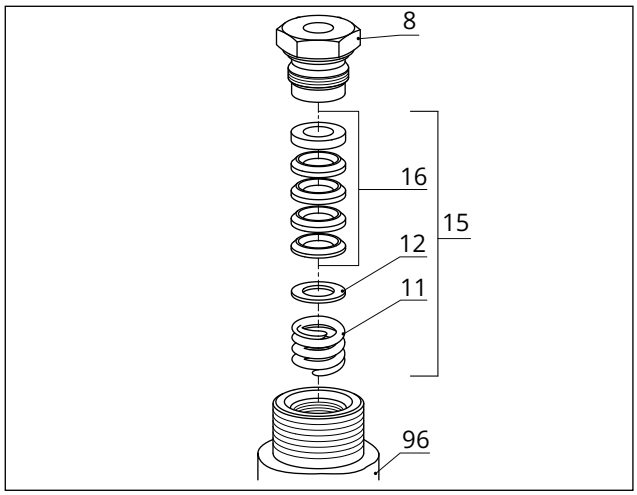


Fig. 19: *Structure of packing*

8	Threaded bushing	15	Packing set
11	Spring	16	V-ring packing
12	Washer	96	Flange bonnet

a) For mounting using crossbeam and central nut (form B)

1. Undo the body nuts (14) gradually in a crisscross pattern.
2. Lift the flange (97), flange bonnet (96) and plug with plug stem (5) off the body (1).
3. Unscrew the threaded bushing (8).
4. Pull the plug with plug stem (5) out of the flange bonnet (96).
5. Pull the entire packing out of the packing chamber using a suitable tool.
6. Renew damaged parts. Clean the packing chamber thoroughly.
7. Apply a suitable lubricant to all packing parts and the plug stem (5).
8. Slide the plug with plug stem (5) into the valve body (1).
9. Place the flange bonnet (96) and the flange (97) over the plug stem and studs (13) onto the body.
10. Carefully slide the packing parts over the plug stem into the packing chamber using a suitable tool. Observe the proper sequence (see Fig. 19).
11. Firmly press the plug (5) into the seat (4). Fasten down the flange bonnet (96) with the body nuts (14). Tighten the body nuts gradually in a crisscross pattern. Observe tightening torques.
12. Screw in the threaded bushing (8) and tighten it. Observe tightening torques.

b) For mounting using rods (form C)

1. Undo the body nuts (14) gradually in a crisscross pattern.
2. Lift the valve bonnet (2) and plug with plug stem (5) off the body (1).
3. Unscrew the threaded bushing (8).
4. Pull the plug with plug stem (5) out of the valve bonnet (2).
5. Pull the entire packing out of the packing chamber using a suitable tool.
6. Renew the damaged parts and carefully clean the packing chamber.
7. Apply a suitable lubricant to all packing parts and the plug stem (5).
8. Slide the plug with plug stem (5) into the valve body (1).
9. Carefully place the valve bonnet (2) over the plug stem onto the body.
10. Carefully slide the packing parts over the plug stem into the packing chamber using a suitable tool. Observe the proper sequence (see Fig. 19).

11. Firmly press the plug (5) into the seat (4). At the same time, fasten the valve bonnet (2) using the body nuts (14). Tighten the body nuts gradually in a crisscross pattern. Observe tightening torques.
12. Screw in the threaded bushing (8) and tighten it. Observe tightening torques.

9.4.3 Replacing the seat and plug

NOTICE

Risk of damage to the facing of the seat and plug due to incorrect servicing.

⇨ *Always replace both the seat and plug.*

Tip

SAMSON recommends using new packing parts and gaskets when replacing the trim.

a) For mounting using crossbeam and central nut (form B)

1. Undo the body nuts (14) gradually in a crisscross pattern.
2. Lift the flange (97), flange bonnet (96) and plug with plug stem (5) off the body (1).
3. Unscrew the threaded bushing (8).
4. Pull the plug with plug stem (5) out of the flange bonnet (96).
5. Pull the entire packing out of the packing chamber using a suitable tool.
6. Unscrew the seat (4) using a suitable tool.
7. Apply a suitable lubricant to the thread and sealing cone of the new seat.
8. Screw in the seat (4). Observe tightening torques.
9. Apply a suitable lubricant to all packing parts and the new plug stem (5). SAMSON recommends replacing the packing as well (see Chapter 9.4.2).
10. Slide the new plug with plug stem (5) into the valve body (1).
11. Place the flange bonnet (96) and the flange (97) over the plug stem and studs (13) onto the body.
12. Carefully slide the packing parts over the plug stem into the packing chamber using a suitable tool. Observe the proper sequence (see Fig. 19).
13. Firmly press the plug (5) into the seat (4). Fasten down the flange bonnet (96) with the body nuts (14). Tighten the body nuts gradually in a crisscross pattern. Observe tightening torques.
14. Screw in the threaded bushing (8) and tighten it. Observe tightening torques.

b) For mounting using rods (form C)

1. Undo the body nuts (14) gradually in a crisscross pattern.
2. Lift the valve bonnet (2) and plug with plug stem (5) off the body (1).
3. Replace the gasket (see Chapter 9.4.1).
4. Unscrew the threaded bushing (8).
5. Pull the plug with plug stem (5) out of the valve bonnet (2).
6. Pull the entire packing out of the packing chamber using a suitable tool.
7. Unscrew the seat (4) using a suitable tool.
8. Apply a suitable lubricant to the thread and sealing cone of the new seat.
9. Screw in the seat (4). Observe tightening torques.
10. Apply a suitable lubricant to all packing parts and the new plug stem (5). SAMSON recommends replacing the packing as well (see Chapter 9.4.2).
11. Slide the new plug with plug stem (5) into the valve body (1).
12. Carefully place the valve bonnet (2) over the plug stem onto the body.
13. Carefully slide the packing parts over the plug stem extension into the packing chamber using a suitable tool. Observe the proper sequence (see Fig. 19).
14. Firmly press the plug (5) into the seat (4). At the same time, fasten the valve bonnet (2) using the body nuts (14). Tighten the body nuts gradually in a crisscross pattern. Observe tightening torques.
15. Screw in the threaded bushing (8) and tighten it. Observe tightening torques.

9.5 Ordering spare parts and operating supplies

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

Spare parts

See Appendix for details on spare parts.

Lubricants

See document ▶ AB 0100 for details on suitable lubricants.

Tools

See document ▶ AB 0100 for details on suitable tools.

10 Decommissioning

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

⚠ DANGER

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

Control 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 starting any work on pressure-bearing or pressure-retaining parts belonging to the valve assembly:

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

⚠ DANGER

Risk of fatal injury due to electric shock from electrically powered components.

- ⇨ *While working on electric devices or before opening the device, disconnect the supply voltage and protect it against unintentional reconnection.*
- ⇨ *Do not remove any covers to perform adjustment work on live parts.*
- ⇨ *Only use protective equipment that can be protected against unintentional reconnection of the power supply.*
- ⇨ *SAMSON electric actuators are protected against spray water. Avoid jets of water.*
- ⇨ *Observe all other safety instructions in the associated documentation of the electric device (e.g. electric actuator).*

⚠ 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 during operation and cause burn injuries.

- ⇨ *Follow the standard operating procedures provided by the plant operator.*

  In the event of a potential risk:

- ⇨ *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.

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 elements. Both can damage hearing.

- ⇨ *Follow the standard operating procedures provided by the plant operator.*

  In the event of a potential risk:

- ⇨ *Wear hearing protection when working near the valve.*

⚠ WARNING

Crush hazard arising from moving parts.

The control valve contains 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 or voltage supply is connected to the actuator.*
- ⇨ *Before working on the pneumatic control valve, disconnect and lock the pneumatic air supply as well as the control signal.*
- ⇨ *Before working on the electric control valve, disconnect the supply voltage and protect it against unintentional reconnection.*
- ⇨ *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 or compressed air escaping from pneumatically operated components.

When the valve is operated with a pneumatic actuator or pneumatic valve accessories, exhaust air is vented from the actuator, for example, while the valve is operating and when the valve opens or closes.

⇨ *Wear eye protection when working in close proximity to pneumatic fittings and in the danger zone of the vent openings.*

⚠ 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.

⇨ *Follow the standard operating procedures provided by the plant operator.*

In the event of a potential risk:

⇨ *If possible, drain the process medium from the plant sections affected and from the valve.*

⇨ *Wear protective clothing, safety gloves, respiratory protection and eye protection.*

To put the control valve out of operation 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. **Pneumatic control valve:** Disconnect and lock the pneumatic air supply to depressurize the actuator.

   Electric control valve: Disconnect and lock the control signal or disconnect the supply voltage and protect it against unintentional reconnection.
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 chapter is to be performed only by personnel appropriately qualified to carry out such tasks.

⚠ 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 during operation and cause burn injuries.

⇨ *Follow the standard operating procedures provided by the plant operator.*

In the event of a potential risk:

⇨ *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 moving parts.

The control valve contains 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 or voltage supply is connected to the actuator.*

⇨ *Before working on the pneumatic control valve, disconnect and lock the pneumatic air supply as well as the control signal.*

⇨ *Before working on the electric control valve, disconnect the supply voltage and protect it against unintentional reconnection.*

⇨ *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.

⇨ *Follow the standard operating procedures provided by the plant operator.*

In the event of a potential risk:

⇨ *If possible, drain the process medium from the plant sections affected and from the valve.*

⇨ *Wear protective clothing, safety gloves, respiratory protection and eye protection.*

⚠ WARNING

Risk of personal injury due to preloaded springs in pneumatic actuators.

Valves in combination with pneumatic actuators with preloaded springs are under tension. These control valves with SAMSON pneumatic linear actuators (e.g. Type 3271/3277 or Type 3371) can be identified by the long bolts protruding from the bottom of the actuator.

⇨ *Before starting any work on the actuator, which requires the actuator to be opened, or when the actuator stem has become blocked, relieve the compression from the preloaded springs (see associated actuator documentation).*

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

– The control valve is put out of operation (see Chapter 10).

11.1 Removing the valve from the pipeline

Version with flanges

1. Support the control valve to hold it in place when separated from the pipeline (see Chapter 4).
2. Unbolt the flanged joint.
3. Remove the valve from the pipeline (see Chapter 4).

11.2 Removing the actuator from the valve

See associated actuator documentation.

12 Repairs

If the control 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 > After-sales Service > Returning goods.
2. Register the return shipment and include the following information by e-mail returns-de@samsongroup.com:
   - Type
   - Article no.
   - Configuration ID
   - Original order
   - Completed Declaration on Contamination, which can be downloaded from the Internet at: ▶ www.samsongroup.com > Service > After-sales Service > Returning goods

   After checking your registration, we will send you a return merchandise authorization (RMA).
3. Attach the RMA (together with the Declaration on Decontamination) to the outside of your shipment so that the documents are clearly visible.
4. Send the shipment to the address given on the RMA.

Note

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

▶ *www.samsongroup.com > Service > After-sales Service*

13 Disposal



SAMSON is a producer registered in Europe, agency in charge
▶ www.samsongroup.com > About SAMSON > Environment, Social & Governance > Material Compliance > Waste electrical and electronic equipment (WEEE)
WEEE reg. no.: DE 62194439

Information on substances listed as substances of very high concern (SVHC) on the candidate list of the REACH regulation can be found in the document “Additional Information on Your Inquiry/Order”, which is added to the order documents, if applicable. This document includes the SCIP number assigned to the devices concerned. This number can be entered into the database on the European Chemicals Agency (ECHA) website (▶ https://www.echa.europa.eu/scip-database) to find out more information on the SVHC contained in the device.

Note

SAMSON can provide you with a recycling passport on request. Simply e-mail us at aftersalesservice@samsongroup.com giving details of your company address.

Tip

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

⇨ Observe local, national and international refuse regulations.

⇨ Do not dispose of components, lubricants and hazardous substances together with your other household waste.

14 Certificates

These declarations are included on the next pages:

- Declaration of conformity in compliance with Pressure Equipment Directive 2014/68/EU:
  - Country of origin: Germany
  - Country of origin: France
- Declaration of conformity in compliance with Machinery Directive 2006/42/EC for the control valves listed on the certificate with Type 3321 Valve
- Declaration of incorporation in compliance with Machinery Directive 2006/42/EC for Type 3321 Valve without actuator
- Declaration of conformity in compliance with the requirements in TSG D7002-2006 for Chinese pressure equipment
- EAC conformity certificate in compliance with TR CU 012/2011 “Safety of equipment in hazardous areas” for the Eurasian Economic Union (EAEU)

The certificates shown were up to date at the time of publishing. The latest certificates can be found on our website:
▶ www.samsongroup.com > Products > Valves > 3321

Other optional certificates are available on request.

Docusign Envelope ID: E5A425D8-697F-40FA-98D4-71C8426D6CF9

EU DECLARATION OF CONFORMITY

Translation of the German original

Module A

For the following products, SAMSON hereby declares under its sole responsibility:

Devices	Series	Type	Version
Globe valve	240	3241	DIN, cast iron body, DN 65 to 125, body of spheroidal graphite iron, DN 50 to 80, fluids G2, L1, L2[1)]
Globe valve	240	3241	ANSI, cast iron body, Class 250, NPS 1½ to 2, Class 125, NPS 2½ to 4, fluids G2, L1, L2[1)]
Three-way valve	240	3244	DIN, cast iron body, DN 65 to 125, body of spheroidal graphite iron, DN 50 to 80, fluids G2, L1, L2[1)]
Globe valve	V2001	3321	DIN, cast iron body, DN 65 to 100, fluids G2, L1, L2[1)]
Globe valve	V2001	3321	ANSI, cast iron body, NPS 2½ to 4, fluids G2, L1, L2[1)]
Three-way valve	V2001	3323	DIN, cast iron body, DN 65 to 100, fluids G2, L1, L2[1)]
Three-way valve	V2001	3323	ANSI, cast iron body, NPS 2½ to 4, fluids G2, L1, L2[1)]
Three-way valve	250	3253	DIN, cast iron body, DN 200, PN 10, fluids G2, L1, L2[1)]

[1)] Gases according Article 4(1)(c.i), second indent, liquids according Article 4(1)(c.ii)

Conformity with the following requirement:

Directive of the European Parliament and of the Council on the harmonization of the laws of the Member States relating to the making available on the market of pressure equipment	2014/68/EU	of 15 May 2014
Conformity assessment procedure applied for liquids according to Article 4(1)	Module A	

Technical specifications applied: DIN EN 12516-2, DIN EN 12516-3, ASME B16.34

Manufacturer: SAMSON AKTIENGESELLSCHAFT, Weismüllerstraße 3, 60314 Frankfurt am Main, Germany

Frankfurt am Main, 2 March 2026

Signiert von:
ppa. Runkwitz, Steffen
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ppa. Steffen Runkwitz
Vice President
Global Sourcing

Signiert von:
i. V. P.
D5A19C45AD26414...

i.V. Peter Scheermesser
Director
Product Maintenance and Engineered Products

EU DECLARATION OF CONFORMITY

Translation of the German original

Module D / N° CE-0062-PED-D-SAM 001-25-DEU-rev-A

For the following products, SAMSON hereby declares under its sole responsibility:

Devices	Series	Type	Version
Control valve for hot water and steam with fail-safe action in heating systems	3374-25/-27 Actuator (1800 N/3000 N force)		Type 3374-25 with Type 3241, 42-36 E (2423E), Type 3374-27 with Type 3241, 3214 (2814), Certificate no.: 01 202 969/B-24-0010, typetested according to DIN EN 14597:2015
Control valve for hot water and steam with fail-safe action in heating systems	3374-21/-26 Actuator (2000 N force)		With Type 3241, 42-36 E, 3214, 3321, 3531 EU-type examination (production type), Module B, Certificate no.: CE-0062-PED-B3.1-SAM 001-26-DEU, typetested according to DIN EN 14597:2015
Control valve for water and steam with fail-safe action in heating systems	5725-310/-313/-320/-323 Actuator 5725-810/-820 Actuator 5825-10/-13/-20/-23 Actuator (500 N force) (model number 2770)		With Type 3214 (2814), 2423 (2823), 3213 (2710), 3222 (2710), 2488 (2730), 2489 (2730) EU-type examination (production type), Module B, Certificate no.: 01 202 641/B-19-0017-01, typetested according to DIN EN 14597:2015, Annex DX
Control valve for water and steam with fail-safe action in heating systems	5827-A11/-A12/-A14/-A15 Actuator 5827-A21/-A22/-A24/-A25 Actuator		With Type 3214 (2814), 2423 (2823), 3213 (2710), 3222 (2710), 2488 (2730), 2489 (2730) EU-type examination (production type), Module B, Certificate no.: 01 202 641/B-19-0017-01, typetested according to DIN EN 14597:2015, Annex DX
Safety shut-off device for gas burners and gas equipment	240	3241G Valve	Equipment for gas and pressure devices Shut-off valve, automatic, valve class D Types 3241-1-Gas and 3241-7-Gas Material 1.0619 or 1.4408, soft seal with bellows, DN 15 to 150, PN 40 Type 3271 or 3277 Actuator with 3/2-way solenoid valve, EU-type examination (production type), Module B, Certificate no.: CE-0062-PED-B3.1-SAM 001-24-DEU

Conformity with the following requirement:

Directive of the European Parliament and of the Council on the harmonization of the laws of the Member States relating to the making available on the market of pressure equipment	2014/68/EU	of 15 May 2014
Conformity assessment procedure applied for liquids according to Article 4(1)	Module D	Certificate no.: N°CE-0062-PED-D-SAM 001-25-DEU-rev-A by Bureau Veritas 0062

The manufacturer's quality management system is monitored by the following notified body:
Bureau Veritas Services SAS, 4 place des Saisons, 92400 Courbevoie, France

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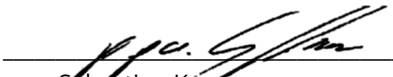
Applied harmonized standards and technical standards: EN 16668, ASME B16.34, EN 60534-4, DIN EN 161:2013-04 (3241G), DIN EN 16678:2016-02 (3241G)

Manufacturer: SAMSON AKTIENGESELLSCHAFT, Weismüllerstraße 3, 60314 Frankfurt am Main, Germany

Frankfurt am Main, 25 February 2026



Dr. Andreas Widl
Chairman of the Executive Board (CEO)



ppa. Sebastian Krause
Vice President Product Development

EU DECLARATION OF CONFORMITY

Translation of the German original

Module H / N° CE-0062-PED-H-SAM 001-25-DEU-rev-A

For the following products, SAMSON hereby declares under its sole responsibility:

Devices	Series	Type	Version
Globe valve	240	3241	EN, cast iron body, DN 150 and larger, body of spheroidal graphite iron, DN 100 and larger, fluids G2, L1, L2 [1)]
			ENANSI, body of steel etc., all fluids
Three-way valve	240	3244	EN, cast iron body, DN 150 and larger, body of spheroidal graphite iron, DN 100 and larger, fluids G2, L1, L2 [1)]
			ENANSI, body of steel etc., all fluids
Cryogenic valve	240	3248	EN/ANSI, all fluids
Globe valve	250	3251	EN/ANSI, all fluids
Globe valve	250	3251-E	EN/ANSI, all fluids
Three-way valve	250	3253	ENANSI, body of steel etc., all fluids
Globe valve	250	3254	EN/ANSI, all fluids
Angle valve	250	3256	EN/ANSI, all fluids
Angle valve (IG standard)	250	3259	EN, all fluids
Globe valve	V2001	3321	EN, body of steel etc., all fluids
			ANSI, all fluids
Three-way valve	V2001	3323	EN, body of steel etc., all fluids
			ANSI, all fluids
Silencer	3381	3381-1	EN/ANSI, single attenuation plate with welding ends, all fluids
		3381-3	EN/ANSI, all fluids
		3381-4	EN/ANSI, single multi-stage attenuation plate with welding ends, all fluids
Globe valve	240	3241	ANSI, cast iron body, Class 125, NPS 5 and larger, fluids G2, L1, L2 [1)]
Cryogenic valve	240	3246	EN/ANSI, all fluids
Three-way valve	250	3253	EN, cast iron body, DN 200 and larger, PN 16, fluids G2, L1, L2 [1)]
Globe valve	290	3291	ANSI, all fluids
Angle valve	290	3296	ANSI, all fluids
Cryogenic valve	–	3588	ANSI, up to NPS 6, Class 600, all fluids
Globe valve	590	3591	ANSI, all fluids
Cryogenic valve	590	3598	ANSI, NPS 3 to 8, Class 900, all fluids
Control valve	590	3595	ANSI, all fluids
Globe valve	SMS	241GR	EN/ANSI, all fluids
Globe valve	SMS	251GR	EN/ANSI, all fluids
Globe valve	SMS	261GR	EN/ANSI, all fluids
Cryogenic valve	SMS	251GC	EN/ANSI, all fluids
Angle valve	SMS	251AR	EN/ANSI, all fluids

[1)] Gases according Article 4(1)(c.i), second indent
Liquids according Article 4(1)(c.ii)

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Conformity with the following requirement:

Directive of the European Parliament and of the Council on the harmonization of the laws of the Member States relating to the making available on the market of pressure equipment	2014/68/EU	of 15 May 2014
Conformity assessment procedure applied for liquids according to Article 4(1)	Module H	Certificate no.: N°CE-0062-PED-H-SAM 001-25-DEU-rev-A by Bureau Veritas 0062

The manufacturer's quality management system is monitored by the following notified body:
Bureau Veritas Services SAS, 4 place des Saisons, 92400 Courbevoie, France

Applied harmonized standards and technical standards: EN 16668, ASME B16.34

Manufacturer: SAMSON AKTIENGESELLSCHAFT, Weismüllerstraße 3, 60314 Frankfurt am Main, Germany

Frankfurt am Main, 12 January 2026

Dr. Andreas Widl
Chairman of the Executive Board (CEO)

ppa. Sebastian Krause
Vice President Product Development

DECLARATION UE DE CONFORMITE
EU DECLARATION OF CONFORMITY

DC014
2026-07

Module A / Modul A

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:

Appareils / Devices	Type	Exécution / Version	Matériel du corps / body Material	PN Class	DN NPS	Fluides / fluids
Vanne de décharge / Back pressure reducing valve	2371-0	DIN	Acier / steel	$P_{max\ T=20°C}$ 10 bar	DN 32 – 65	Tous fluides / all fluids
		ANSI		$P_{max\ T=70°F}$ 150 psi	NPS 1 ¼ –2 ½	
Détendeur alimentaire / Pressure reducing valve	2371-1	DIN		$P_{max\ T=20°C}$ 10 bar	DN 32 – 65	
		ANSI		$P_{max\ T=70°F}$ 150 psi	NPS 1 ¼ – 2 ½	
Vanne de régulation passage droit / Globe valve	2423	à membrane with diaphragm	Fonte grise / cast iron	PN25	DN 65 - 125	G2 /L2 [1]
		à soufflet with bellow	Fonte sphéroïdale / spheroidal graphite iron	PN25	DN 50 - 125	
			Acier / steel	PN16 PN25 PN40	DN 65 – 100 DN 50 - 100 DN 40 - 100	
Vanne de régulation passage droit / Globe valve	3241	DIN	Fonte grise / cast iron	PN10	DN 125 – 150	G2, L1, L2 [1]
		DIN	Fonte grise & fonte sphéroïdale / cast iron & spheroidal graphite iron	PN16	DN 65 – 125	
		DIN	Fonte sphéroïdale / spheroidal graphite	PN 25	DN 50 - 80	
		ANSI	Fonte grise / cast iron	Cl 125 Cl 250	NPS 2 ½ - 4 NPS 1 ½ - 2	
		DIN	Acier / steel	PN10 PN16 PN25	DN 32 – 100 DN 32 – 50 DN 32 - 40	Tous fluides / all fluids
		ANSI		Cl 150	NPS 1 ¼ - 2	
Vanne de régulation 3 voies / 3-way Valve	3244	DIN	Fonte grise / cast iron	PN10 PN16	DN 125 – 150 DN 65 – 125	G2, L1, L2 [1]
		DIN	Acier / steel	PN10 PN16 PN25	DN 32 – 100 DN 32 – 50 DN 32 - 40	Tous fluides / all fluids
		ANSI		Cl 150	NPS 1 ¼ - 2	
Vanne de régulation passage droit / Globe valve	3251	DIN	Acier / steel	PN16 PN25	DN 32 – 50 DN 32 – 40	Tous fluides / all fluids
		ANSI		Cl 150	NPS 1 ¼ - 2	
Vanne à segment sphérique / Segment ball valve	3310	DIN	Acier / steel	PN10 PN16 PN25	DN 40 – 50 DN 80 – 100 DN 40	Tous fluides / all fluids
		ANSI		Cl 150	NPS 1 ½ – 2	
Vanne de régulation passage droit / Globe valve	3321	DIN	Fonte grise / cast iron	PN16	DN 65 – 100	G2, L1, L2 [1]
		ANSI		Cl 125	NPS 2 ½ - 4	
		DIN	Fonte sphéroïdale / spheroidal graphite iron	PN25	DN 50 – 80	
		ANSI	Acier / steel	Cl 150	NPS 1 ½ - 2	Tous fluides / all fluids
Vanne papillon / Butterfly valve	3331	DIN	Acier / steel	PN10 PN 16-20	DN 50 – 100 DN 50	Tous fluides / all fluids
		ANSI	Acier / steel	Cl 150	NPS 2	
Vanne à membrane / Diaphragm valve	3345	DIN	Acier / steel	$P_{max\ T=20°C}$ 10 bar $P_{max\ T=20°C}$ 16 bar	DN 32 – 100 DN 32 – 50	Tous fluides / all fluids
		ANSI		$P_{max\ T=70°F}$ 150 psi or 230 psi	NPS 1 ¼ – 2	
		DIN	Fonte grise & fonte sphéroïdale / cast iron & spheroidal graphite iron	$P_{max\ T=20°C}$ 10 bar $P_{max\ T=20°C}$ 16 bar $P_{max\ T=20°C}$ 40 bar	DN 125 – 150 DN 65 – 125 DN 40 – 50	G2, L1, L2 [1]
		ANSI		$P_{max\ T=70°F}$ 150 psi $P_{max\ T=70°F}$ 230 psi $P_{max\ T=70°F}$ 580 psi	NPS 2 ½ – 4 NPS 2 ½ – 5 NPS 1 ½ – 2	

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DC014
2026-07

Module A / Modul A

Appareils / Devices	Type	Exécution / Version	Matériel du corps / body Material	PN Class	DN NPS	Fluides / fluids
Vanne hygiénique / Hygienic valve	3347	DIN	Acier / steel	$P_{max\ T = 20°C}$ 10 bar	DN 125 – 150	G2, L1, L2 [1]
		ANSI		$P_{max\ T= 70°F}$ 150 psi	NPS 5 – 6	
Vanne aseptique / Aseptic valve	3349	DIN	Acier / steel	$P_{max\ T = 20°C}$ 10 bar $P_{max\ T = 20°C}$ 16 bar $P_{max\ T = 20°C}$ 25 bar	DN 32 – 100 DN 32 – 50 DN 32 – 40	Tous fluides / all fluids
		ANSI		$P_{max\ T= 70°F}$ 150 psi $P_{max\ T= 70°F}$ 230 psi $P_{max\ T= 70°F}$ 360 psi	NPS 1 ¼ – 4 NPS 1 ¼ – 2 NPS 1 ¼ – 1 ½	
Vanne Tout ou Rien / On-Off Valve	3351	DIN	Acier / steel	PN16 PN25	DN 32 – 50 DN 32 – 40	Tous fluides / all fluids
		ANSI		Cl 150	NPS 1 ¼ – 2	
		DIN	Fonte grise & fonte sphéroïdale / cast iron & spheroidal graphite iron	PN16	DN 65 – 100	G2, L1, L2 [1]
			Fonte sphéroïdale / spheroidal graphite iron	PN25	DN 50 – 80	
		ANSI	Fonte grise / cast iron	Cl 125	NPS 2 ½ – 4	
Bride de mesure / Measure flange	5090	DIN	Acier / steel	PN6 PN10 PN16 PN25 PN40	DN 200 – 500 DN 125 – 350 DN 65 – 200 DN 50 – 125 DN 40 – 100	G2, L2 [1]

[1] Gas selon l'article 4 § 1.c) i) / Gases Acc. to article 4 paragraphs 1.c) i)
Liquide selon l'article 4 § 1.c) ii) / Liquids Acc. to article 4 paragraphs 1.c) ii)

la conformité avec le règlement suivant : / the conformity with the following requirement :

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	**2014/68/UE 2014/68/EU**	**Du / of 15.05.2014**
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	**Module A / Modul A**	

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

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

Vaulx-en-Velin, le 21/07/2026

Bruno Soulas
Directeur General - Directeur Stratégie et Développement
General Manager - Head of Strategy and Development

DECLARATION UE DE CONFORMITE
EU DECLARATION OF CONFORMITY

DC012
2026-07

Module H / Modul H, N°/ Nr CE-0062-PED-H-SAM 001-26-FRA

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:

Appareils / Devices	Type	Exécution / Version	Matériau du corps / Body Material	PN Class	DN NPS	Fluides / Fluids
Vanne de régulation passage droit / globe valve	3241	DIN	Fonte grise & fonte sphéroïdale / cast iron & spheroidal graphite iron	PN 16	DN 150	G2, L1, L2 [1]
		ANSI		Cl 125	NPS 6	
		DIN	Fonte sphéroïdale / spheroidal graphite iron	PN 25	DN 100 – 150	
		DIN	Acier / steel	PN10 PN16 PN25 PN40	DN 125 – 150 DN 65 – 150 DN 50 – 150 DN 32 – 150	Tous fluides / all fluids
		ANSI		Cl 150 Cl 300	NPS 2 ½ - 6 NPS 1¼ – 6	
Vanne de régulation 3 voies / 3-way Valve	3244	DIN	Fonte grise / cast iron	PN 16	DN 150	G2, L1, L2 [1]
		DIN	Acier / steel	PN10 PN16 PN25 PN40	DN 125 – 150 DN 65 – 150 DN 50 – 150 DN 32 – 150	Tous fluides / all fluids
		ANSI		Cl 150 Cl 300	NPS 2 ½ – 6 NPS 1¼ – 6	
Vanne de régulation passage droit / globe valve	3251	DIN	Acier / steel	PN16 PN25 PN40 – 400	DN 65 – 150 DN 50 – 150 DN 32 – 150	Tous fluides / all fluids
		ANSI		Cl 150 Cl 300 - 2500	NPS 2 ½ – 6 NPS 1 ¼ – 6	
Vanne haute pression / High pressure valve	3252	DIN	Acier / steel	PN40 – 400	DN 32 – 80	Tous fluides / all fluids
		ANSI		Cl 300 - 2500	NPS 1 ¼ – 3	
Vanne à segment sphérique / Segment ball valve	3310	DIN	Acier / steel	PN10 PN16 PN25 PN40	DN 150 DN 80 – 150 DN 50 – 150 DN 40 – 150	Tous fluides / all fluids
		ANSI		Cl 150 Cl 300	NPS 3 – 6 NPS 1 ½ – 6	
Vanne de régulation passage droit / globe valve	3321	DIN	Fonte sphéroïdale / spheroidal graphite iron	PN 25	DN 100	G2, L1, L2 [1]
		DIN	Acier / steel	PN16 PN40	DN 65 – 100 DN 32– 100	Tous fluides / all fluids
		ANSI		Cl 150 Cl 300	NPS 2 ½ – 4 NPS 1½ – 4	
Vanne papillon / Butterfly valve	3331	DIN	Acier / steel	PN10 PN16 - 20 PN25 – 50	DN 150 – 400 DN 80 - 400 DN 50 – 400	Tous fluides / all fluids
		ANSI		Cl 150 Cl 300	NPS 3 – 16 NPS 2 - 16	
Vanne à membrane / Diaphragm valve	3345	ANSI	Fonte grise & fonte sphéroïdale / cast iron & spheroidal graphite iron	$P_{max\ T=70°F}$ 150 psi	NPS 5 – 6	G2, L1, L2 [1]
				$P_{max\ T=70°F}$ 230 psi	NPS 6	
			Acier / steel	$P_{max\ T=70°F}$ 150 - 230 psi	NPS 2 ½ – 6	Tous fluides / all fluids

DECLARATION UE DE CONFORMITE
EU DECLARATION OF CONFORMITY

DC012
2026-07

Module H / Modul H, N°/ Nr CE-0062-PED-H-SAM 001-26-FRA

Appareils / Devices	Type	Exécution / Version	Matériau du corps / Body Material	PN Class	DN NPS	Fluides / Fluids
Vanne hygiénique / Hygenic valve	3347	DIN	Acier / steel	$P_{max\ T=20°C}$ 16 bar $P_{max\ T=20°C}$ 40 bar $P_{max\ T=20°C}$ 63 bar	DN 150 DN 65 – 150 DN 32 – 150	G2, L1, L2 [1]
		ANSI		$P_{max\ T=70°F}$ 230 psi $P_{max\ T=70°F}$ 580 psi $P_{max\ T=70°F}$ 910 psi	NPS 6 NPS 2 ½ – 6 NPS 1 ¼ – 6	
Vanne aseptique / Aseptic valve	3349_HV01 3349 HV01.1	DIN	Acier / steel	$P_{max\ T=20°C}$ 16 bar $P_{max\ T=20°C}$ 25 bar	DN 65 – 100 DN 50 – 100	Tous fluides / all fluids
		ANSI		$P_{max\ T=70°F}$ 230 psi $P_{max\ T=70°F}$ 360 psi	NPS 2 ½ – 4 NPS 2 – 4	
Vanne Tout ou Rien / On-Off Valve	3351	DIN	Fonte sphéroïdale / spheroidal graphite iron	PN 25	DN 100	G2, L1, L2 [1]
		DIN	Acier / steel	PN16 PN25 PN40	DN 65 – 100 DN 50 – 100 DN 32 – 100	Tous fluides / all fluids
		ANSI		Cl 150 Cl 300	NPS 2 ½ – 4 NPS 1 ¼ – 4	
Bride de mesure / Measure flange	5090	DIN	Acier / steel	PN10	DN 400 – 500	G2, L2 [1]
				PN16	DN 250 – 500	
				PN25	DN 150 – 500	
				PN40	DN 125 – 500	

[1] Gas selon l'article 4 § 1.c) i) / Gases Acc. to article 4 paragraphs 1.c) i)
Liquide selon l'article 4 § 1.c) ii) / Liquids Acc. to article 4 paragraphs 1.c) ii)

la conformité avec le règlement suivant : / the conformity with the following requirement :

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 to the making available on the market of pressure equipment	**2014/68/UE 2014/68/EU**	**Du / of 15.05.2014**
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	**Module H / Modul H**	**Certificat n° CE-0062-PED-H-SAM 001-26-FRA**

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

Le système de contrôle Qualité du fabricant est effectué par l'organisme de certification suivant :
The manufacturer's quality management system is monitored by the following notified body:

Bureau Veritas Services SAS N°/Nr 0062, 4 place des Saisons 92400 COURBEVOIE
Fabricant / manufacturer : Samson Régulation SAS, 1, rue Jean Corona, FR-69120 VAULX-EN-VELIN

Vaulx-en-Velin, le 23/07/2026 .

Bruno Soulas
Directeur Général – Directeur Stratégie et Développement /
General Manager - Head of Strategy and Development

EU DECLARATION OF CONFORMITY
TRANSLATION

Declaration of Conformity of Final Machinery

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

For the following products:

Types 3321-IP/-PP Pneumatic Control Valves consisting of the Type 3321 Valve and Type 3371 Pneumatic Actuator or Type 3372 Electropneumatic 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 3321 Valve: Mounting and Operating Instructions EB 8111/8112
- Type 3371 Actuator: Mounting and Operating Instructions EB 8317
- Type 3372 Actuator: Mounting and Operating Instructions EB 8313-X

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 12100:2011-03

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 AG, Weismüllerstraße 3, 60314 Frankfurt am Main, Germany
Frankfurt am Main, 04 March 2021

i.V. Peter Arzbach

Peter Arzbach
Director
Product Management

i.V. P. Scheermesser

Peter Scheermesser
Director
Product Life Cycle Management and ETO Development for Valves and Actuators

Revision no. 00

DECLARATION OF INCORPORATION
TRANSLATION

Declaration of Incorporation in Compliance with Machinery Directive 2006/42/EC

For the following products:
Type 3321 Pneumatic Control Valve

We certify that the Type 3321 Pneumatic Control Valves are partly completed machinery as defined in the Machinery Directive 2006/42/EC and that the safety requirements stipulated in Annex I, 1.1.2, 1.1.3, 1.1.5, 1.3.2, 1.3.4 and 1.3.7 are observed. The relevant technical documentation described in Annex VII, part B has been compiled.

Products we supply must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of the Machinery Directive 2006/42/EC.

Operators are obliged to install the products observing the accepted industry codes and practices (good engineering practice) as well as the mounting and operating instructions. Operators must take appropriate precautions to prevent hazards that could be caused by the process medium and operating pressure in the valve as well as by the signal pressure and moving parts.

The permissible limits of application and mounting instructions for the products are specified in the associated data sheets as well as the mounting and operating instructions; the documents are available in electronic form on the Internet at www.samsongroup.com.

For product descriptions of the valve, refer to:
- Type 3321 Valve: Mounting and Operating Instructions EB 8111/8112

Referenced technical standards and/or specifications:
- VCI, VDMA, VGB: Leitfaden Maschinenrichtlinie (2006/42/EG) – Bedeutung für Armaturen, May 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 12100:2011-03

Comments:
- See mounting and operating instructions for residual hazards.
- Also observe the referenced documents listed in the mounting and operating instructions.

Persons authorized to compile the technical file:

SAMSON AG, Weismüllerstraße 3, 60314 Frankfurt am Main, Germany
Frankfurt am Main, 04 March 2021

i.V. Peter Arzbach

Peter Arzbach
Director
Product Management

i. V. P. Scheermesser

Peter Scheermesser
Director
Product Life Cycle Management and ETO Development for Valves and Actuators

Revision no. 00

DECLARATION OF CONFORMITY

DC016

For the following products

2019-08

Type 3241, 3244, 3249, 3251, 3252, 3256, 3347, 3321, 3349 Control Valve

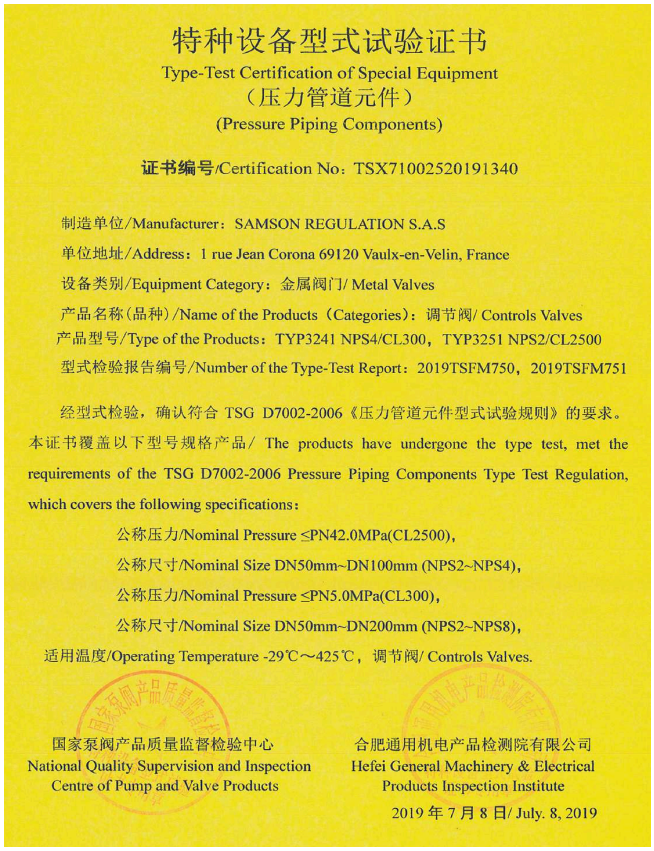
Certificate nbº: TSX71002520191340

Test report nbº: 2019TSFM750-TYP3241 and 2019TSFM751-TYP3251

Valves 3241 and 3251 have passed the evaluation tests according to the requirements of TSG D7002-2006 Chinese Pressure Equipment.

As a result, all of the above check valves meet the requirements of TSG D7002-2006 for Chinese pressure equipment according to the following characteristics:

- DN 50 to 200 PN ≤ 5 MPa (50 bar) or NPS 2 to NPS 8 Class ≤ 300,
- DN 50 to 100 PN ≤ 42 MPa (420 bar) or NPS 2 to NPS 4 Class ≤ 2500,
- Operating temperature: -29℃ ≤ T ≤425℃.



特种设备型式试验证书

Type-Test Certification of Special Equipment

（压力管道元件）

(Pressure Piping Components)

证书编号/Certification No：TSX71002520191340

制造单位/Manufacturer：SAMSON REGULATION S.A.S

单位地址/Address：1 rue Jean Corona 69120 Vaulx-en-Velin, France

设备类别/Equipment Category：金属阀门/ Metal Valves

产品名称(品种)/Name of the Products（Categories)：调节阀/ Controls Valves

产品型号/Type of the Products：TYP3241 NPS4/CL300，TYP3251 NPS2/CL2500

型式检验报告编号/Number of the Type-Test Report：2019TSFM750，2019TSFM751

经型式检验，确认符合 TSG D7002-2006《压力管道元件型式试验规则》的要求。本证书覆盖以下型号规格产品/ The products have undergone the type test, met the requirements of the TSG D7002-2006 Pressure Piping Components Type Test Regulation, which covers the following specifications：

公称压力/Nominal Pressure ≤PN42.0MPa(CL2500)，

公称尺寸/Nominal Size DN50mm~DN100mm (NPS2~NPS4)，

公称压力/Nominal Pressure ≤PN5.0MPa(CL300)，

公称尺寸/Nominal Size DN50mm~DN200mm (NPS2~NPS8)，

适用温度/Operating Temperature -29℃～425℃，调节阀/ Controls Valves.

国家泵阀产品质量监督检验中心
National Quality Supervision and Inspection Centre of Pump and Valve Products

合肥通用机电产品检测院有限公司
Hefei General Machinery & Electrical Products Inspection Institute

2019 年 7 月 8 日/ July. 8, 2019

SAMSON REGULATION S.A.

Bruno Soulas
Head of Administration

SAMSON REGULATION S.A.

Joséphine Signoles-Fontaine
QSE Manager

ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ

СЕРТИФИКАТ СООТВЕТСТВИЯ

№ ЕАЭС KZ.7500525.01.01.02386

Серия KZ № 0278657

ОРГАН ПО СЕРТИФИКАЦИИ БИН 990940001103, Товарищество с ограниченной ответственностью "Т-Стандарт", аттестат аккредитации: KZ.O.02.0525 от 17.10.2024, юридический адрес: Республика Казахстан, город Алматы, Бостандыкский район, проспект Аль-Фараби 19/1, ПФЦ «Нурлы-Тау», блок 3Б, 2 этаж, почтовый индекс: 050059, фактический адрес: Республика Казахстан, город Алматы, Бостандыкский район, проспект Аль-Фараби 19/1, ПФЦ «Нурлы-Тау», блок 3Б, 2 этаж, почтовый индекс: 050059, телефон: +7(701) 071 63 88, электронная почта: office@tst.kz

ЗАЯВИТЕЛЬ БИН 130640006195, Товарищество с ограниченной ответственностью "НИЦ ГеоСервис". Место нахождения (адрес юридического лица) и адрес места осуществления деятельности: Республика Казахстан, Карагандинская область, город Караганда, район имени Казыбек Би, улица Терешковой, 18, индекс: M02E3T6. телефон: +7(777) 540 50 96, электронная почта: cert_msk2@geomark.kz

ИЗГОТОВИТЕЛЬ «SAMSON AKTIENGESELLSCHAFT», располагающийся по адресу: Германия, Weismüllerstraße 3, 60314 Frankfurt am Main адрес осуществления деятельности: Германия, Weismüllerstraße 3, 60314 Frankfurt am Main, «SAMSON REGULATION S.A.S.», Франция, 1, rue Jean Corona, 69120 Vaulx-en-Velin

ПРОДУКЦИЯ Неэлектрическое оборудование: Арматура промышленная трубопроводная во взрывозащищенном исполнении: Клапаны регулирующие, типы 3241, 251GR, 3248, 3251, 3321, 3510, маркировка взрывозащиты и описание согласно приложению № 0116235-0116236; Продукция изготавливается в соответствии с ISO 80079-36 Explosive atmospheres – Part 36: Non-electrical equipment for explosive atmospheres – Basic method and requirements; серийный выпуск

КОД ТН ВЭД ЕАЭС **8481805910; 8481805990**

СООТВЕТСТВУЕТ ТРЕБОВАНИЯМ ТР ТС 012/2011 "О безопасности оборудования для работы во взрывоопасных средах" утвержденного решением Комиссии Таможенного союза от 18 октября 2011 г. № 825;

СЕРТИФИКАТ СООТВЕТСТВИЯ ВЫДАН НА ОСНОВАНИИ протоколов испытаний № ИЛ-11/10-4 - № ИЛ-11/10-7 от 10.11.2025г., № ИЛ-12/03-3 - № ИЛ-12/03-6 от 03.12.2025г. выданных аккредитованной Испытательной лабораторией филиала "Атырау" Товарищества с ограниченной ответственностью "Т-Стандарт" (аттестат: KZ.T.06.2232); акта анализа состояния производства от 27.10.2025г. (эксперт-аудитор Жигалина Г.М.), выданного Органом по подтверждению соответствия Товарищества с ограниченной ответственностью "Т-Стандарт" (аттестат: KZ.O.02.0525); пояснительной записки; технической документации; Схема сертификации: 1с

ДОПОЛНИТЕЛЬНАЯ ИНФОРМАЦИЯ Периодическую оценку сертифицируемой продукции проводит Орган по подтверждению соответствия Товарищества с ограниченной ответственностью "Т-Стандарт"; Действие сертификата распространяется на продукцию, изготовленную с 10.2025 г.; Условия и срок хранения продукции в соответствии с эксплуатационной документацией. Срок службы – 25 лет; Договор № 01-02/10 от 07.08.2025г.; ГОСТ 31610.0-2019 "Взрывоопасные среды. Часть 0. Оборудование. Общие требования"; ГОСТ 32407-2013 "Взрывоопасные среды. Часть 36. Неэлектрическое оборудование для взрывоопасных сред. Общие требования и методы испытаний"; ГОСТ ISO/DIS 80079-37-2013 "Взрывоопасные среды. Часть 37. Неэлектрическое оборудование для взрывоопасных сред – Неэлектрическое оборудование с видами взрывозащиты «конструкционная безопасность «c», контроль источника воспламенения «b», погружение в жидкость «k»;

СРОК ДЕЙСТВИЯ с 03.02.2026 **по** 02.02.2031 **ВКЛЮЧИТЕЛЬНО**

М.П.

Руководитель (уполномоченное лицо) органа по сертификации _____ (подпись) ОВЧИННИКОВА ВЕРА АЛЕКСАНДРОВНА (Ф.И.О.)

Эксперт (эксперт-аудитор) (эксперты(эксперты-аудиторы)) _____ (подпись) ГОПТАРЕНКО ВЯЧЕСЛАВ ЮРЬЕВИЧ (Ф.И.О.)

Бланк изготовлен «КАОС», г. Астана

ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ

ПРИЛОЖЕНИЕ

Серия KZ № 0116235

К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ЕАЭС KZ 7500525.01.01.02386

1 лист

1. НАЗНАЧЕНИЕ И ОБЛАСТЬ ПРИМЕНЕНИЯ

Клапаны регулирующие, типы 3241, 251GR, 3248, 3251, 3321, 3510 во взрывозащищенном исполнении – далее клапаны, предназначены для регулирования и/или герметичного перекрытия потоков различных рабочих сред в системах трубопроводов.

Область применения – взрывоопасные зоны класса 1 и 2 по ГОСТ IEC 60079-10-1-2013 «Взрывоопасные среды. Часть 10-1. Классификация зон. Взрывоопасные газовые среды», зоны класса 21 и 22 по ГОСТ 31610.10-2-2017 (IEC 60079-10-2:2015) «Взрывоопасные среды. Часть 10-2. Классификация зон. Взрывоопасные пылевые среды».

2. ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ

Основные технические характеристики регулирующих клапанов приведены в таблице 1. Подробные технические характеристики изделий указаны в технической документации изготовителя.

Таблица 1

Тип	Маркировка взрывозащиты	Номинальный диаметр		Номинальное давление		Температура рабочей среды, °С	Диапазон температур окружающей среды, °С
		DN, мм	NPS, дюймы	МПа (бар)	Class		
3241	Ex h IIC T* Gb X Ex h IIIC T* Db X	от 15 до 300	от ½″ до 12 ″	от 1,0 до 4,0 (от 10 до 40)	от 125 до 300	от минус 196 °С до плюс 450 °С	от минус 60 °С до плюс 60 °С
3251		от 15 до 500	от ½″ до 20″	от 1,6 до 40,0 (от 16 до 400)	от 150 до 2500	от минус 196 °С до плюс 550 °С	от минус 60 °С до плюс 60 °С
3248		от 25 до 150	от 1 до 6	от 1,6 до 10,0[1] (от 16 до 100)[1]	от 150 до 600	от минус 196[2] °С до плюс 65 °С	от минус 60 °С до плюс 60 °С
3321	Примечание: T* - конкретные значения температуры, зависят от вида исполнения и указываются в маркировке конкретного прибора	от 15 до 100	от ½″ до 4″	от 1,6 до 4,0 (от 16 до 40)	от 125 до 300	от минус 10 °С до плюс 300 °С	от минус 60 °С до плюс 60 °С
3510		от 10 до 25	от ½″ до 1″	от 4,0 до 40,0 (от 40 до 400)	от 150 до 2500	от минус 200 °С до плюс 450 °С	от минус 60 °С до плюс 60 °С
251GR		от 15 до 200	от ½″ до 8″	от 1,6 до 16,0 (от 16 до 160)	от 150 до 900	от минус 50 °С до плюс 600 °С	от минус 60 °С до плюс 60 °С

[1] для клапанов, изготовленных из алюминия, максимальное номинальное давление ограничено до 4 МПа (40 бар)

[2] для низкотемпературного исполнения нижний предел температуры рабочей среды составляет минус 273 °С.

3. ОПИСАНИЕ КОНСТРУКЦИИ И СРЕДСТВ ОБЕСПЕЧЕНИЯ ВЗРЫВОЗАЩИТЫ

Корпуса клапанов выполнены из стального литья, в том числе коррозионностойкого, жаропрочного, низкотемпературного, чугуна или из алюминия. Седло и плунжер уплотняются в закрытом положении, обеспечивая контроль потока. Шток уплотняется V-образным сальником или, при необходимости, сильфонным уплотнением (для минимизации утечек). Клапан пропускает рабочую среду в направлении, обозначенном стрелкой. Изготавливаются по модульному принципу, могут быть оснащены различными дополнительными устройствами: приводами, позиционерами, сигнализаторами конечных положений, электромагнитными клапанами, регуляторами давления, усилителями потока и другими дополнительными устройствами.

При возрастании регулирующего сигнала увеличивается усилие, действующее на мембрану в приводе. Пружины привода сжимаются. В зависимости от выбранного рабочего направления шток пневматического привода втягивается или выдвигается. В результате этого изменяется положение плунжера относительно седла, что, в свою очередь, определяет расход среды и, соответственно, давление. В конструкции с сильфонной вставкой контрольный штуцер позволяет контролировать герметичность сильфонной вставки из коррозионностойкой стали. Типы присоединений к трубопроводу: фланцевое, приварное, резьбовое (в зависимости от модели). Более подробное описание конструкции см. в технической документации изготовителя.

Взрывозащищенность клапанов обеспечивается выполнением требований стандартов: ГОСТ 31610.0-2019 (IEC 60079-0:2017); ГОСТ 32407-2013 (ISO/DIS 80079-36); ГОСТ ISO/DIS 80079-37-2013.

4. СПЕЦИАЛЬНЫЕ УСЛОВИЯ ПРИМЕНЕНИЯ

Знак «X», стоящий после Ex-маркировки, означает, что при эксплуатации необходимо соблюдать следующие специальные условия применения:

- монтаж, эксплуатацию, техническое обслуживание клапанов и навесного оборудования к ним проводить в соответствии с указаниями производителя по его технической документации; требованиями ГОСТ 31438.1-2011 (EN 1127-1:2007), ГОСТ IEC 60079-14-2013 регламентирующих применение данного оборудования во взрывоопасных зонах;
- запрещается эксплуатировать клапаны в условиях, превышающих предельные значения, указанные в техпаспорте и на заводской табличке;
- навесное оборудование должно иметь действующие сертификаты соответствия ТР ТС 012/2011, допускающие возможность их применения во взрывоопасных зонах; необходимо соблюдать специальные условия безопасного применения «X», указанные в сертификатах соответствия и руководствах по эксплуатации для навесного оборудования;
- при монтаже клапанов необходимо учитывать направление потока среды, обозначенное стрелкой на корпусе клапанов;
- клапаны следует встраивать в локальную систему уравнивания потенциалов во взрывоопасной зоне;

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ПРИЛОЖЕНИЕ

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- при эксплуатации клапанов, в зонах, опасных по воспламенению горючей пыли, требуется учитывать температуру окружающей среды; температура воспламенения пыли должна превышать температуру поверхности арматуры и её составных частей более чем в 1,5 раза, а температура тления осевшей пыли (максимальная допустимая толщина слоя пыли – 5 мм) должна быть выше температуры поверхности арматуры и её составных частей более чем на 75 К;
- при эксплуатации клапанов во взрывоопасных средах категории IIA, IIB, IIC требуется учитывать температуру окружающей среды и зависимость температурного класса от максимальной температуры рабочей среды, проходящей через изделие, указанную в таблице 2.

Таблица 2

Температурный класс по ГОСТ 32407-2013 (ISO/DIS 80079-36)	Максимально допустимая температура рабочей среды[1)]
T6	≤ 80 °C
T5	≤ 95 °C
T4	≤ 130 °C
T3	≤ 195 °C
T2	≤ 290 °C
T1	≤ 440 °C
-[2)]	≤ 600 °C

[1)] определяется потребителем и указывается в Паспорте на конкретную арматуру, поставляемом потребителю.
[2)] температура самовоспламенения газа или пара (минимальная температура воспламенения), с которым возможен контакт поверхностей арматуры и её составных частей, должна превышать максимальную температуру рабочей среды.

Специальные условия применения, обозначенные «X», должны быть отражены в сопроводительной документации.

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15 Appendix

15.1 Tightening torques, lubricants and tools

▶ AB 0100 tools, tightening torques and lubricants

15.2 Spare parts

1 Body
2 Bonnet (including guide bushing)
4 Seat
5 Plug (with plug stem)
8 Threaded bushing (packing nut)
11 Spring
12 Washer
13 Stud bolt
14 Body nut
15 Packing set
16 V-ring packing
17 Body gasket
19 Spacer
62 Flow divider ST 1
63 Tension ring[1)]
96 Flange bonnet (including guide bushing)
97 Flange
98 Central nut

[1)] Only in version with flow divider

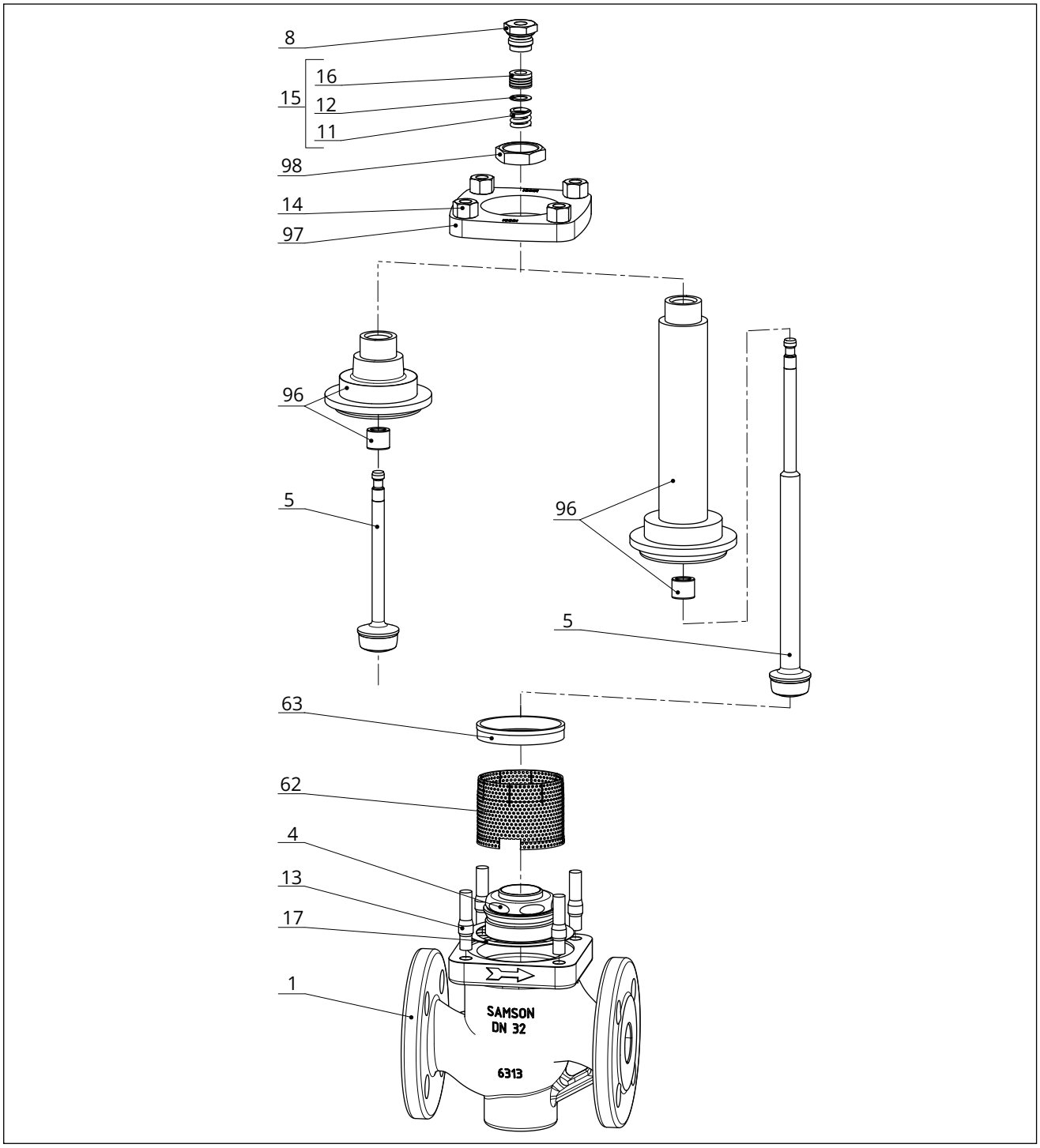


Fig. 20: *Type 3321 · DN 15 to 50/NPS ½ to 2*

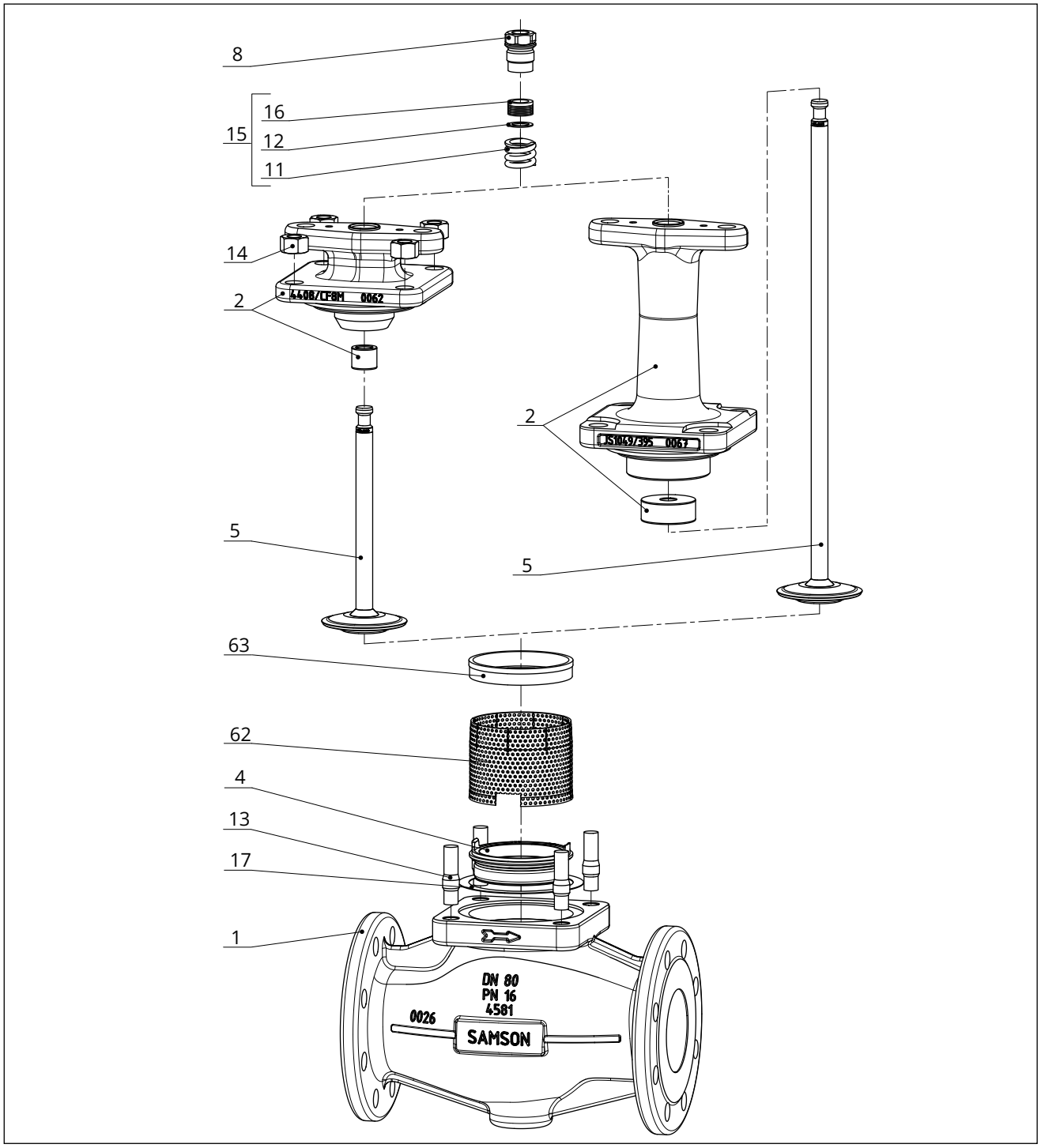


Fig. 21: *Type 3321 · DN 65 to 100/NPS 2½ to 4*

15.3 After-sales service

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

E-mail contact

You can reach our after-sales service at the following e-mail address:
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 in all SAMSON product catalogs or on our website (▶ www.samsongroup.com).

Required specifications

Please submit the following details:

- Order number and position number in the order
- Type, model number, nominal size and valve version
- Pressure and temperature of the process medium
- Flow rate in m^3/h or cu.ft/min
- Bench range of the actuator (e.g. 0.2 to 1 bar)
- Is a strainer installed?
- Installation drawing

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