MOUNTING AND OPERATING INSTRUCTIONS

EB 8111/8112 EN

Translation of original instructions

Type 3321 Valve

DIN and ANSI versions

Edition March 2020

Note on these mounting and operating instructions

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

➔ For the safe and proper use of these instructions, read them carefully and keep them for later reference.

➔ If you have any questions about these instructions, contact SAMSON's After-sales Service (aftersalesservice@samsongroup.com).

The mounting and operating instructions for the devices are included in the scope of delivery. The latest documentation is available on our website at ***www.samsongroup.com > Service & Support > Downloads > Documentation***.

Definition of signal words

⚠ DANGER

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

⚠ WARNING

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

NOTICE

Property damage message or malfunction

Note

Additional information

Tip

Recommended action

1 Safety instructions and measures

Intended use

The SAMSON Type 3321 Globe Valve in combination with an actuator (e.g. Type 3371 Pneumatic Actuator, Type 3372 Electropneumatic Actuator, Type 5824 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 other applications or conditions than specified, contact SAMSON.

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

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

Reasonably foreseeable misuse

The control valve is not suitable for the following applications:

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

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

– Use of non-original spare parts
– Performing service and repair work not described in these instructions

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 are to be observed. According to these mounting and operating instructions, trained personnel refers to individuals who are able to judge the work they are assigned to and recognize possible hazards due to their specialized training, their knowledge and experience as well as their knowledge of the applicable standards.

Personal protective equipment

We recommend checking the hazards posed by the process medium being used (e.g. ▶ GESTIS (CLP) hazardous substances database). Depending on the process medium and/or the activity, the protective equipment required includes:

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

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

Revisions and other modifications

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

Safety 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 actuators, the valve moves to a certain fail-safe position (see the 'Design and principle of operation' section) upon supply air or control signal failure.

- Type 3371 Pneumatic Actuator
- Type 3372 Electropneumatic Actuator
- Type 3374 Electric Actuator (version with fail-safe action only)

The fail-safe action of the actuator is the same as its direction of action and is specified on the nameplate of SAMSON actuators.

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. They must observe all hazard statements, warning and caution notes in these mounting and operating instructions.

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

Responsibilities of the operator

The operator is responsible for proper operation 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, the operator must ensure that operating personnel or third persons are not exposed to any danger.

Responsibilities of operating personnel

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

Referenced standards and regulations

The control valves comply with the requirements of the European Pressure Equipment Directive 2014/68/EU. Valves with a CE marking have a declaration of conformity, which includes information about the applied conformity assessment procedure. The 'Certificates' section contains this declaration of conformity.

According to the ignition risk assessment performed in accordance with EN 13463-1:2009, section 5.2, the non-electrical control valves do not have their own potential ignition source even in the rare incident of an operating fault. As a result, they do not fall within the scope of Directive 2014/34/EU.

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

Referenced documentation

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

– Mounting and operating instructions for:
  - ▶ EB 8317 for Type 3371 Actuator
  - ▶ EB 8313-X for Type 3372 Actuator
  - ▶ EB 8331-X for Type 3374 Actuator
  - ▶ EB 5824-X for Type 5824 Actuator
– Mounting and operating instructions for mounted valve accessories (positioner, solenoid valve etc.)
– ▶ AB 0100 for tools, tightening torques and lubricant

1.1 Notes on possible severe personal injury

⚠ DANGER

Risk of bursting in pressure equipment.

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

➔ Observe the maximum permissible pressure for valve and plant.

➔ Before starting any work on the control valve, depressurize all plant sections affected as well as the valve.

➔ Drain the process medium from all the plant sections concerned as well as the valve.

Risk of electric shock.

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

➔ Before performing any work on the device and before opening the device, disconnect the supply voltage and protect it against unintentional reconnection.

➔ Only use power interruption devices that are protected against unintentional reconnection of the power supply.

1.2 Notes on possible personal injury

⚠ WARNING

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

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

➔ Allow components and pipelines to cool down or heat up.

➔ Wear protective clothing and safety gloves.

Risk of hearing loss or deafness due to loud noise.

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

➔ Wear hearing protection when working near the valve.

⚠ WARNING

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

While the valve is operating, the pneumatic actuator may vent during closed-loop control or when the valve opens or closes.

➔ Install the control valve in such a way that vent holes are not located at eye level and the actuator does not vent at eye level in the work position.

➔ Use suitable silencers and vent plugs.

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

Risk of personal injury due to preloaded springs.

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

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

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 valve is in operation.

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

➔ Disconnect the supply voltage before performing any work on the control valve.

➔ 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 process medium can escape and, depending on its properties, may lead to personal injury, e.g. (chemical) burns.

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

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

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

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

➔ Keep all relevant markings and inscriptions on the device in a constantly legible state.

➔ Immediately renew damaged, missing or incorrect nameplates or labels.

1.3 Notes on possible property damage

! NOTICE

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

The electric control valves are designed for use according to regulations for low-voltage installations.

➔ Observe the permissible tolerances of the power supply. See associated actuator documentation.

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.

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

Observe the specified torques on tightening control valve components. Excessively tightened torques lead to parts wearing out quicker. Parts that are too loose may cause leakage.

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

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

Certain tools are required to work on the valve.

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

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

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

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

Risk of contamination of the process medium 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.

2 Markings on the device

2.1 Valve nameplate

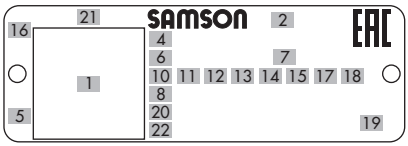


Fig. 2-1: *Inscriptions on the valve nameplate*

> **Note**
>
> *Fig. 2-1 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.*

Item	Inscription meaning
1	Data Matrix code
2	Type designation
4	Material
5	Month and year of manufacture
6	Valve 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**S · ANSI: **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: DIN: **D** · ANSI/JIS: **B**
	Version: **M**: mixing valve · **V**: flow-diverting valve

Item	Inscription meaning
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**: AC trim, versions 1 to 5 · **LK**: perforated plug · **LK1/LK2/LK3**: perforated plug with flow divider ST 1 to ST 3 · **MHC1**: multi-hole cage **CC1**: Combi Cage · **ZT1**: Zero Travel
16	Country of origin
17	PSA version: **PSA**
18	Cage/seat style: **CC**: clamped cage, clamped seat **SF**: suspended cage, flanged seat
19	CE marking
20	ID of the notified body
	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
21	Serial number
22	NE 53 (NAMUR Recommendation)

The valve nameplate (80) in valve sizes DN 15 to 50 or NPS ½ to 2 is affixed to the valve on the body flange (Fig. 2-2). The nameplate is affixed to the top of the bonnet in valve sizes DN 65 or NPS 2½ and larger (Fig. 2-3).

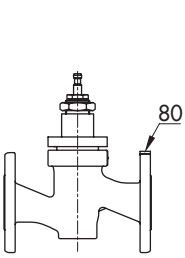


Fig. 2-2: *Nameplate on the body*

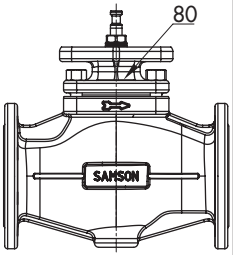


Fig. 2-3: *Nameplate on the bonnet*

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. Specifying this item number, you can contact us 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 Type 3321 Valve is a single-seated globe valve. This valve is preferably to be combined with the following SAMSON actuators:

- Type 3371 Pneumatic Actuator
- Type 3372 Electropneumatic Actuator
- Type 3374 Electric Actuator
- Type 5824 Electric Actuator

The seat (4) and plug with plug stem (5) are installed in the body (1). The plug stem is connected to the actuator stem (A3/A7) by a stem connector (A30/A31) and sealed by the spring-loaded packing (15).

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.

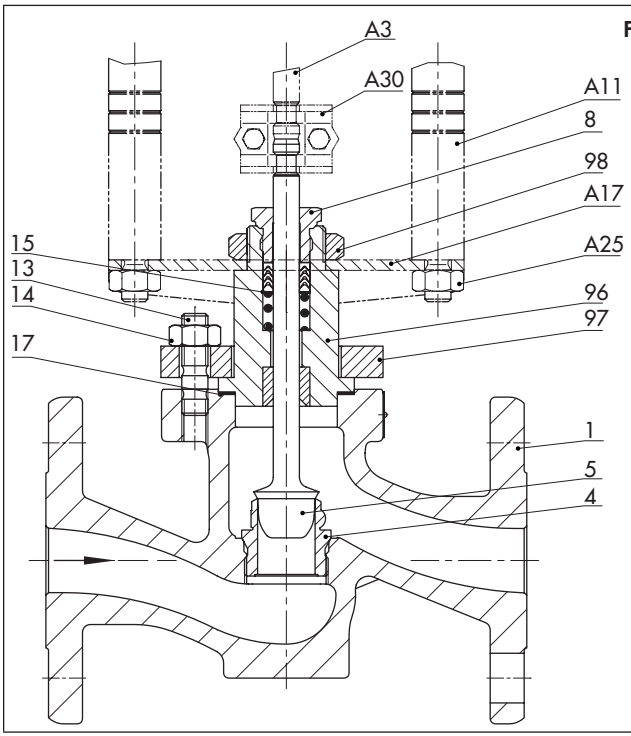
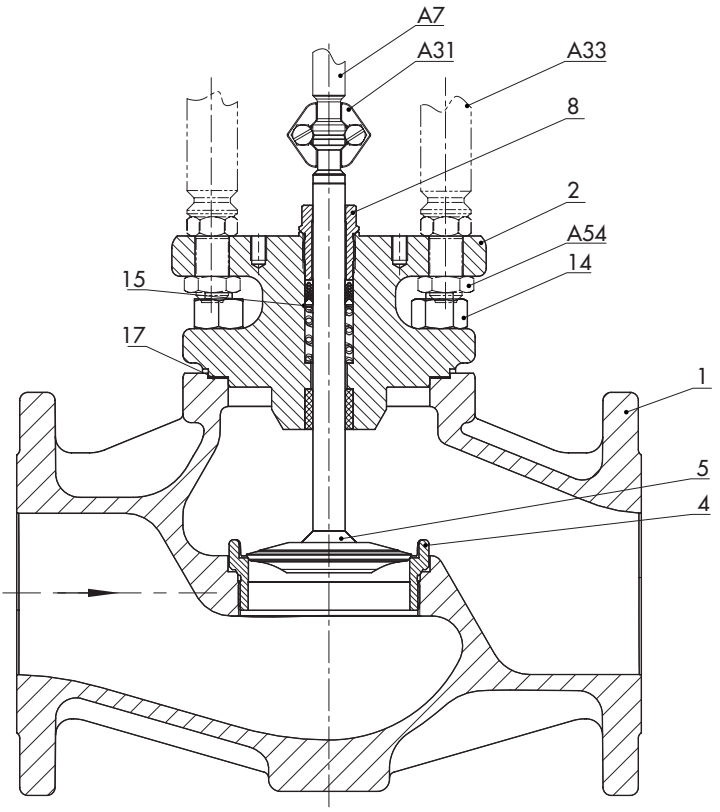


Fig. 3-1: *Type 3321 Valve, DN 15 to 50/NPS ½ to 2; mounting using a crossbeam and central nut (form B)*

Fig. 3-2: *Type 3321 Valve, DN 65 to 100/NPS 2½ to 4; mounting using rods (form C)*



Legend for Fig. 3-1 and Fig. 3-2

1 Body
2 Valve bonnet
4 Seat
5 Plug (with plug stem)
8 Threaded bushing (packing nut)
13 Bolt
14 Body nut
15 Packing
17 Body gasket
96 Flange bonnet
97 Flange
98 Central nut
A3/A7 Actuator stem
A11/A33 Rod
A17 Crossbeam
A25 Nut
A30/A31 Stem connector
A54 Nut

3.1 Fail-safe action

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

Upon supply voltage failure, the Type 3374 Electric Actuator (version with fail-safe action only) causes the valve to move to a certain fail-safe position.

Depending on how the compression springs are arranged in the SAMSON Type 3271 and Type 3277 Pneumatic Actuator, the valve has one of the following fail-safe positions:

Actuator stem extends (FA)

Upon supply voltage or air supply failure, the actuator stem extends causing the valve to close.

Actuator stem retracts (FE)

Upon supply voltage or air supply failure, the actuator stem extends causing the valve to open.

Tip

The direction of action of the electric and electropneumatic actuators is determined by the actuator version.
The direction of action of the Type 3371 Pneumatic Actuator can be reversed, if required. See the mounting and operating instructions ▶ EB 8317.

3.2 Versions

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 5824 Electric Actuator
- Type 3374 Electric Actuator
- Type 3372 Electropneumatic Actuator
- Type 3371 Pneumatic Actuator

3.3 Additional fittings

Strainers

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

Bypass and shut-off valves

We recommend installing a shut-off valve both upstream of the strainer and downstream of the 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. Refer to the instructions in the 'Installation' section.

Safety guard

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

Noise reduction

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

3.4 Valve accessories

Information Sheet ▶ T 8350

3.5 Technical data

The nameplates on the valve and actuator provide information on the control valve version. See the 'Markings on the device' section.

i ***Note***

More information is available in Data Sheets ▶ T 8111 and ▶ T 8112.

Compliance

The Type 3321 Valve bears both the CE and EAC marks of conformity.

CE EAC

Temperature range

Depending on the version, the control valve is designed for a temperature range from –10 to +220 °C (14 to 430 °F).

The use of an insulating section can extend the temperature range to +300 °C (+572 °F) depending on the properties of the materials used.

Leakage class

Depending on the version, the following leakage class applies:

Seal (12 on nameplate)	ME, ST	ME, ST	PT, PK
Leakage class (according to IEC 60534-4 or ANSI/FCI 70-2)	Min. IV	Min. IV	VI

Noise emissions

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

Dimensions and weights

The dimensions and weights for the DIN versions are listed in Table 3-1.

The dimensions and weights for the ANSI versions are listed in Table 3-2.

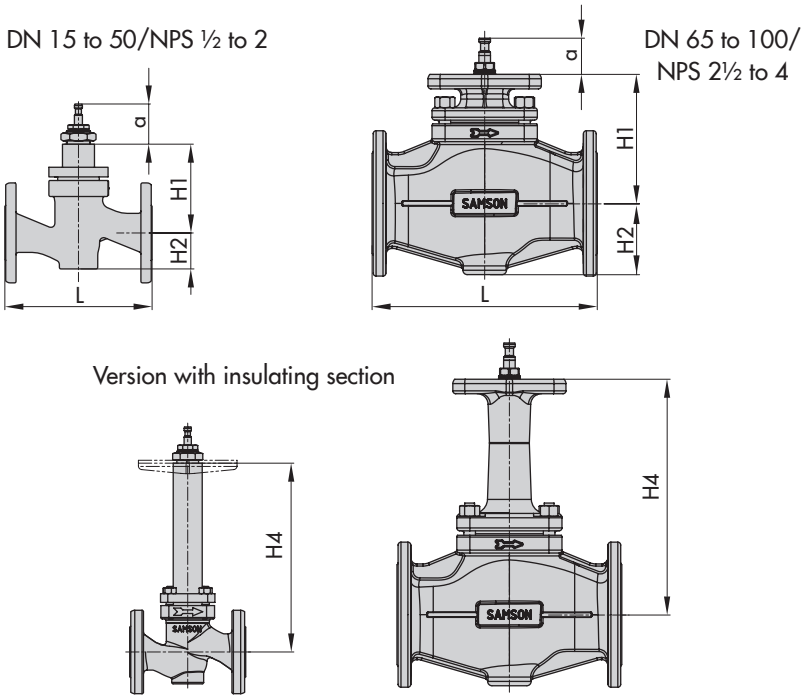
Table 3-1: *Dimensions and weights for Type 3321 Valve · DIN version*

Valve	DN	15	20	25	32	40	50	65	80	100
L	mm	130	150	160	180	200	230	290	310	350
Dimension A	mm	50								
H1	mm	110	110	110	115	115	115	178	178	201
H2	mm	40	40	40	72	72	72	98	98	118
H4 (with insulating section)	mm	261	261	261	265	265	265	325	325	325
Weight	kg	5	6	7	11	12	15	24	30	42
Weight (with insulating section)	kg	8	9	10	17	18	21	32	38	60

Table 3-2: *Dimensions and weights for Type 3321 Valve · ANSI version*

Valve size	NPS	½	¾	1	1½	2	2½	3	4
	DN	15	20	25	40	50	65	80	100
L Class 150	in	7.25	7.25	7.25	8.75	10.00	10.87	11.75	13.87
	mm	184	184	184	222	254	276	298	352
L Class 300	in	7.50	7.62	7.75	9.25	10.50	11.50	12.50	14.50
	mm	191	194	197	235	267	292	318	368
Dimension A	in	1.96							
	mm	50							
H1	in	4.3	4.3	4.3	4.5	4.5	7.0	7.0	7.9
	mm	110	110	110	115	115	178	178	201
H2	in	1.6	1.6	1.6	2.8	2.8	3.9	3.9	4.4
	mm	40	40	40	72	72	98	98	113
H4 (with insulating section)	in	10.3	10.3	10.3	10.4	10.4	12.8	12.8	12.8
	mm	261	261	261	265	265	325	325	325
Weight	lbs	14	16	18	27	36	58	71	97
	kg	6	7	8	12	16	26	32	44
Weight (with insulating section)	lbs	19.8	22.1	24.3	39.7	48.5	75	88.2	136.7
	kg	9	10	11	18	22	34	40	62

Dimensional drawings



Note

Refer to the following data sheets for more dimensions and weights:

▶ *T 8111* and ▶ *T 8112*

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

▶ *T 8313 for Type 3372 Electropneumatic Actuator*

▶ *T 8317 for Type 3371 Pneumatic Actuator*

▶ *T 5824 for Type 5824 Electric Actuator*

▶ *T 8331 for Type 3374 Electric Actuator*

4 Shipment and on-site transport

The work described in this section is only to be performed by personnel qualified for the assignment accordingly.

4.1 Accepting the delivered goods

After receiving the shipment, proceed as follows:

1. Check the scope of delivery. Check that the specifications on the valve nameplate match the specifications in the delivery note. See the 'Markings on the device' section for nameplate details.
2. Check the shipment for transportation damage. Report any damage to SAMSON and the forwarding agent (refer to delivery note).
3. Determine the weight and dimensions of the units to be lifted and transported in order to select the appropriate lifting equipment and lifting accessories, if required. Refer to the transport documents and the 'Technical data' section.

4.2 Removing the packaging from the valve

Observe the following sequence:

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

➔ Leave the control valve in its transport container or on the pallet to transport it on site.

➔ Do not remove the protective caps from the inlet and outlet until immediately before installing the valve into the pipeline. They prevent foreign particles from entering the valve.

➔ Dispose and recycle the packaging in accordance with the local regulations.

4.3 Transporting and lifting the valve

⚠ DANGER

Risk due to suspended loads falling.

➔ *Stay clear of suspended or moving loads.*

➔ *Close off and secure the transport paths.*

⚠ WARNING

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

➔ *Only use approved lifting equipment and accessories whose minimum lifting capacity is higher than the weight of the valve (including actuator and packaging, if applicable).*

⚠ WARNING

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

➔ *Observe the valve's center of gravity.*

➔ *Secure the valve against tipping over or turning.*

⚠ WARNING

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

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

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

NOTICE

Risk of valve damage due to incorrectly attached slings.

➔ *When lifting the control valve, make sure that the slings attached to the valve body bear the entire load.*

➔ *Do not attach load-bearing slings to the actuator, handwheel or any other parts.*

➔ *Observe lifting instructions (see section 4.3.2).*

Tip

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

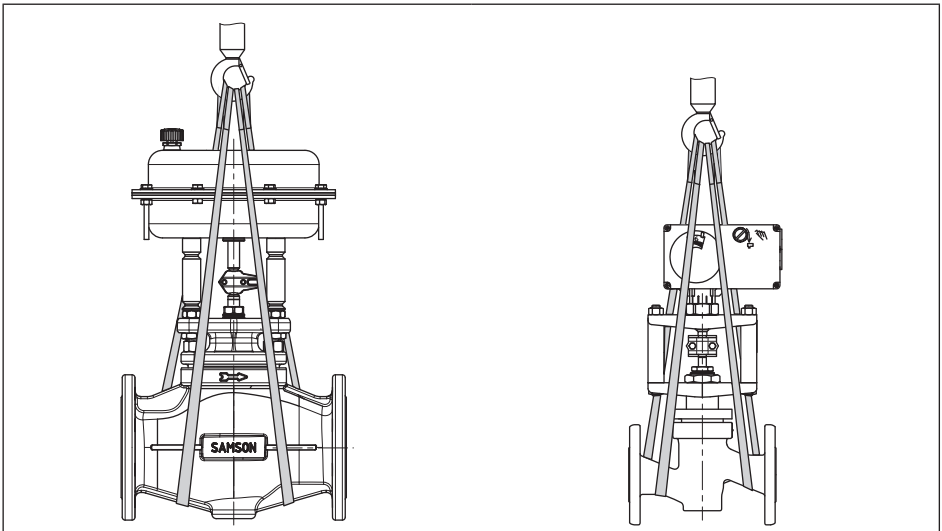


Fig. 4-1: *Lifting points on the control valve*

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.

4.3.2 Lifting the valve

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

Lifting instructions

– Use a hook with safety latch (see Fig. 4-1) to secure the slings from slipping off the hook during lifting and transporting.
– Secure slings against slipping.
– Make sure the slings can be removed from the valve once it has been installed into the pipeline.
– Prevent the control valve from tilting or tipping over.
– Do not leave loads suspended when interrupting work for longer periods of time.
– Make sure that the axis of the pipeline is always horizontal during lifting and the axis of the plug stem is always vertical.

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 (see Fig. 4-1).
2. Carefully lift the control valve. Check whether the lifting equipment and accessories can bear the weight.
3. Move the control valve at an even pace to the site of installation.
4. Install the valve into the pipeline (see the 'Installation' section).
5. After installation in the pipeline, check whether the flanges are bolted tight and the valve in the pipeline holds.
6. Remove slings.

4.4 Storing the valve

NOTICE

Risk of valve damage due to improper storage.

➔ *Observe the storage instructions.*

➔ *Avoid long storage times.*

➔ *Contact SAMSON in case of different storage conditions or long storage periods.*

Note

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

Storage instructions

– Protect the control valve against external influences (e.g. impact).

– 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.

– We recommend a storage temperature of 15 °C (59 °F) for elastomers.

– Store elastomers away from lubricants, chemicals, solutions and fuels.

Tip

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

5 Installation

The work described in this section is only to be performed by personnel qualified for the assignment accordingly.

5.1 Installation conditions

Work position

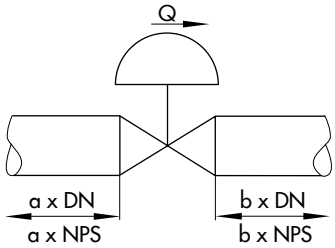
The work position for the control valve is the front view looking onto the operating controls (including valve accessories).

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 5-1) vary depending on several variables and process conditions and are intended as recommendations. Contact SAMSON if the

Table 5-1: *Inlet and outlet lengths*



Q Flow rate
a Inlet length
b Outlet length

State of process medium	Valve conditions	Inlet length a	Outlet length b
Gas	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
	Saturated steam (percentage of condensate > 5 %)	2	20
Liquid	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 saturated steam

lengths are significantly shorter than the recommended lengths.

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

➔ Observe the recommended inlet and outlet lengths (see Table 5-1). Contact SAMSON if the valve conditions or states of the medium process deviate.

➔ Install the valve free of stress and with the least amount of vibrations as possible. Read Mounting position and Support or suspension in this section.

➔ Install the valve allowing sufficient space to remove the actuator and valve or to perform service and repair work on them.

Mounting position

Generally, we recommend 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 or suspension

i ***Note***

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

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

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

Valve accessories

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

Vent plugs

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

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

5.2 Preparation for installation

Before installation, make sure the following conditions are met:

– The valve is clean.
– The valve and all valve accessories (including piping) are not damaged.
– The valve data on the nameplate (type designation, valve size, material, pressure rating and temperature range) match the plant conditions (size and pressure rating of the pipeline, medium temperature etc.). See the 'Markings on the device' section for nameplate details.

– The requested or required additional pipe fittings (see the 'Additional fittings' section) 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 with insulating section up to the bonnet flange of the valve body for medium temperatures below 0 °C (32 °F) and above 220 °C (428 °F). If the insulating section is insulated, it will not function properly.*

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 (▶ AB 0100). Components may loosen during transport.

5.3 Mounting and installing the device

Proceed as follows for assembly and to prepare for start-up of the valve.

NOTICE

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

Observe the specified torques on tightening control valve components. Excessively tightened torques lead to parts wearing out quicker. Parts that are too loose may cause leakage.

➔ *Observe the specified tightening torques (▶ AB 0100).*

NOTICE

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

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

5.3.1 Mounting the actuator onto the valve

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

a) Pneumatic or electropneumatic actuator

There are two different types of attachment to mount the pneumatic or electropneumatic actuator onto the valve depending on the version (valve size etc.): mounting using crossbeam or mounting using rods (see Table 5-2).

Mounting using crossbeam and central nut

When the actuator is mounted to the valve using a crossbeam (form B, Fig. 5-1), the actuator is fastened to the valve bonnet using a central nut.

Mounting using rods

When the actuator is mounted using rods (form C, Fig. 5-2), 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.

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.

Table 5-2: *Possible combinations and types of attachment*

Actuator		Type of attachment	
Type 3371	Actuator area	120 cm²	350 cm²
For valve 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 valve size	DN 15 to 50/NPS ½ to 2	Form B	–
	DN 65 to 100/NPS 2½ to 4	–	Form C
Type 3374		Form-fit attachment using stem connector and yoke	
Type 5824		Form-fit attachment using stem connector and yoke	

Fig. 5-1: *Mounting using crossbeam and central nut (form B attachment)*

Type 3321-PP

Type 3321-IP

Type 3321-E1

Type 3321-E3

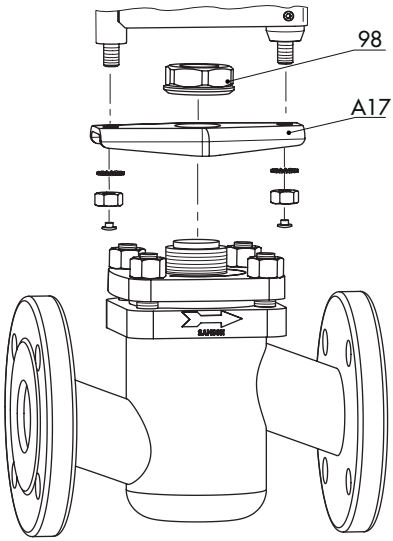
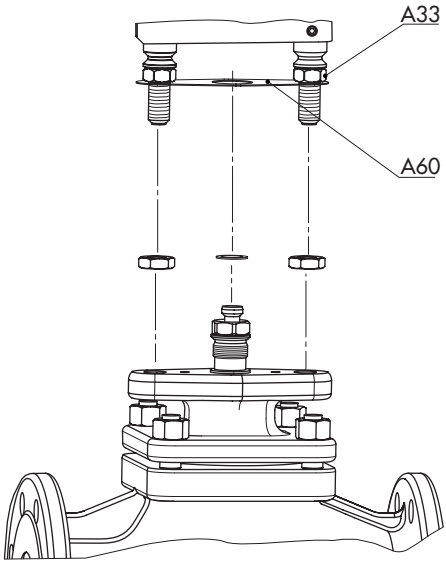


Fig. 5-2: *Mounting using rods (form C attachment)*

Type 3321-PP

Type 3321-IP



Legend for Fig. 5-1 and Fig. 5-2

98	Central nut
A17	Crossbeam
A33	Rod
A60	Plate

5.3.2 Installing the valve into the pipeline

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 the 'Lifting the valve' section). 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.

5.4 Testing the installed valve

⚠ DANGER

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

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

Before working on the control valve:

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

➔ *Drain the process medium from all the plant sections concerned as well as the valve.*

⚠ DANGER

Risk of electric shock.

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

➔ *Before performing any work on the device and before opening the device, disconnect the supply voltage and protect it against unintentional reconnection.*

➔ *Only use power interruption devices that are protected against unintentional reconnection of the power supply.*

⚠ WARNING

Risk of hearing loss or deafness due to loud noise.

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

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

⚠ WARNING

Crush hazard arising from actuator and plug stem moving.

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

➔ *Before working on the control valve, disconnect and lock the pneumatic air supply as well as the control signal.*
➔ *Disconnect the supply voltage before performing any work on the control valve.*
➔ *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 from pneumatically operated components.

While the valve is operating, the actuator or valve accessories may vent during closed-loop control or when the valve opens or closes.

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

⚠ WARNING

Risk of personal injury due to preloaded springs.

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

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

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

5.4.1 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 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.

5.4.2 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.

5.4.3 Fail-safe position

➔ Shut off the signal pressure line.

➔ Check whether the valve moves to the fail-safe position (see the 'Design and principle of operation' section).

5.4.4 Pressure test

The plant operator is responsible for performing the pressure test.

Tip

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

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

– Retract the plug stem to open the valve.

– Observe the maximum permissible pressure for both the valve and plant.

6 Start-up

The work described in this section is only to be performed by personnel qualified for the assignment accordingly.

⚠ WARNING

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

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

➔ *Allow components and pipelines to cool down or heat up.*

➔ *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 brief loud noise may occur through the sudden venting of the pneumatic actuator (see 'Fail-safe position') or pneumatic valve accessories not fitted with noise-reducing fittings. Both can damage hearing.

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

⚠ WARNING

Crush hazard arising from actuator and plug stem moving.

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

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

➔ *Disconnect the supply voltage before performing any work on the control valve.*

➔ *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 from pneumatically operated components.

While the valve is operating, the actuator or valve accessories may vent during closed-loop control or when the valve opens or closes.

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

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

– The valve is properly installed into the pipeline (see the 'Installation' section).

– The leak and function tests have been completed successfully (see the 'Testing the installed valve' section).

– The prevailing conditions in the plant section concerned meet the valve sizing requirements (see information under 'Intended use' in the 'Safety instructions and measures' section).

Start-up/putting the valve 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 resulting high velocities that can damage the valve.
3. Check the valve to ensure it functions properly.

7 Operation

Immediately after completing start-up or putting the valve back into operation (see the 'Start-up' section), the valve is ready for use.

⚠ WARNING

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

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

➔ *Allow components and pipelines to cool down or heat up.*

➔ *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 fittings. Both can damage hearing.

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

⚠ WARNING

Crush hazard arising from actuator and plug stem moving.

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

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

➔ *Disconnect the supply voltage before performing any work on the control valve.*

➔ *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 from pneumatically operated components.

While the valve is operating, the actuator or valve accessories may vent during closed-loop control or when the valve opens or closes.

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

8 Malfunctions

Read hazard statements, warnings and caution notes in the 'Safety instructions and measures' section.

8.1 Troubleshooting

Malfunction	Possible reasons	Recommended action
Actuator and plug stem does not move on demand.	Actuator is blocked.	Check attachment. Unblock the actuator. **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. Disconnect the supply voltage. Before unblocking the actuator and piston stem, release any stored energy in the actuator (e.g. spring compression). See associated actuator documentation.
	Pneumatic/electro-pneumatic actuators: diaphragm in the actuator defective	See associated actuator documentation.
	Signal pressure too low	Check the signal pressure. Check the signal pressure line for leakage.
	No or incorrect supply voltage connected.	Check the supply voltage and connections.
Actuator and plug stem does not stroke through the entire range.	Signal pressure too low	Check the signal pressure. Check the signal pressure line for leakage.
	No or incorrect supply voltage connected.	Check the supply voltage and connections.
	Incorrect setting of valve accessories	Check the settings of the valve accessories.

Malfunction	Possible reasons	Recommended action
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 seat and plug (see the 'Servicing' section) or contact our after-sales service.
The valve leaks to the atmosphere (fugitive emissions).	Defective packing	Replace packing (see the 'Servicing' section) or contact our after-sales service.
	Flange joint loose or gasket worn out	Check the flange joint. Replace gasket at the flanged joint (see the 'Servicing' section) or contact our after-sales service.

i ***Note***

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

8.2 Emergency action

The plant operator is responsible for emergency action to be taken in the plant.

In the event of a valve malfunction:

1. Close the shut-off valves upstream and downstream of the control valve to stop the process medium from flowing through the valve.
2. Perform troubleshooting (see section 8.1).
3. Rectify those malfunctions that can be remedied based on the instructions provided here. Contact our after-sales service in all other cases.

Putting the valve back into operation after a malfunction

See the 'Start-up' section.

9 Servicing

The work described in this section is only to be performed by personnel qualified for the assignment accordingly.

The following documents are also necessary for servicing the valve:

– Mounting and operating instructions for the mounted actuator, e.g. ▶ EB 8313-X for Type 3372 Actuator
  ▶ EB 8317 for Type 3371 Actuator
  ▶ EB 5824-X for Type 5824 Actuator
  ▶ EB 8331-X for Type 3374 Actuator
– ▶ AB 0100 for tools, tightening torques and lubricant

⚠ DANGER

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

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

Before working on the control valve:

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

➔ *Drain the process medium from all the plant sections concerned as well as the valve.*

⚠ DANGER

Risk of electric shock.

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

➔ *Before performing any work on the device and before opening the device, disconnect the supply voltage and protect it against unintentional reconnection.*

➔ *Only use power interruption devices that are protected against unintentional reconnection of the power supply.*

⚠ WARNING

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

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

➔ *Allow components and pipelines to cool down or heat up.*

➔ *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 fittings. Both can damage hearing.

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

⚠ WARNING

Crush hazard arising from actuator and plug stem moving.

- ➔ *Do not insert hands or finger into the yoke while the valve is in operation.*
- ➔ *Before working on the control valve, disconnect and lock the pneumatic air supply as well as the control signal.*
- ➔ *Disconnect the supply voltage before performing any work on the control valve.*
- ➔ *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 from pneumatically operated components.

While the valve is operating, the actuator or valve accessories may vent during closed-loop control or when the valve opens or closes.

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

⚠ WARNING

Risk of personal injury due to preloaded springs.

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

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

⚠ WARNING

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

While working on the valve, residual process medium can escape and, depending on its properties, may lead to personal injury, e.g. (chemical) burns.

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

❗ NOTICE

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

Observe the specified torques on tightening control valve components. Excessively tightened torques lead to parts wearing out quicker. Parts that are too loose may cause leakage.

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

NOTICE

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

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

NOTICE

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

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

Note

The control valve was checked by SAMSON before it left the factory.

– *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 valve at certain intervals to prevent a possible failure before it can occur. 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.

We recommend the following inspection and testing which can be performed while the process is running:

Inspection and testing	Action to be taken in the event of a negative result:
Check the markings, labels and nameplates on the 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.
Check the pipe connections and gaskets on the valve and actuator for leakage.	Check the bolted joint (tightening torque).
	Replace the gasket on the flanged joint as described in section 9.4.1.
	Replace the packing. See section 9.4.2.

Inspection and testing	Action to be taken in the event of a negative result:
Check the valve's seat leakage.	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.
Check the valve for external damage (e.g. corrosion).	Remove any damage immediately. If necessary, put the control valve out of operation (see the 'Decommissioning' section).
Check the valve accessories to ensure they are mounted properly.	Tighten the connections of the valve accessories.
Check to ensure that the actuator and plug stem move smoothly.	Unblock a blocked actuator and plug stem. **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. Disconnect the supply voltage. Before unblocking the actuator and piston stem, release any stored energy in the actuator (e.g. spring compression). See associated actuator documentation.
If possible, check the valve's fail-safe position by briefly interrupting the air supply.	Put the control valve out of operation (see the 'Decommissioning' section). Identify the cause for the malfunction and rectify it (see the 'Troubleshooting' section).

9.2 Preparing the valve for service work

1. Lay out the necessary material and tools to have them ready for the service work.
2. Put the control valve out of operation (see the 'Decommissioning' section).
3. Remove the actuator from the valve. See associated actuator documentation.

i ***Note***

How to remove or mount the actuator for service work depends on the type of attachment (form B or form C, see the 'Mounting the actuator onto the valve' section).
To remove the actuator (form B) from the valve, the central nut (98) must be loosened.

Note

To remove a pneumatic 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). Afterwards, the signal pressure must be removed and the air supply disconnected again and locked.

Tip

We recommend removing the valve from the pipeline before performing any service work (see the 'Removal' section).

The following service work can be performed after preparation is completed:

– Replace the gaskets as described in section 9.4.1.
– Replace the packing (see section 9.4.2)
– Replace the seat and plug (see section 9.4.3)

9.3 Mounting the valve after service work

1. Mount actuator. See associated actuator documentation and in the 'Installation' section.

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 the 'Installation' section).
4. Put the control valve back into operation (see the 'Start-up' section). Make sure the requirements and conditions for start-up or putting the valve back into operation are met.

9.4 Service work

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

➔ After all service work is completed, check the control valve before putting it back into operation (see 'Testing the installed valve' in the 'Installation' section).

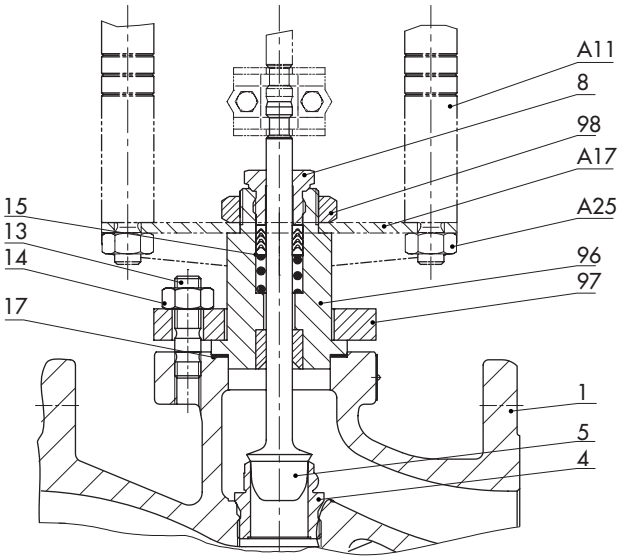


Fig. 9-1: *Form B attachment (mounting using a central nut)*

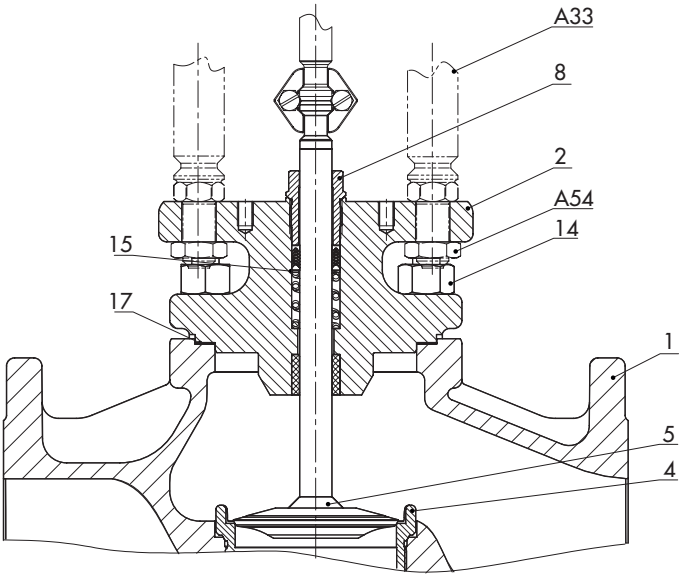


Fig. 9-2: *Form C attachment (mounting using rods)*

1 Body
2 Valve bonnet
4 Seat
5 Plug (with plug stem)
8 Threaded bushing (packing nut)
13 Bolt
14 Body nut
15 Packing
17 Body gasket
96 Flange bonnet
97 Flange
98 Central nut
A11 Rod
A17 Crossbeam
A25 Nut
A33 Rod
A54 Nut

9.4.1 Replacing the gasket

a) For mounting using cross-beam 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. Remove the gasket (17). Carefully clean the sealing faces in the valve body (1) and on the flange bonnet (96).
4. Insert a new gasket (17) into the body.
5. Place the flange bonnet (96) and the flange (97) over the studs (13) onto the body.
6. Press the plug (5) firmly into the seat (4), while fastening down the flange bonnet (96) with the body nuts (14). Tighten the nuts gradually in a crisscross 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 flange bonnet (2).
4. Insert a new gasket (17) into the body.
5. Place the valve bonnet (2) and plug with plug stem (5) onto the body.
6. Press the plug (5) firmly into the seat (4), while fastening down the valve bonnet (2) with the body nuts (14). Tighten the nuts gradually in a crisscross pattern. Observe tightening torques.

9.4.2 Replacing the packing

i ***Note***

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

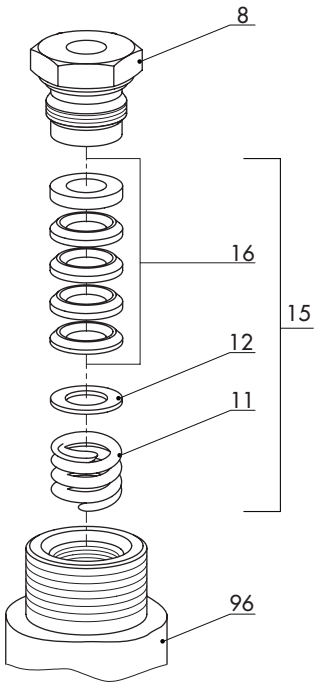
a) For mounting using cross-beam and central nut (form B)

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 the packing parts and to 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. 9-3).
11. Press the plug (5) firmly into the seat (4), while fastening down the flange bonnet (96) with the body nuts (14). Tighten the 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 the packing parts and to 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. 9-3).
11. Press the plug (5) firmly into the seat (4), while fastening down the valve bonnet (2) with the body nuts (14). Tighten the nuts gradually in a crisscross pattern. Observe tightening torques.
12. Screw in the threaded bushing (8) and tighten it. Observe tightening torques.



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

Fig. 9-3: *Packing*

9.4.3 Replacing the seat and plug

NOTICE

Risk of damage to the facing of the seat and plug due to incorrect service or repair.

➔ *Always replace both the seat and plug.*

Tip

When replacing the seat and plug, we also recommend replacing the gasket and packing. See sections 9.4.1 and 9.4.2.

a) For mounting using cross-beam 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 the sealing cone of the new seat.
8. Screw in the seat (4). Observe tightening torques.
9. Apply a suitable lubricant to all the packing parts and to the new plug stem (5). We recommend replacing the packing as well. See section 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. 9-3).
13. Press the plug (5) firmly into the seat (4), while fastening down the flange bonnet (96) with the body nuts (14). Tighten the 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 as described in section 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 the sealing cone of the new seat.
9. Screw in the seat (4). Observe tightening torques.
10. Apply a suitable lubricant to all the packing parts and to the new plug stem (5). We recommend replacing the packing as well. See section 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. 9-3).
14. Press the plug (5) firmly into the seat (4), while fastening down the valve bonnet (2) with the body nuts (14). Tighten the 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 Annex for details on spare parts.

Lubricant

See document ▶ AB 0100 for details on suitable lubricants.

Tools

See document ▶ AB 0100 for details on suitable tools.

10 Decommissioning

The work described in this section is only to be performed by personnel qualified for the assignment accordingly.

⚠ DANGER

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

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

Before working on the control valve:

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

⚠ DANGER

Risk of electric shock.

- ➔ *Do not remove any covers to perform adjustment work on live parts.*
- ➔ *Before performing any work on the device and before opening the device, disconnect the supply voltage and protect it against unintentional reconnection.*
- ➔ *Only use power interruption devices that are protected against unintentional reconnection of the power supply.*

⚠ WARNING

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

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

- ➔ *Allow components and pipelines to cool down or heat up.*
- ➔ *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 fittings. Both can damage hearing.

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

⚠ WARNING

Crush hazard arising from actuator and plug stem moving.

- ➔ *Do not insert hands or finger into the yoke while the valve is in operation.*
- ➔ *Before working on the control valve, disconnect and lock the pneumatic air supply as well as the control signal.*
- ➔ *Disconnect the supply voltage before performing any work on the control valve.*

➔ *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 from pneumatically operated components.

While the valve is operating, the actuator or valve accessories may vent during closed-loop control or when the valve opens or closes.

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

⚠ WARNING

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

While working on the valve, residual process medium can escape and, depending on its properties, may lead to personal injury, e.g. (chemical) burns.

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

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

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

11 Removal

The work described in this section is only to be performed by personnel qualified for the assignment accordingly.

⚠ WARNING

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

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

➔ *Allow components and pipelines to cool down or heat up.*

➔ *Wear protective clothing and safety gloves.*

⚠ WARNING

Crush hazard arising from actuator and plug stem moving.

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

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

➔ *Disconnect the supply voltage before performing any work on the control valve.*

➔ *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 process medium can escape and, depending on its properties, may lead to personal injury, e.g. (chemical) burns.

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

⚠ WARNING

Risk of personal injury due to preloaded springs.

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

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

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

– The control valve is put out of operation (see the 'Decommissioning' section).

11.1 Removing the valve from the pipeline

1. Support the valve to hold it in place when separated from the pipeline (see the 'Shipment and on-site transport' section).
2. Unbolt the flange joint.

3. Remove the valve from the pipeline (see the 'Shipment and on-site transport' section).

11.2 Removing the actuator from the valve

See associated actuator documentation.

12 Repairs

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

NOTICE

Risk of valve damage due to incorrect repair work.

➔ *Do not perform any repair work on your own.*

➔ *Contact SAMSON's After-sales Service for repair work.*

12.1 Returning devices to SAMSON

Defective devices can be returned to SAMSON for repair.

Proceed as follows to return devices:

1. Exceptions apply concerning some special device models
   ▶ *www.samsongroup.com > Service & Support > After-sales Service*
2. Send an e-mail ▶ retouren@samsongroup.com to register the return shipment including the following information:
   - Type
   - Article no.
   - Configuration ID
   - Original order
   - Completed Declaration on Contamination, which can be downloaded from our website at ▶ *www.samsongroup.com > Service & Support > After-sales Service.*

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

Note

Further information on returned devices and how they are handled can be found at ▶ www.samsongroup.com > Service & Support > After-sales Service.

13 Disposal

➔ Observe local, national and international refuse regulations.

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

14 Certificates

The following declarations are included on the next pages:

– Declaration of conformity in compliance with Pressure Equipment Directive 2014/68/EU on pages 14-2 to 14-5

SAMSON REGULATION S.A.S.

DECLARATION UE DE CONFORMITE
EU DECLARATION OF CONFORMITY
EU-KONFORMITÄTSERKLÄRUNG

DC014
2019-02

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:
SAMSON REGULATION SAS erklärt in alleiniger Verantwortung für folgende Produkte:

Appareils / Devices / Geräte	Type / Typ	Exécution / Version / Ausführung
Vanne de décharge / back pressure reducing valve / Überströmventil	2371-0	DIN & ANSI - corps en acier forgé / body of forged steel / Gehäuse Schmiedestahl DN 32 – 100 [1] $P_{max\ T=20°C}$ 10 bar NPS 1 ¼ – 4 [1] $P_{max\ T=70°F}$ 150 psi Tout type de fluides / all fluids / alle Fluide
Détendeur alimentaire / pressure reducing valve / Druckminderventil	2371-1	
Vanne de régulation passage droit / globe valve / Durchgangsventil	3241	DIN - corps en fonte grise / body of cast iron / Gehäuse Grauguss: GJL-250 DN 65 – 150 [1] PN16 Fluides groupe 2 / fluids group 2 / Fluide Gruppe 2 [2]
	3241	DIN - corps en fonte sphéroïdale / body of spheroidal graphite iron / Gehäuse Sphäroguss : GJS-400-18-LT DN 50 [1] PN25 Fluides groupe 2 / fluids group 2 / Fluide Gruppe 2 [2]
	3241	ANSI - corps en fonte grise / body of cast iron / Gehäuse Grauguss: A126 B Cl 250 NPS 1 ½ - 3 [1] ; Cl 125 NPS 2 ½ - 6 [1] Fluides groupe 2 / fluids group 2 / Fluide Gruppe 2 [2]
Vanne de régulation 3 voies / 3-way Valve / Drei-Wege-Stellventil	3244	DIN - corps en fonte grise / body of cast iron / Gehäuse Grauguss: GJL-250 DN 65 – 150 [1] PN16 Fluides groupe 2 / fluids group 2 / Fluide Gruppe 2 [2]
	3244	DIN - corps en fonte sphéroïdale / body of spheroidal graphite iron / Gehäuse Sphäroguss : GJS-400-18-LT DN 50 [1] PN25 Fluides groupe 2 / fluids group 2 / Fluide Gruppe 2 [2]
	3244	DIN & ANSI - corps en acier moulé / body of cast steel / Gehäuse Gussstahl DN 40 – 100 [1] NPS 1 1/2 - 4 [1] Fluides groupe 2 / fluids group 2 / Fluide Gruppe 2 [2]
Vanne aseptique / Aseptic valve / Aseptisches Ventil	3249	DIN & ANSI - corps en acier forgé / body of forged steel / Gehäuse Schmiedestahl DN 32 – 100 [1] $P_{max\ T=20°C}$ 10 bar NPS 1 ¼ – 4 [1] $P_{max\ T=70°F}$ 150 psi Tout type de fluides / all fluids / alle Fluide
Vanne de régulation passage droit / globe valve / Durchgangsventil	3321	DIN - corps en fonte grise / body of cast iron / Gehäuse Grauguss: GJL-250 DN 65 – 100 [1] PN16 Fluides groupe 2 / fluids group 2 / Fluide Gruppe 2 [2]
	3321	ANSI - corps en fonte grise / body of cast iron / Gehäuse Grauguss: A126 B Cl 125 NPS 2 ½ - 4 [1] Fluides groupe 2 / fluids group 2 / Fluide Gruppe 2 [2]
Vanne de régulation 3 voies / 3-way Valve / Drei-Wege-Stellventil	3323	DIN - corps en fonte grise / body of cast iron / Gehäuse Grauguss: GJL-250 DN 65 – 100 [1] PN16 Fluides groupe 2 / fluids group 2 / Fluide Gruppe 2 [2]
	3323	ANSI - corps en fonte grise / body of cast iron / Gehäuse Grauguss: A126 B Cl 125 NPS 2 ½ - 4 [1] Fluides groupe 2 / fluids group 2 / Fluide Gruppe 2 [2]
Vanne à membrane / Diaphragm valve / Membran-Ventil	3345	DIN & ANSI corps en fonte sphéroïdale, aciers moulé & forgé / body of spheroidal graphite iron, cast & forged steel / Gehäuse Sphäroguss, Gussstahl & Schmiedestahl DN 32 – 100 [1] NPS 1 1/4 – 4 [1] Tout type de fluides / all fluids / alle Fluide
Vanne alimentaire / Sanitary valve / Hygienisches Ventil	3347	DIN & ANSI corps en aciers moulé & forgé / body of, cast & forged steel / Gehäuse Gussstahl & Schmiedestahl DN 65 – 125 [1] $P_{max\ T=20°C}$ 16 bar NPS 2 1/2 – 5 [1] $P_{max\ T=70°F}$ 240 psi Fluides groupe 2 / fluids group 2 / Fluide Gruppe 2 [2]
Vanne aseptique / Aseptic valve / Aseptisches Ventil	3349	DIN & ANSI - corps en acier forgé / body of forged steel / Gehäuse Schmiedestahl DN 32 – 100 [1] $P_{max\ T=20°C}$ 10 bar NPS 1 ¼ – 4 [1] $P_{max\ T=70°F}$ 150 psi Tout type de fluides / all fluids / alle Fluide
Vanne Tout ou Rien / On-Off Valve / Auf-Zu Ventil	3351	DIN - corps en fonte grise / body of cast iron / Gehäuse Grauguss: GJL-250 DN 65 – 150 [1] PN16 Fluides groupe 2 / fluids group 2 / Fluide Gruppe 2 [2]
	3351	DIN - corps en fonte sphéroïdale / body of spheroidal graphite iron / Gehäuse Sphäroguss : GJS-400-18-LT DN 50 [1] PN25 Fluides groupe 2 / fluids group 2 / Fluide Gruppe 2 [2]
	3351	ANSI - corps en fonte grise / body of cast iron / Gehäuse Grauguss: A126 B Cl 250 NPS 1 ½ - 3 [1] ; Cl 125 NPS 2 ½ - 6 [1] Fluides groupe 2 / fluids group 2 / Fluide Gruppe 2 [2]
Bride de mesure / Measure flange / Messflansch	5090	DIN & ANSI - corps en acier forgé / body of forged steel / Gehäuse Schmiedestahl DN 40 – 500 [1] NPS 1.5 – 20 [1] [2]
Tube de mesure / Measure tube / Messrohr	5091	DIN & ANSI - corps en acier forgé / body of forged steel / Gehäuse Schmiedestahl DN 40 – 500 [1] NPS 1.5 – 20 [1] [2]

[1] les dimensions plus petites répondent à l'article 4 point 3 / smaller dimensions correspond to Article 4 (3) / Die kleineren Abmessungen entsprechen Artikel 4 Nummer 3.

[2] Tuyauterie visée à l'article 4 points 1.c) i) et ii) / Acc. to piping article 4 paragraphs 1.c) i) and ii) / Rohrleitung Artikel 4 Nummer 1.c) i) und ii)

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Société par actions simplifiée au capital de 10 000 000 € • Siège social : Vaulx-en-Velin
N°SIRET: RCS Lyon B 788 165 603 00127 • N°de TVA: FR 86 788 165 603 • Code APE 2814Z

BNP Paribas N°compte 0002200215245 • Banque 3000401857
IBAN FR7630004018570002200215245 • BIC (code SWIFT) BNPAFRPPVBE

Crédit Lyonnais N°compte 0000060035B41 • Banque 300 0201936
IBAN FR9830002019360000060035B41 • BIC (code SWIFT) CRLYFRPP

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DECLARATION UE DE CONFORMITE
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2019-02

Module A / Modul A

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

La Directive du Parlement Européen et du Conseil d'harmonisation des lois des Etats Membres concernant la mise à disposition sur le marché d'équipements sous pression / Directive of the European Parliament and of the Council on the Harmonization of the laws of the Member States relating of the making available on the market of pressure equipment / Richtlinie des Europäischen Parlaments und des Rates zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die Bereitstellung von Druckgeräten auf dem Markt	**2014/68/UE 2014/68/EU**	**Du / of / vom 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) Angewandtes Konformitätsbewertungsverfahren für Fluide nach Art. 4 Abs.1	**Module A / Modul A**	

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

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

Vaulx-en-Velin, le 07/02/19

Joséphine SIGNOLES-FONTAINE
Responsable QSE / QSE Manager

SAMSON REGULATION S.A.S.

DECLARATION UE DE CONFORMITE
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1/2

DC012
2019-04

Module H / Modul H, N⁰ Nr CE-0062-PED-H-SAM 001-17-FRA Rev. 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:
SAMSON REGULATION SAS erklärt in alleiniger Verantwortung für folgende Produkte:

Appareils / Devices / Geräte	Type / Typ	Exécution / Version / Ausführung
Vanne de régulation passage droit / globe valve / Durchgangsventil	3241	DIN - corps en fonte sphéroïdale / body of spheroidal graphite iron / Gehäuse Sphäroguss : GJS-400-18-LT DN 65 - 150 PN 25 Fluides groupe 2 / fluids group 2 / Fluide Gruppe 2 [2)]
	3241	ANSI - corps en fonte grise / body of cast iron / Gehäuse Grauguss: A126 B Cl 250 NPS 4 – 6 Fluides groupe 2 / fluids group 2 / Fluide Gruppe 2 [2)]
	3241	DIN ANSI - corps en acier moulé / body of cast steel / Gehäuse Gussstahl DN 32 – 150 [1)] Cl 150 - 300 NPS $1^{1/2}$ - 6 [1)] Tout type de fluides / all fluids / alle Fluide
Vanne de régulation 3 voies / 3-way Valve / Drei-Wege-Stellventil	3244	DIN - corps en fonte sphéroïdale / body of spheroidal graphite iron / Gehäuse Sphäroguss : GJS-400-18-LT DN 65 - 150 PN 25 Fluides groupe 2 / fluids group 2 / Fluide Gruppe 2 [2)]
	3244	DIN ANSI - corps en acier moulé / body of cast steel / Gehäuse Gussstahl DN 32 – 150 [1)] Cl 150 - 300 NPS $1^{1/2}$ - 6 [1)] Tout type de fluides / all fluids / alle Fluide
Vanne cryogénique / Cryogenic valve / Tieftemperaturventil	3246	DIN ANSI - corps en acier moulé / body of cast steel / Gehäuse Gussstahl DN 32 – 150 [1)] Cl 150 - 600 NPS $1^{1/2}$ - 6 [1)] Tout type de fluides / all fluids / alle Fluide
Vanne cryogénique / Cryogenic valve / Tieftemperaturventil	3248	DIN ANSI - corps en acier moulé / body of cast steel / Gehäuse Gussstahl DN 32 – 150 [1)] Cl 150 - 600 NPS $1^{1/2}$ - 6 [1)] Tout type de fluides / all fluids / alle Fluide
Vanne de régulation passage droit / globe valve / Durchgangsventil	3251	DIN & ANSI - corps en acier moulé / body of cast steel / Gehäuse Gussstahl DN 32 – 200 [1)] NPS 1 ¼ – 8 [1)] Tout type de fluides / all fluids / alle Fluide
Vanne haute pression / High pressure valve / Hochdruckventil	3252	DIN & ANSI - corps en acier forgé / body of forged steel / Gehäuse Schmiedestahl DN 32 – 80 [1)] NPS 1 ¼ – 3 [1)] Tout type de fluides / all fluids / alle Fluide
Vanne équerre / Angle valve / Eckventil	3256	DIN & ANSI - corps en acier moulé / body of cast steel / Gehäuse Gussstahl DN 32 – 200 [1)] NPS 1 ¼ – 8 [1)] Tout type de fluides / all fluids / alle Fluide
Vanne à segment sphérique / Segment ball valve / Kugelsegmentventil	3310	DIN & ANSI - corps en acier moulé / body of cast steel / Gehäuse Gussstahl DN 40 – 300 [1)] NPS 1 ½ – 12 [1)] Tout type de fluides / all fluids / alle Fluide
Vanne de régulation passage droit / globe valve / Durchgangsventil	3321	DIN ANSI - corps en acier moulé / body of cast steel / Gehäuse Gussstahl DN 32 – 100 [1)] Cl 150 - 300 NPS $1^{1/2}$ - 4 [1)] Tout type de fluides / all fluids / alle Fluide
Vanne de régulation 3 voies / 3-way Valve / Drei-Wege-Stellventil	3323	DIN ANSI - corps en acier moulé / body of cast steel / Gehäuse Gussstahl DN 32 – 100 [1)] Cl 150 - 300 NPS $1^{1/2}$ - 4 [1)] Tout type de fluides / all fluids / alle Fluide
Vanne papillon / Butterfly valve / Stell-klappe	3331	DIN ANSI - corps en acier moulé / body of cast steel / Gehäuse Gussstahl DN 50 – 400 NPS 2 - 16 Tout type de fluides / all fluids / alle Fluide
Vanne à membrane / Diaphragm valve / Membran-Ventil	3345	DIN & ANSI corps en fonte sphéroïdale, aciers moulé & forgé / body of spheroidal graphite iron, cast & forged steel / Gehäuse Sphäroguss, Gussstahl & Schmiedestahl DN 125 – 150) NPS 5 – 6) Tout type de fluides / all fluids / alle Fluide
Vanne alimentaire / Sanitary valve / Hygienisches Ventil	3347	DIN & ANSI corps en aciers moulé & forgé / body of, cast & forged steel / Gehäuse Gussstahl & Schmiedestahl DN 150 $P_{max\ T = 20°C}$ 16 bar NPS 6 $P_{max\ T= 70°F}$ 240 psi Fluides groupe 2 / fluids group 2 / Fluide Gruppe 2 [2)]
	3347	DIN & ANSI corps en aciers moulé & forgé / body of, cast & forged steel / Gehäuse Gussstahl & Schmiedestahl DN 32 – 150 [1)] $P_{max\ T = 20°C}$ 40 bar NPS 1 ¼ – 6 [1)] $P_{max\ T= 70°F}$ 600 psi Fluides groupe 2 / fluids group 2 / Fluide Gruppe 2 [2)]
	3347	DIN & ANSI corps en aciers moulé & forgé / body of, cast & forged steel / Gehäuse Gussstahl & Schmiedestahl DN 32 – 125 [1)] $P_{max\ T = 20°C}$ 63 bar NPS 1 ¼ – 5 [1)] $P_{max\ T= 70°F}$ 945 psi Fluides groupe 2 / fluids group 2 / Fluide Gruppe 2 [2)]
Vanne Tout ou Rien / On-Off Valve / Auf-Zu Ventil	3351	DIN - corps en fonte sphéroïdale / body of spheroidal graphite iron / Gehäuse Sphäroguss : GJS-400-18-LT DN 65 - 150 PN 25 Fluides groupe 2 / fluids group 2 / Fluide Gruppe 2 [2)]
	3351	ANSI - corps en fonte grise / body of cast iron / Gehäuse Grauguss: A126 B Cl 250 NPS 4 – 6 Fluides groupe 2 / fluids group 2 / Fluide Gruppe 2 [2)]
	3351	DIN ANSI - corps en acier moulé / body of cast steel / Gehäuse Gussstahl DN 32 – 150 [1)] Cl 150 - 300 NPS $1^{1/2}$ - 6 [1)] Tout type de fluides / all fluids / alle Fluide
Bride de mesure / Measure flange / Messflansch	5090	DIN & ANSI - corps en acier forgé / body of forged steel / Gehäuse Schmiedestahl DN 40 – 500 [1)] NPS 1.5 – 20 [1) 2)]
Tube de mesure / Measure tube / Messrohr	5091	DIN & ANSI - corps en acier forgé / body of forged steel / Gehäuse Schmiedestahl DN 40 – 500 [1)] NPS 1.5 – 20 [1) 2)]

[1)] les dimensions plus petites répondent à l'article 4 point 3 / smaller dimensions correspond to Article 4 (3) / Die kleineren Abmessungen entsprechen Artikel 4 Nummer 3.

[2)] Tuyauterie visée à l'article 4 points 1.c) i) et ii) / Acc. to piping article 4 paragraphs 1.c) i) and ii) / Rohrleitung Artikel 4 Nummer 1.c) i) und ii)

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

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SAMSON REGULATION S.A.S.

DECLARATION UE DE CONFORMITE
EU DECLARATION OF CONFORMITY
EU-KONFORMITÄTSERKLÄRUNG

DC012

Module H / Modul H, N° Nr CE-0062-PED-H-SAM 001-17-FRA Rev. A 2019-04

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

La Directive du Parlement Européen et du Conseil d'harmonisation des lois des Etats Membres concernant la mise à disposition sur le marché d'équipements sous pression / Directive of the European Parliament and of the Council on the Harmonization of the laws of the Member States relating of the making available on the market of pressure equipment / Richtlinie des Europäischen Parlaments und des Rates zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die Bereitstellung von Druckgeräten auf dem Markt	**2014/68/UE 2014/68/EU**	**Du / of / vom 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) Angewandtes Konformitätsbewertungsverfahren für Fluide nach Art. 4 Abs.1	**Module H / Modul H**	**certificat n° / Zertifikat-Nr. CE-0062-PED-H-SAM 001-17-FRA Rev. A**

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

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:
Das Qualitätssicherungssystem des Herstellers wird von folgender benannter Stelle überwacht:

Bureau Veritas Exploitation N°Nr 0062, Newtime, 52 Bd du Parc – Ile de la Jatte, FR-92200 NEUILLY-SUR-SEINE

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

Vaulx-en-Velin, le 15/04/19

Joséphine SIGNOLES-FONTAINE
Responsable QSE / QSE Manager

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15 Annex

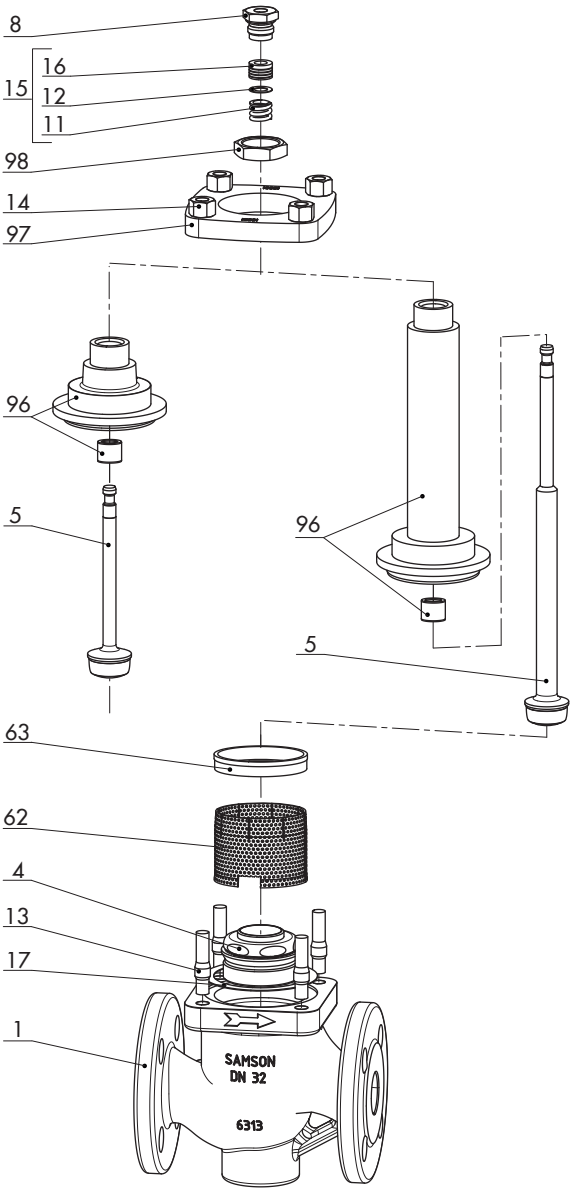
15.1 Tightening torques, lubricants and tools

▶ AB 0100 for tools, tightening torques and lubricants

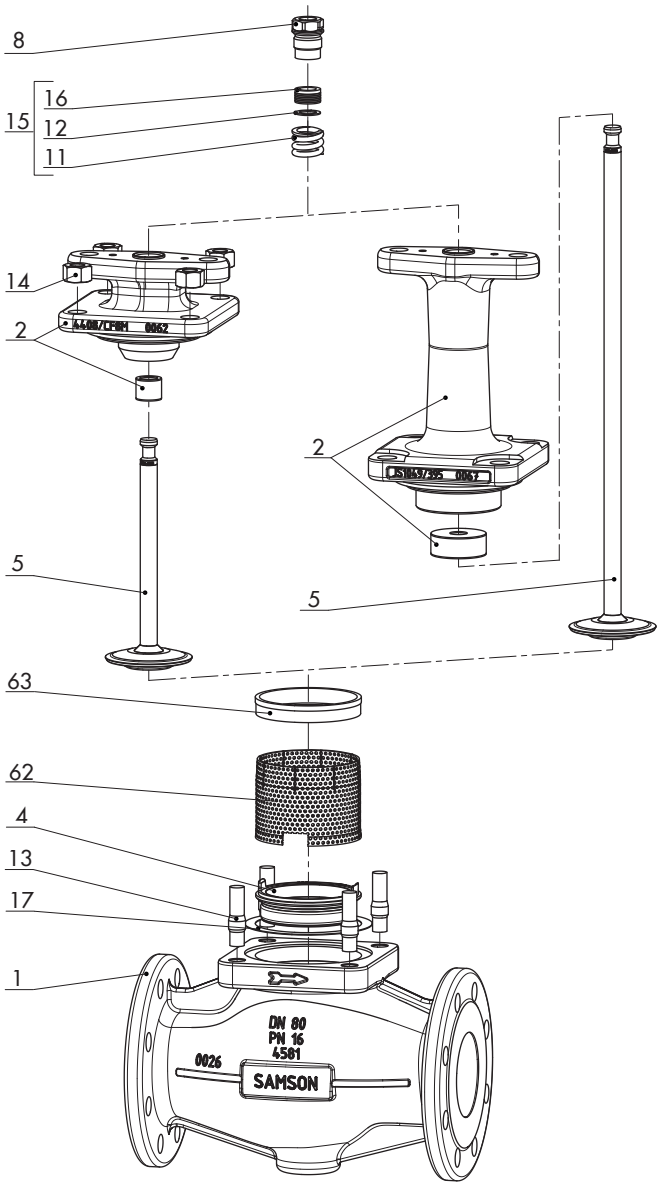
15.2 Spare parts

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
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



Type 3321 · DN 15 to 50/NPS ½ to 2



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 address

You can reach our after-sales service at aftersalesservice@samsongroup.com.

Addresses of SAMSON AG and its subsidiaries

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

Required specifications

Please submit the following details:

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

EB 8111/8112 EN

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