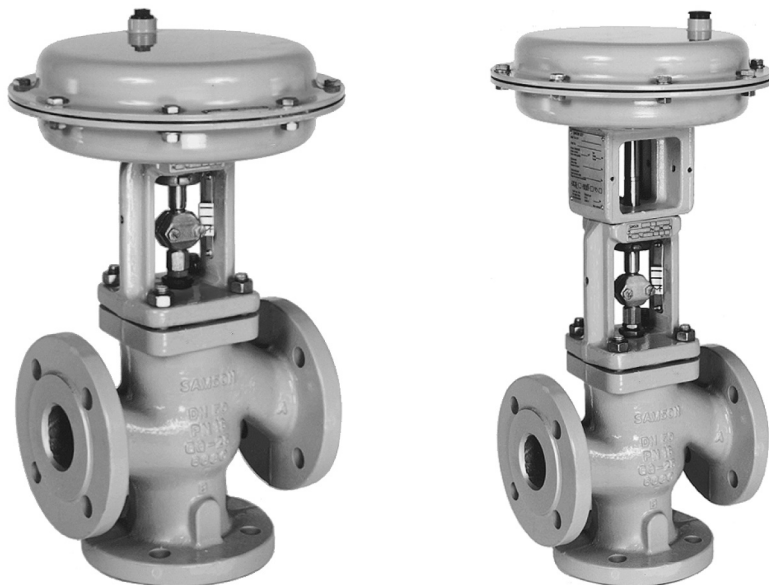


MOUNTING AND OPERATING INSTRUCTIONS

SAMSON

EB 8026 EN

Translation of original instructions



Type 3244 Valve with Type 3271 Actuator (left) and Type 3277 Actuator (right)

Type 3244 Valve · DIN and ANSI versions

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

Edition April 2024

CE

Note on these mounting and operating instructions

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

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



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

Definition of signal words

DANGER

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

WARNING

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

NOTICE

Property damage message or malfunction

Note

Additional information

Tip

Recommended action

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1 Safety instructions and measures

Intended use

The SAMSON Type 3244 Three-way Valve in combination with an actuator, e.g. Type 3271 or Type 3277 Pneumatic Actuator, is designed as a mixing or diverting valve for use in process engineering and industrial applications. The valve with its actuator is designed to operate under exactly defined conditions (e.g. operating pressure, process medium, temperature). Therefore, operators must ensure that the control valve is only used in operating conditions that meet the specifications used for sizing the valve at the ordering stage. In case operators intend to use the control valve in applications or conditions other than those specified, contact SAMSON.

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

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

Reasonably foreseeable misuse

The control valve is not suitable for the following applications:

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

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

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

Qualifications of operating personnel

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

Safety instructions and measures

Personal protective equipment

SAMSON recommends 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, e.g. when working at height
 - Safety footwear, if applicable ESD (electrostatic discharge) footwear
- ➔ Check with the plant operator for details on further protective equipment.

Revisions and other modifications

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

Safety features

The fail-safe position of the control valve upon air supply or control signal failure depends on the actuator used (see associated actuator documentation). When the valve is combined with a SAMSON Type 3271 or Type 3277 Pneumatic Actuator, the control valve moves to a certain fail-safe position (see the 'Design and principle of operation' chapter) upon supply air or control signal failure. 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. Plant operators and operating personnel must observe all hazard statements, warnings and caution notes in these mounting and operating instructions.

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

Responsibilities of the operator

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

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

Responsibilities of operating personnel

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

Referenced standards, directives and regulations

The control valves comply with the requirements of the European Pressure Equipment Directive 2014/68/EU and the Machinery Directive 2006/42/EC. Valves with a CE marking have a declaration of conformity which includes information about the applied conformity assessment procedure. The 'Certificates' chapter contains this declaration of conformity.

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

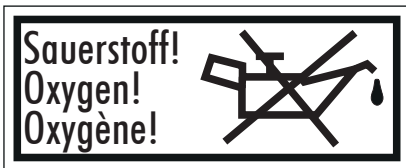
→ For connection to the equipotential bonding system, observe the requirements specified in Clause 6.4 of EN 60079-14 (VDE 0165-1).

Referenced documents

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

- Mounting and operating instructions for the mounted actuator, e.g. ► EB 8310-X for Type 3271 or Type 3277 Pneumatic Actuator
- Mounting and operating instructions for mounted valve accessories (positioner, solenoid valve etc.)
- ► AB 0100 for tools, tightening torques and lubricant
- Manual ► H 02: Appropriate Machinery Components for SAMSON Pneumatic Control Valves with a Declaration of Conformity of Final Machinery
- For oxygen service: Manual ► H 01

The packaging of valve constructed and sized for oxygen service has the following label on it:



- If a device contains a substance listed as a substance of very high concern (SVHC) on the candidate list of the REACH regulation, the document "Additional Information on Your Inquiry/Order" is added to the SAMSON order documents. This document includes the SCIP number assigned to the devices concerned. This number can be entered into the database on the European Chemicals Agency (ECHA) website (► <https://www.echa.europa.eu/scip-database>) to find out more information on the SVHC contained in the device.

Further information on material compliance at SAMSON is available at

► www.samsongroup.com > About SAMSON > Environment, Social & Governance > Material Compliance.

1.1 Notes on possible severe personal injury

DANGER

Risk of bursting in pressure equipment.

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

- Observe the maximum permissible pressure for valve and plant.
- Before starting any work on pressure-bearing or pressure-retaining parts belonging to the valve assembly, depressurize all plant sections affected as well as the valve.
- Drain the process medium from the plant sections affected as well as from the valve.

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.

- Follow the standard operating procedures provided by the plant operator.
In the event of a potential risk:
 - Allow components and pipelines to cool down or warm up to the ambient temperature.
 - Wear protective clothing and safety gloves.

Risk of hearing loss or deafness due to loud noise.

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

- Follow the standard operating procedures provided by the plant operator.
In the event of a potential risk:
 - Wear hearing protection when working near the valve.

WARNING

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

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

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

Crush hazard arising from moving parts.

The control valve contains moving parts (actuator and plug stem), which can injure hands or fingers if inserted into the valve.

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

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

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, which requires the actuator to be opened, or when the actuator stem has become blocked, relieve the compression from the preloaded springs (see associated actuator documentation).

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

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

- Follow the standard operating procedures provided by the plant operator.
In the event of a potential risk:
 - If possible, drain the process medium from the plant sections affected and from the valve.
 - Wear protective clothing, safety gloves, respiratory protection and eye protection.

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

Valves with a bellows seal have a test connection on the top flange.

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

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

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

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

1.3 Notes on possible property damage

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

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

- Flush the pipelines before start-up.

! NOTICE

Risk of valve damage due to unsuitable medium properties.

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

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

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

Observe the specified torques when tightening control valve components. Excessive tightening torques lead to parts wearing out more quickly. Parts that are 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 surfaces.


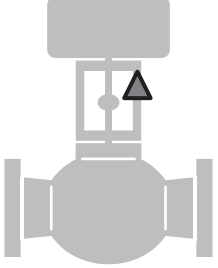
→ Only use lubricants approved by SAMSON (▶ AB 0100).

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

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

→ Make sure that only suitable lubricants are used.

1.4 Warnings on the device

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

2 Markings on the device

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

2.1 Valve nameplate

The valve nameplate (80) is affixed to the flange (see Fig. 2-1).

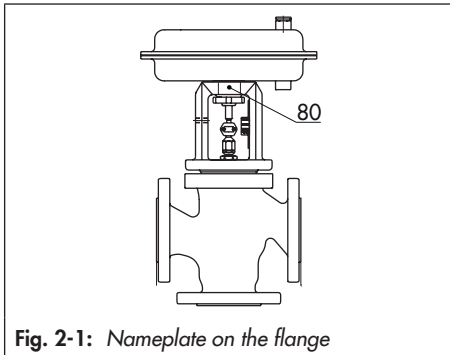


Fig. 2-1: Nameplate on the flange

i Note

Fig. 2-2 and the inscription table list all possible characteristics and options that may appear on a valve nameplate. Only the inscriptions relevant to the ordered Type 3244 Valve actually appear on the nameplate.

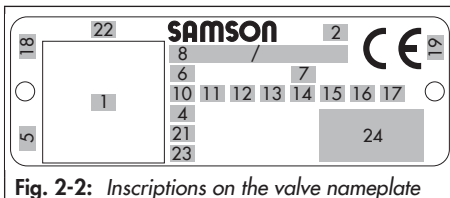


Fig. 2-2: Inscriptions on the valve nameplate

Item	Inscription meaning
1	Identification code (scannable)
2	Type designation
4	Material
5	Month and year of manufacture
6	Nominal size: DIN: DN · ANSI: NPS · JIS: DN
7	Pressure rating: DIN: PN · ANSI: CL · JIS: K
8	Order number/item
10	Flow coefficient: DIN: KVS · 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 : Diverting valve
15	Noise reduction: 1 : Flow divider (ST) 1 · 2 : ST 2 · 3 : ST 3 · 1/PSA : ST 1 standard and integrated in seat for PSA valve · AC-1/AC-2/AC-3/AC-5 : Anti-cavitation trim, versions 1 to 5 · LK : Perforated plug · LK1/LK2/LK3 : Perforated plug with flow divider ST 1 to ST 3 · MHC1 : Multi-hole cage · CC1 : Combi Cage · ZT1 : Zero Travel · LDB : Low dB · MHC1 : Multi-hole cage · CDST : Multi-stage plug/cage
16	PSA version: PSA

Markings on the device

Item	Inscription meaning
17	Cage/seat style: CS : Clamped-in seat · CG : Guided cage · SS : Screwed-in seat · SF : Suspended cage, flanged seat
18	Country of origin
19	ID of the notified body (EU), for example: – 0062 for Bureau Veritas Services SAS, 8 Cours du Triangle, 92800 PUTEAUX – LA DEFENSE
21	PED : Pressure Equipment Directive G1/G2 : Gases and vapors Fluid group 1 = Hazardous Fluid group 2 = Other L1/L2 : liquids Fluid group 1 = Hazardous Fluid group 2 = Other I/II/III : Category 1 to 3
22	Serial number
23	Hardware version (NE 53)
24	Other marks of conformity

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

2.2 Actuator nameplate

See associated actuator documentation.

2.3 Material identification number

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

Tip

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

The serial number enables you to view the device's current technical data as configured by SAMSON. The material number enables you to view the device's technical data as configured by SAMSON upon delivery of the device. To view these data, go to our website at ► www.samsongroup.com > Products > Electronic nameplate.

2.4 Label when an adjustable packing is installed

An instructional label is affixed to the valve when an adjustable packing is installed (see Fig. 2-3).



3 Design and principle of operation

See Fig. 3-1 and Fig. 3-2 on page 3-2.

The Type 3244 is a three-way valve which can be used either as a mixing or diverting valve. The design of the mixing and diverting valves in sizes DN 15 to 25 (NPS ½ to 1) is identical. The Type 3244 Valve is preferably combined with a SAMSON Type 3271 or Type 3277 Pneumatic Actuator. It can also be combined with other actuators.

The two seats (4 and 141) and plug with plug stem (5) are installed in the body (1). The plug stem is connected to the actuator stem (A7) by the stem connector clamps (A26/27) and is sealed by a spring-loaded V-ring packing (15). The springs in the pneumatic actuator (A) are located either above or below the diaphragm depending on the selected fail-safe action. A change in the signal pressure acting on the diaphragm causes the plug to move. The actuator size is determined by the diaphragm area.

The medium flows through the valve in the direction indicated by the arrow. A rise in

signal pressure causes the force acting on the diaphragm in the actuator to increase. The springs are compressed. Depending on the selected direction of action, the actuator stem retracts or extends. As a result, the plug position in the seats changes and determines the flow rate through the valve.

In mixing valves, the process media to be mixed enter at valve ports **A** and **B**. The combined flow exits the valve at port **AB** (see Fig. 3-1).

In diverting valves, the process medium enters at the valve port **AB** and the partial flows exit at ports **A** and **B** (see Fig. 3-2).

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).

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

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

1	Body	10	Lock nut	A8	Ring nut
2	Flange	14	Nuts	A26/ 27	Stem connector clamps
4	Top seat	15	Packing		
5	Plug (with plug stem)	17	Body gasket		
8	Threaded bushing (packing nut)	84	Travel indicator scale		
9	Stem connector nut	141	Bottom seat		
		A7	Actuator stem		

Fig. 3-1: Type 3244 Valve (as mixing valve) with Type 3271 Pneumatic Actuator

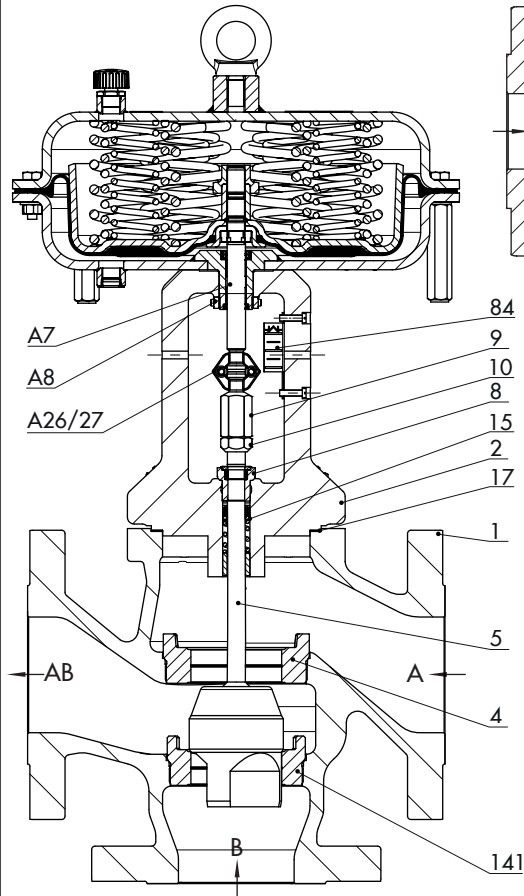
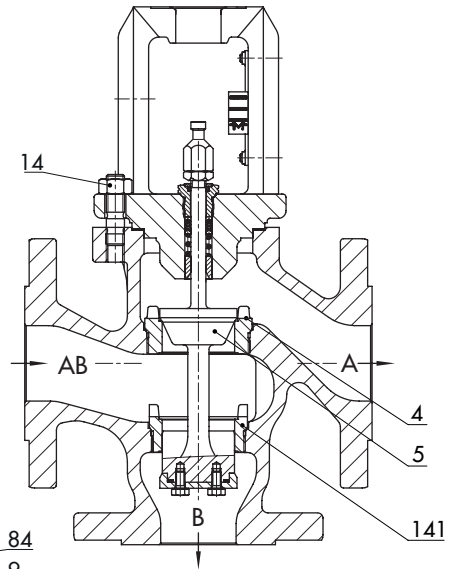


Fig. 3-2: Type 3244 Valve (as diverting valve)



Actuator stem extends (FA)

When the signal pressure is reduced or the air supply fails, the springs move the actuator stem downward. In mixing valves, port **B** is closed. In diverting valves, port **A** is closed.

Port B of diverting valves in sizes DN 15 to 25 (NPS ½ to 1) is closed as these valves have the same construction as mixing valves.

Actuator stem retracts (FE)

When the signal pressure is reduced or the air supply fails, the springs move the actuator stem upward. In mixing valves, port **A** is closed. In diverting valves, port **B** is closed.

Port A of diverting valves in sizes DN 15 to 25 (NPS ½ to 1) is closed as these valves have the same construction as mixing valves.

**Tip**

The actuator's direction of action can be reversed, if required. Refer to the mounting and operating instructions of the pneumatic actuator:

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

3.1 Versions

With insulating section/bellows seal

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

Actuators

In these instructions, the preferable combination with a SAMSON Type 3271 or

Type 3277 Pneumatic Actuator is described. The pneumatic actuator (with or without handwheel) can be replaced by another pneumatic actuator in a different size, but with the same travel.

➔ Observe the maximum permissible actuator force.

i Note

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

The basic pneumatic actuator can be replaced by a pneumatic actuator with additional handwheel or by an electric actuator (see Information Sheet ► T 8300).

3.2 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.

Design and principle of operation

Insulation

Control valves can be insulated to reduce heat energy transfer.

Refer to the instructions in the 'Installation' chapter.

Test connection

Versions with bellows seal fitted with a test connection (G 1/8) at the top flange allow the sealing ability of the bellows to be monitored.

Particularly for liquids and vapors, we recommend installing a suitable leakage indicator (e.g. a contact pressure gauge, an outlet to an open vessel or an inspection glass).

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.

3.3 Valve accessories

Information Sheet ► T 8350

3.4 Technical data

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

i Note

More information is available in Data Sheet ► T 8026.

Conformity

The Type 3244 Valve bears the CE and EAC mark of conformity.



Temperature range

Depending on the version, the control valve is designed for a temperature range from -10 to +220 °C (14 to 428 °F). The use of an insulating section or bellows seal can extend the temperature range from -196 to +450 °C (-325 to +842 °F) depending on the properties of the materials used.

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

Table 3-1 to Table 3-4 provide an overview of the dimensions and weights of the standard version of Type 3244 Valve as well as the version with insulating section or bellows seal. The lengths and heights in the dimensional drawings are shown on page 3-6.

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

i Note

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

▶ T 8310-1 for Type 3271 or Type 3277 Pneumatic Actuators up to 750 cm² actuator area

Table 3-1: Dimensions of the standard version of Type 3244 Valve (DIN version)

Valve	DN	15	20	25	32	40	50	65	80	100	125	150
L	mm	130	150	160	180	200	230	290	310	350	400	480
H1	mm	235						270		360	375	
H2	mm	70	80	85	100	105	120	130	140	150	200	210

Table 3-2: Dimensions of the standard version of Type 3244 Valve (ANSI version)

Valve	DN	15	20	25	40	50	65	80	100	150	
	NPS	½	¾	1	1½	2	2½	3	4	6	
L	Class 150	mm	184	184	184	222	254	276	298	352	451
		in	7.25	7.25	7.25	8.75	10.00	10.88	11.75	13.88	17.75
	Class 300	mm	190	194	197	235	267	292	318	368	473
		in	7.50	7.62	7.75	9.25	10.50	11.50	12.50	14.50	18.62
H1	mm	235						270		360	375
	in	9.25						10.63		14.17	14.76
H2	Class 150	mm	92	92	92	111	127	138	149	176	225.50
		in	3.62	3.62	3.62	4.37	5.00	5.43	5.87	6.93	8.88
	Class 300	mm	95	97	98.50	117.50	133.50	146	159	184	236.50
		in	3.76	3.82	3.88	4.63	5.26	5.75	6.26	7.24	9.31

Design and principle of operation

Table 3-3: Dimensions for version with insulating section or bellows seal

Valve	DN	15	20	25	32	40	50	65	80	100	125	150	
	NPS	½	¾	1	–	1½	2	2½	3	4	–	6	
H4	Ins. section or bellows seal	mm	420						455	645	655		
		in	16.54						17.91	25.39	25.79		
	Long ins. section or bellows seal	mm	725						760	895	900		
		in	28.54						29.92	35.24	35.43		

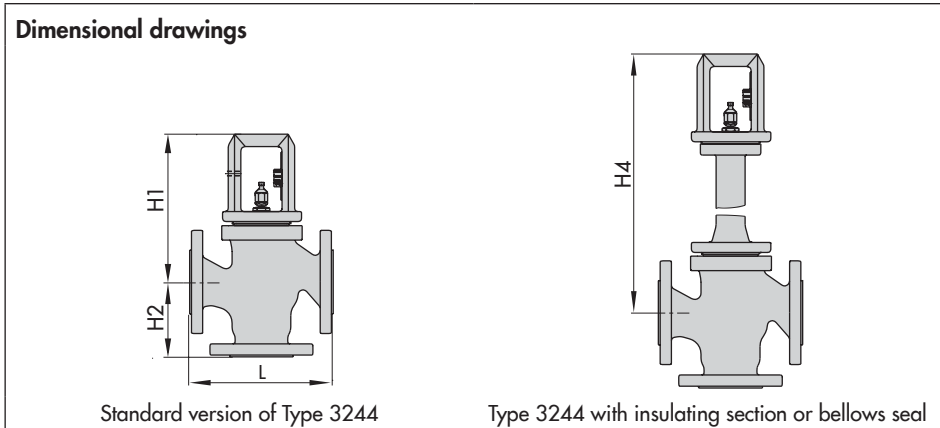


Table 3-4: Weights of Type 3244 Valve · Without actuator

Valve	DN	15	20	25	32	40	50	65	80	100	125	150	
	NPS	½	¾	1	–	1½	2	2½	3	4	–	6	
Standard version	kg	6	7	8	13	15	17	31	37	49	95	135	
	lbs	13	15.5	17.5	28.7	33	37.5	68	82	108	210	298	
Version with	Ins. section or bellows seal	kg	9	10	11	19	21	23	40	45	68	120	165
		lbs	20	22	24	42	46.3	50.7	88	99	150	265	364
	Long ins. section or bellows seal	kg	13	14	15	23	25	27	44	49	76	128	173
		lbs	28.7	30.9	33	50.7	55	59.5	97	108	168	282	382

4 Shipment and on-site transport

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

4.1 Accepting the delivered goods

After receiving the shipment, proceed as follows:

1. Check the scope of delivery. Check that the specifications on the valve nameplate match the specifications in the delivery note. See the 'Markings on the device' chapter 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. Refer to the transport documents and the 'Technical data' chapter.

4.2 Removing the packaging from the valve

Observe the following sequence:

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

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

4.3 Transporting and lifting the valve

⚠ DANGER

Danger due to suspended loads falling.

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

⚠ WARNING

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

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

WARNING

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

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

WARNING

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

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

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

NOTICE

Risk of valve damage due to incorrectly attached slings.

The lifting eyelet/eyebolt on SAMSON actuators is only intended for mounting and removing the actuator as well as lifting the actuator without valve. Do not use this lashing point to lift the entire control valve assembly.

- 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 Chapter 4.3.2).
-

Tip

A swivel hoist can be screwed into SAMSON actuators with a female thread on the top diaphragm case in place of the eyebolt (see associated actuator documentation).

In contrast to the lifting eyelet/eyebolt, the swivel hoist is designed for setting a control valve assembly upright.

The sling between the swivel hoist and rigging equipment (hook, shackle etc.) must not bear any load when lifting a control valve assembly. The sling only protects the control valve from tilting while being lifted.

Tip

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

4.3.1 Transporting the valve

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

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

Transport instructions

- Protect the control valve against external influences (e.g. impact).
- Do not damage the corrosion protection (paint, surface coatings). Repair any damage immediately.

- Protect the piping and any mounted valve accessories against damage.
- Protect the control valve against moisture and dirt.
- The permissible transportation temperature of standard control valves is -20 to $+65$ °C (-4 to $+149$ °F).

i Note

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

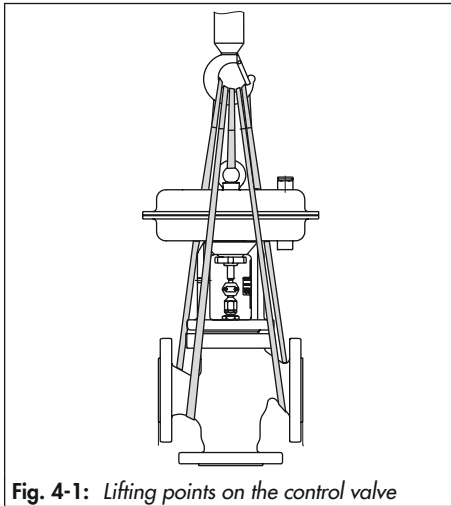


Fig. 4-1: Lifting points on the control valve

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.
- Make sure that the additional sling between the lashing point on the actuator and rigging equipment (hook, shackle etc.) does not bear any load when lifting valves larger than NPS 6. The sling only protects the control valve from tilting while being lifted. Before lifting the control valve, tighten the sling.

Lifting the control valve

1. 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. If necessary, attach others sling to the lashing point on the actuator and to the rigging equipment.

Shipment and on-site transport

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

4.4 Storing the valve

! NOTICE

Risk of valve damage due to improper storage.

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

i Note

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

Storage instructions

- Protect the control valve against external influences (e.g. impact).
- Secure the valve in the stored position against slipping or tipping over.
- Do not damage the corrosion protection (paint, surface coatings). Repair any damage immediately.
- Protect the control valve against moisture and dirt. Store it at a relative humidity of less than 75 %. In damp spaces, prevent condensation. If necessary, use a drying agent or heating.
- Make sure that the ambient air is free of acids or other corrosive media.
- 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.
- For storage periods longer than 4 months, we recommend storing the control valves in nominal sizes DN 150/ NPS 6 or larger upright with the actuator on top.

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.



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

5 Installation

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

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 lengths are significantly shorter than the recommended lengths.

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

- ➔ Observe the inlet and outlet lengths (see Table 5-1). Contact SAMSON if the valve conditions or state of the process medium are different from those specified.
- ➔ Install the valve free of stress and with the least amount of vibrations as possible.

Table 5-1: Inlet and outlet lengths

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

¹⁾ No wet steam

Installation

Read sections “Mounting position” and “Support or suspension” in this chapter.

- Install the valve allowing sufficient space to remove the actuator and valve or to perform service work on them.
- In heating or cooling applications, the valve can be installed in the flow pipe or return pipe (see Fig. 5-1).

Mounting position

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

In the following versions, the valve **must** be installed with the actuator on top:

- Valves in DN 100/NPS 4 and larger
 - Valves with insulating section for low temperatures below -10 °C (14 °F)
- 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.

Mixing service

Temperature control $Q = \text{constant}$

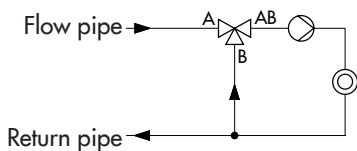
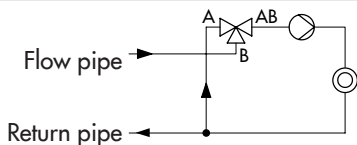
Fail-safe action: FA = "Actuator stem extends", FE = "Actuator stem retracts"
 In heating applications with FA, the heating medium (flow) is shut off in the fail-safe position,
 in cooling applications with FE, cooling is maintained in the fail-safe position.

Diverting service

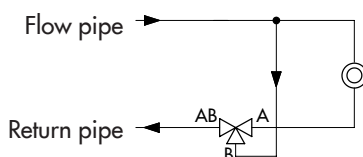
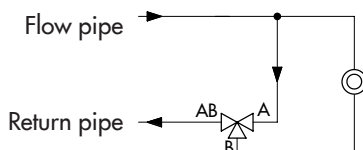
Flow control $Q = 0 \text{ to } 100 \%$

Heating with mixing valve (FA) or cooling with mixing valve (FE)

Installation in flow pipe

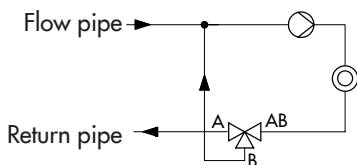
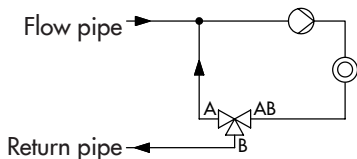


Installation in return pipe



Heating with diverting valve (FA) or cooling with diverting valve (FE)

Installation in return flow pipe



Installation in flow pipe

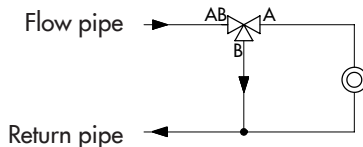
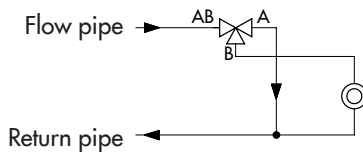


Fig. 5-1: Typical installations

5.2 Preparation for installation

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

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

NOTICE

Risk of control valve damage due to incorrect insulation.

- Only insulate control valves up to the bonnet flange of the valve body (see Fig. 5-2). This also applies to versions with bellows seal or insulating section at medium temperatures below 0 °C (32 °F) or above 220 °C (428 °F). If the insulating section is insulated, it will not function properly.
- Do not insulate valves mounted to comply with NACE MR0175 requirements and which have nuts and bolts that are not suitable for sour gas environments.

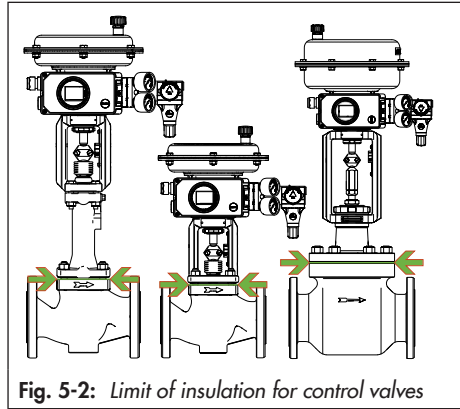


Fig. 5-2: Limit of insulation for control valves

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 the device

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

! NOTICE

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

Observe the specified torques when tightening control valve components. Excessive tightening torques lead to parts wearing out more quickly. Parts that are 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).

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

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

Versions with V-port plug

In mixing valves in sizes larger than DN 25, the bottom plug is designed as V-port plug.

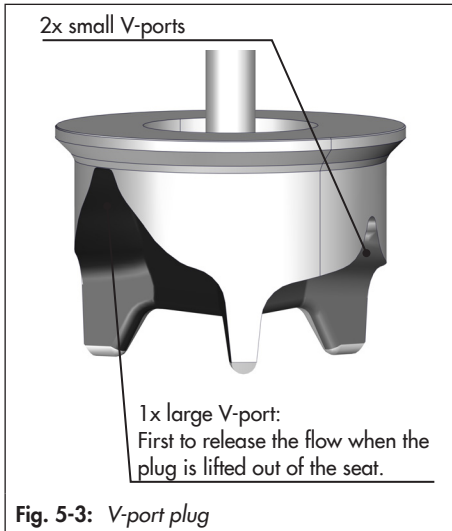
To achieve the best flow conditions inside the valve, the V-port plug must always be installed with the port that releases the flow first when the valve opens facing toward the valve outlet. This is the largest of the three V-shaped ports (see Fig. 5-3).

5.3.1 Mounting the actuator onto the valve

! WARNING

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

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



- ➔ Before mounting the actuator, determine which V-shaped port is uncovered first when the plug is lifted out of the seat.
- ➔ On mounting the actuator, make sure that the V-shaped port uncovered first faces toward the valve outlet (**AB**) at the side.
- ➔ To mount the actuator, proceed as described in the associated actuator documentation.

5.4 Installing the valve into the pipeline

⚠ NOTICE

Premature wear and leakage due to insufficient support or suspension.

- ➔ Support or suspend the valve sufficiently at suitable points.

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' chapter). 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.

5.5 Testing the installed valve

⚠ DANGER

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

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

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

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

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

⚠ WARNING

For valves with a bellows seal, there is a risk of personal injury due to pressurized components and as a result of process medium being discharged.

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

⚠ WARNING

Risk of hearing loss or deafness due to loud noise.

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

- Follow the standard operating procedures provided by the plant operator. In the event of a potential risk:
 - Wear hearing protection when working near the valve.

⚠ WARNING

Crush hazard arising from actuator and plug stem moving.

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

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

⚠ WARNING

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

While the valve is operating, air is vented from the actuator, e.g. to change the valve's position or to open or close the valve.

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

⚠ WARNING

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

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

- Before starting any work on the actuator, which requires the actuator to be

opened, or when the actuator stem has become blocked, relieve the compression from the preloaded springs (see associated actuator documentation).

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

5.5.1 Leak test

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



Tip

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

1. Slowly apply the test medium to the valve until the test pressure is reached. Avoid sudden surges in pressure since the resulting high velocities may damage the valve.
2. Check the valve for leakage to the atmosphere.
3. Depressurize the pipeline section and valve.
4. Rework any parts that leak (see section "Adjusting the packing") and repeat the leak test.

Adjusting the packing

A label on the flange indicates whether an adjustable packing is installed (see the 'Markings on the device' chapter).

NOTICE

Impaired valve functioning due to increased friction as a result of the threaded bushing being tightened too far.

→ *Make sure that the plug stem can still move smoothly after the threaded bushing has been tightened.*

1. Tighten the threaded bushing gradually (by turning it clockwise) until the packing seals the valve.
 2. Open and close the valve several times.
 3. Check the valve for leakage to the atmosphere.
 4. Repeat steps 1 and 2 until the packing completely seals the valve.
- If the adjustable packing does not seal properly, contact our after-sales service.

5.5.2 Travel motion

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

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

5.5.3 Fail-safe position

- Shut off the signal pressure line.
- Check whether the valve moves to the fail-safe position (see the 'Design and principle of operation' chapter).

5.5.4 Pressure test

The plant operator is responsible for performing the pressure test.

**Tip**

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

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

- Move the plug to the mid-position to open the valve.
- Observe the maximum permissible pressure for both the valve and plant.

6 Start-up

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

⚠ WARNING

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

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

- Follow the standard operating procedures provided by the plant operator.
- In the event of a potential risk:
 - Allow components and pipelines to cool down or warm up to the ambient temperature.
 - Wear protective clothing and safety gloves.

⚠ WARNING

For valves with a bellows seal, there is a risk of personal injury due to pressurized components and as a result of process medium being discharged.

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

⚠ WARNING

Risk of hearing loss or deafness due to loud noise.

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

pneumatic actuator or pneumatic valve accessories not fitted with noise-reducing elements. Both can damage hearing.

- Follow the standard operating procedures provided by the plant operator.
- In the event of a potential risk:
 - Wear hearing protection when working near the valve.

⚠ WARNING

Crush hazard arising from actuator and plug stem moving.

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

⚠ WARNING

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

While the valve is operating, air is vented from the actuator, e.g. to change the valve's position or to open or close the valve.

Start-up

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

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

- The control valve is properly installed in the pipeline (see the 'Installation' chapter).
- The leak and function tests have been completed successfully (see the 'Testing the installed valve' chapter).
- The prevailing conditions in the plant section concerned meet the valve sizing requirements (see section 'Intended use' in the 'Safety instructions and measures' chapter).

Start-up/putting the device back into operation

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

7 Operation

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

⚠ WARNING

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

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

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

In the event of a potential risk:

→ Allow components and pipelines to cool down or warm up to the ambient temperature.

→ Wear protective clothing and safety gloves.

⚠ WARNING

For valves with a bellows seal, there is a risk of personal injury due to pressurized components and as a result of process medium being discharged.

→ Do not loosen the screw on the test connection while the valve is pressurized.

⚠ WARNING

Risk of hearing loss or deafness due to loud noise.

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

pneumatic actuator or pneumatic valve accessories not fitted with noise-reducing elements. Both can damage hearing.

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

In the event of a potential risk:

→ Wear hearing protection when working near the valve.

⚠ WARNING

Crush hazard arising from actuator and plug stem moving.

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

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

→ Do not impede the movement of the actuator and plug stem by inserting objects into the yoke.

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

⚠ WARNING

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

While the valve is operating, air is vented from the actuator, e.g. to change the valve's position or to open or close the valve.

Operation

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

7.1 Normal operation

The handwheel of valves with actuators fitted with a handwheel must be in the neutral position during normal operation.

7.2 Manual operation

Valves with actuators fitted with a handwheel can be manually closed or opened in the event of failure of the auxiliary energy supply.

8 Malfunctions

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

8.1 Troubleshooting

Malfunction	Possible reasons	Recommended action
Actuator and plug stem does not move on demand.	Actuator is blocked.	Put the control valve out of operation (see the 'Decommissioning' chapter) and remove the blockage. WARNING! A blocked actuator or plug stem (e.g. due to seizing up after remaining in the same position for a long time) can suddenly start to move uncontrollably. Injury to hands or fingers is possible if they are inserted into the actuator or valve. Before trying to unblock the actuator or plug stem, disconnect and lock the pneumatic air supply as well as the control signal. Before unblocking the actuator, release any stored energy in the actuator (e.g. spring compression). See associated actuator documentation.
	Diaphragm in the actuator defective	See associated actuator documentation.
	Signal pressure too low	Check the signal pressure. Check the signal pressure line for leakage.
Jolting movement of the actuator and plug stem	Version with adjustable packing ¹⁾ : packing tightened too far	Tighten the packing correctly (see section 'Adjusting the packing' in the 'Installation' chapter > 'Testing the installed valve').
Actuator and plug stem does not stroke through the full range.	Signal pressure too low	Check the signal pressure. Check the signal pressure line for leakage.
	Travel stop active	See associated actuator documentation.
	Incorrect setting of valve accessories	Check the settings of the valve accessories.
Increased flow through closed valve (seat leakage)	Dirt or other foreign particles deposited between the seat and plug.	Shut off the section of the pipeline and flush the valve.
	Valve trim is worn out.	Contact our after-sales service.

Malfunctions

Malfunction	Possible reasons	Recommended action
The valve leaks to the atmosphere (fugitive emissions).	Defective packing	Replace packing (see the 'Servicing' chapter) or contact our after-sales service.
	Version with adjustable packing ¹⁾ : packing not tightened correctly	Tighten the packing correctly (see section 'Adjusting the packing' in the 'Installation' chapter > 'Testing the installed valve'). Contact our after-sales service when it continues to leak.
	Version with bellows seal: the bellows seal is defective.	Contact our after-sales service.
	Flanged joints loose or body gaskets worn out	Check flanged joints. Replace gaskets at the flanged joints (see the 'Servicing' chapter) or contact our after-sales service.

¹⁾ See the 'Markings on the device' chapter

i Note

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

8.2 Emergency action

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

In the event of a valve malfunction:

1. Close the shut-off valves upstream and downstream of the control valve to stop the process medium from flowing through the valve.
2. Perform troubleshooting (see Chapter 8.1).

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

Putting the device back into operation after a malfunction

See the 'Start-up' chapter.

9 Servicing

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

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

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

! DANGER

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

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

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

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

! 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.

- ➔ Follow the standard operating procedures provided by the plant operator. In the event of a potential risk:
 - ➔ Allow components and pipelines to cool down or warm up to the ambient temperature.
 - ➔ Wear protective clothing and safety gloves.

! WARNING

For valves with a bellows seal, there is a risk of personal injury due to pressurized components and as a result of process medium being discharged.

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

! WARNING

Risk of hearing loss or deafness due to loud noise.

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

Servicing

- Follow the standard operating procedures provided by the plant operator. In the event of a potential risk:
 - Wear hearing protection when working near the valve.
-

⚠ WARNING

Crush hazard arising from actuator and plug stem moving.

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

⚠ WARNING

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

While the valve is operating, air is vented from the actuator, e.g. to change the valve's position or to open or close the valve.

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

⚠ WARNING

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

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

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

⚠ WARNING

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

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

- Follow the standard operating procedures provided by the plant operator. In the event of a potential risk:
 - Wear protective clothing, safety gloves, respiratory protection and eye protection.
-

ⓘ NOTICE

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

Observe the specified torques when tightening control valve components. Excessive

tightening torques lead to parts wearing out more quickly. Parts that are 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).

i Note

The control valve was checked by SAMSON before delivery.

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

9.1 Periodic testing

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

💡 Tip

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

SAMSON recommends the following inspections and tests:

Inspection and testing	Recommended action to be taken in the event of a negative result
Check the markings, labels and nameplates on the control valve for their readability and completeness.	<p>Immediately renew damaged, missing or incorrect nameplates or labels.</p> <p>Clean any inscriptions that are covered with dirt and are illegible.</p>
<p>External leakage (fugitive emissions)¹⁾: Inspect the control valve at the possible points of leakage to ensure there is no leakage (see Fig. 9-1).</p> <p>Versions with bellows seal: WARNING! Risk of personal injury due to pressurized components and as a result of process medium being discharged. Do not loosen the screw on the test connection while the valve is pressurized.</p>	<p>Check flanged joints (tightening torques).</p> <p>Replace the gaskets at the flanged joints. For this purpose, put the control valve out of operation (see the 'Decommissioning' chapter).</p> <p>Version with adjustable packing²⁾: Adjust the packing (see section 'Adjusting the packing' in the 'Installation' chapter > 'Testing the installed valve') or replace the packing. To replace the packing, put the control valve out of operation (see the 'Decommissioning' chapter).</p> <p>If the bellows seal is defective, put the control valve out of operation (see the 'Decommissioning' chapter). Contact our after-sales service to repair the bellows seal (see the 'Repairs' chapter).</p>
Check to ensure that the actuator and plug stems move smoothly.	<p>Version with adjustable packing²⁾: Tighten the packing correctly (see section 'Adjusting the packing' in the 'Installation' chapter > 'Testing the installed valve').</p> <p>If the actuator stem or plug stem is blocked, put the control valve out of operation (see the 'Decommissioning' chapter) and remove the blockage. WARNING! A blocked actuator or plug stem (e.g. due to seizing up after remaining in the same position for a long time) can suddenly start to move uncontrollably. Injury to hands or fingers is possible if they are inserted into the actuator or valve. Before trying to unblock the actuator or plug stem, disconnect and lock the pneumatic air supply as well as the control signal. Before unblocking the actuator, release any stored energy in the actuator (e.g. spring compression). See associated actuator documentation.</p> <p>SAMSON recommends the use of positioners with integrated diagnostic firmware for control valves used for on/off service. The partial stroke test included in this software helps prevent a shut-off valve normally in its end position from seizing up or getting jammed.</p>

Inspection and testing	Recommended action to be taken in the event of a negative result
Seat leakage ¹⁾ (see Fig. 9-1) (without testing to check that the leakage class requirements are met)	Shut off the section of the pipeline and flush the valve to remove any dirt and/or deposited foreign particles between the seat and plug.
Check the control valve for external damage that could impair the proper functioning of the control valve or even its safe operation.	Repair any damage immediately. If necessary, put the control valve out of operation (see the 'Decommissioning' chapter).
Check the valve accessories to ensure they are firmly mounted.	Tighten the connections of the valve accessories.
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' chapter). Identify the cause for the malfunction and rectify it (see the 'Troubleshooting' chapter).

- 1) EXPERTplus valve diagnostics can help identify external leakage at dynamic sealing systems as well as seat leakage in valve versions without balanced plugs while the valve is in use. EXPERTplus comes as standard in the digital positioners (Type 3730, TROVIS 3730, Type 3731, TROVIS 3793, TROVIS 3797).
- 2) See the 'Markings on the device' chapter

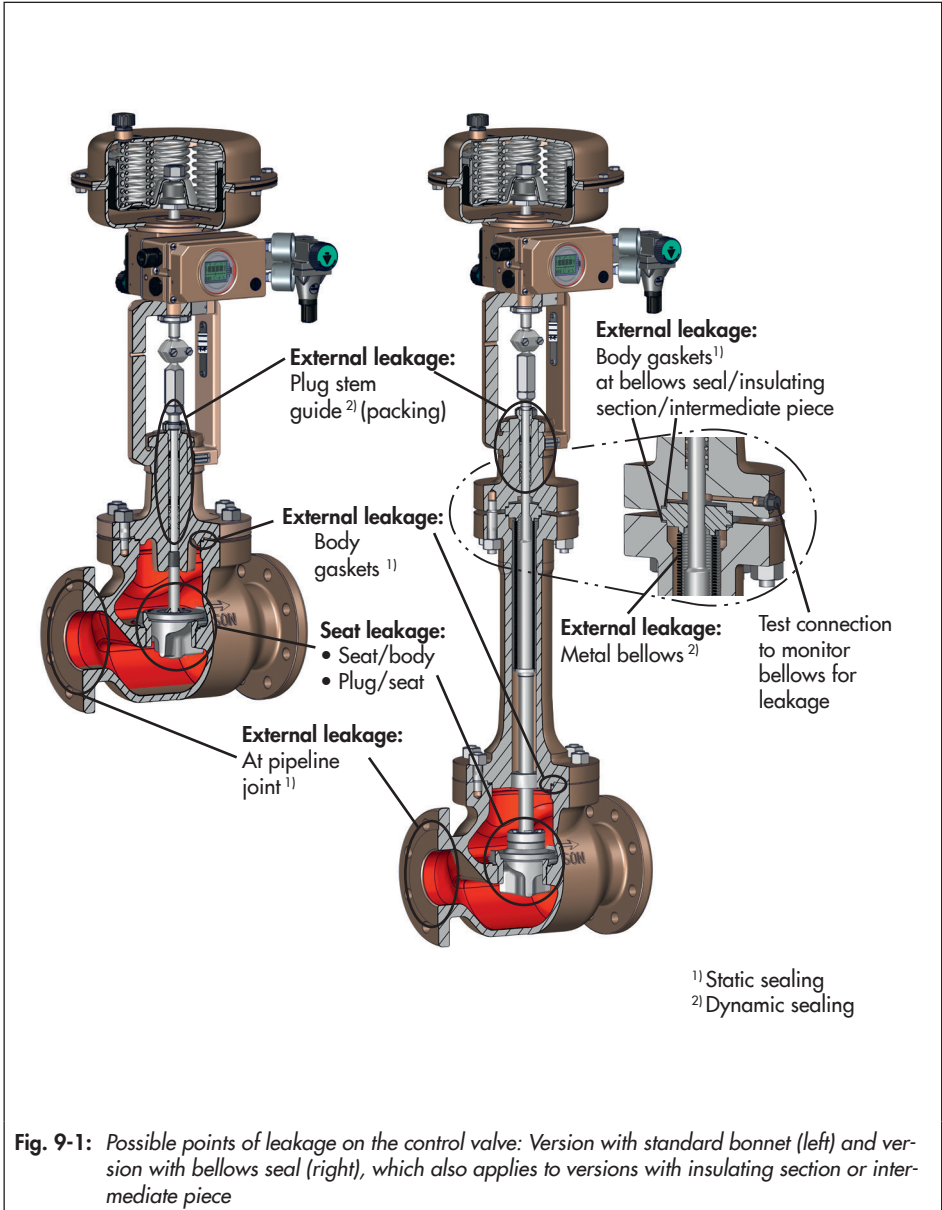


Fig. 9-1: Possible points of leakage on the control valve: Version with standard bonnet (left) and version with bellows seal (right), which also applies to versions with insulating section or intermediate piece

9.2 Service work preparations

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

i Note

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

Tip

SAMSON recommends removing the valve from the pipeline before performing any service work (see the 'Removing the valve from the pipeline' chapter).

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

- Replace the gasket (see Chapter 9.4.1)
- Replace the packing (see Chapter 9.4.2)

9.3 Installing the valve after service work

1. Mount actuator. See associated actuator documentation.

2. Adjust lower or upper signal bench range (see associated actuator documentation).
3. Put the control valve back into operation (see the 'Start-up' chapter). Observe the requirements and conditions for start-up or putting the device back into operation.

9.4 Service work

- ➔ Before performing any service work, preparations must be made to the control valve (see Chapter 9.2).
- ➔ After all service work is completed, check the control valve before putting it back into operation (see section 'Testing the installed valve' in the 'Installation' chapter).

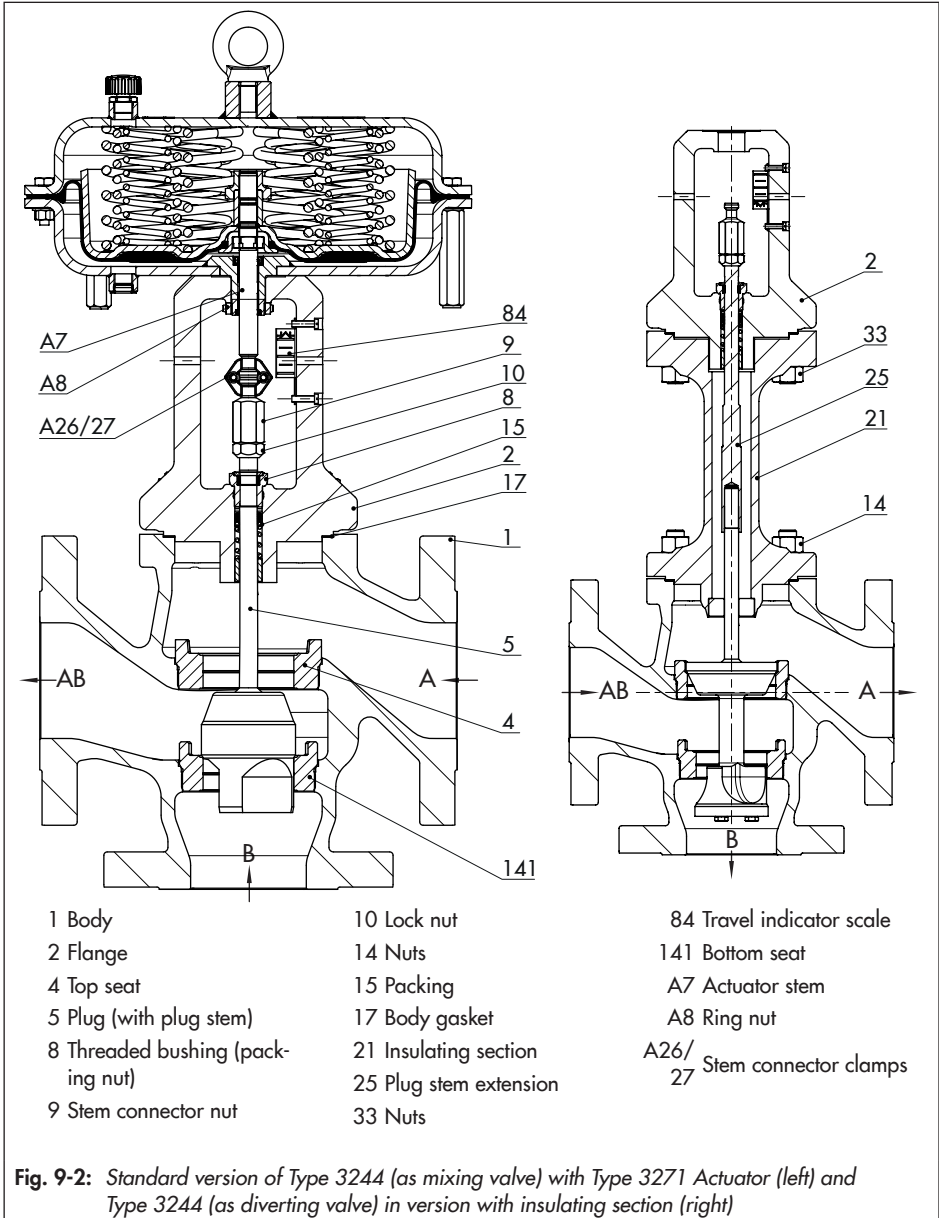


Fig. 9-2: Standard version of Type 3244 (as mixing valve) with Type 3271 Actuator (left) and Type 3244 (as diverting valve) in version with insulating section (right)

9.4.1 Replacing the gasket

NOTICE

Risk of control valve damage due to incorrect servicing.

- Only exchange the gasket in valves without pressure balancing.
- To replace the gasket in valve versions with pressure balancing, contact our after-sales service.

a) Standard version

1. Undo the body nuts (14) gradually in a crisscross pattern.
2. Unscrew the stem connector nut (9) and lock nut (10) from the plug stem (5).
3. Loosen the threaded bushing (8) to avoid damaging the packing.
4. Lift the flange (2) over the plug stem (5) off the body (1).
5. Remove the gasket (17). Carefully clean the sealing faces in the valve body (1) and on the flange (2).
6. Insert a new gasket (17) into the body.
7. Place the flange (2) onto the body (1).
Mixing valve with V-port plug: Align the V-port plug, making sure that the largest V-shaped port faces toward the side valve outlet (AB). See section 'Mounting the actuator onto the valve' in the 'Installation' chapter.
8. **Mixing valve <DN 32:** Firmly press the plug (5) into the bottom seat (141).

Diverting valve ≥DN 32: Firmly press the plug (5) into the top seat (4).

Mixing valve: Firmly press the plug (5) into the bottom seat (141).

Tighten the nuts gradually in a crisscross pattern. Observe tightening torques.

9. Tighten the threaded bushing (8). Observe tightening torques.
10. Loosely screw the lock nut (10) and stem connector nut (9) onto the plug stem (5).

b) Version with insulating section or bellows seal

1. Undo the body nuts (14) and nuts (33) on the insulating section or bellows seal gradually in a crisscross pattern.
2. Loosen the threaded bushing (8) to avoid damaging the packing.
3. Continue as described for the valve version concerned:
 - “Valves with insulating section for diverting valves ≤DN 25 and mixing valves” on page 9-9
 - “Valves with bellows seal for diverting valves ≤DN 25 and mixing valves” on page 9-10
 - “Valves with insulating section or bellows seal for diverting valves ≥DN 32” on page 9-11

Valves with insulating section for diverting valves ≤DN 25 and mixing valves

4. Unscrew the stem connector nut (9) and lock nut (10) from the plug stem extension (25).

Servicing

- Lift the flange (2) over the plug stem extension (25) off the insulating section (21).
- Remove the gasket (39). Carefully clean the sealing faces in the insulating section (21) and on the flange (2).
- Unthread the plug stem extension (25) from the plug stem (5). Make sure the two retaining washers (30) between the plug stem and plug stem extension are not lost.
- Lift the insulating section (21) over the plug stem (5) off the body (1).
- Remove the gasket (17). Carefully clean the sealing faces in the valve body (1) and on the insulating section (21).
- Insert a new gasket (17) into the body.
- Place the insulating section (21) over the plug stem (5) onto the body (1).
- Push the two retaining washers (30) onto the plug stem (5).
- Screw the plug stem extension (25) to the plug stem (5), making sure that the two retaining washers (30) are positioned correctly. Observe tightening torques.
- Place the flange (2) over the plug stem extension (25) onto the insulating section (21).

V-port plug: Align the V-port plug, making sure that the largest V-shaped port faces toward the side valve outlet **(AB)**. See section 'Mounting the actuator onto the valve' in the 'Installation' chapter.

- Firmly press the plug (5) into the bottom seat (141).

Fasten down the insulating section (21) with the body nuts (14). Tighten the nuts gradually in a crisscross pattern. Observe tightening torques.

- Tighten the threaded bushing (8). Observe tightening torques.
- Loosely thread the lock nut (10) and stem connector nut (9) onto the plug stem extension (25).

Valves with bellows seal for diverting valves \leq DN 25 and mixing valves

- Unscrew the stem connector nut (9) and lock nut (10) from the plug stem with bellows (37).
- Lift the flange (2) over the plug stem with bellows (37) off the bellows seal (22).
- Remove the gasket (39). Carefully clean the sealing faces in the bellows seal (22) and on the flange (2).
- Unscrew the bellows nut (41).
- Unthread the plug stem with bellows (37) from the plug stem (5). Make sure the two retaining washers (30) between the plug stem and plug stem with bellows are not lost.
- Lift the bellows seal (22) over the plug stem (5) off the body (1).
- Remove the gasket (17). Carefully clean the sealing faces in the valve body (1) and on the bellows seal (22).
- Insert a new gasket (17) into the body.
- Place the bellows seal (22) over the plug stem (5) onto the body (1).

13. Push the two retaining washers (30) onto the plug stem (5).
14. Screw the plug stem with bellows (37) to the plug stem (5), making sure that the two retaining washers (30) are positioned correctly. Observe tightening torques.
15. Place the flange (2) over the plug stem with bellows (37) onto the bellows seal (22).

V-port plug: Align the V-port plug, making sure that the largest V-shaped port faces toward the side valve outlet **(AB)**. See section 'Mounting the actuator onto the valve' in the 'Installation' chapter.
16. Screw the bellows nut (41) into the bellows seal (22) and tighten it. Observe tightening torques.
17. Firmly press the plug (5) into the bottom seat (141).

Fasten down the bellows seal (22) with the body nuts (14). Tighten the nuts gradually in a crisscross pattern. Observe tightening torques.
18. Tighten the threaded bushing (8). Observe tightening torques.
19. Loosely screw lock nut (10) and stem connector nut (9) onto the plug stem with bellows (37).
6. Remove the gasket (17). Carefully clean the sealing faces in the valve body (1) and on the insulating section (21) or bellows seal (22).
7. Insert a new gasket (17) into the body.
8. Place the insulating section (21) or bellows seal (22) together with the flange (2) and plug with plug stem (5) onto the body (1).
9. Screw tight the bottom plug (5). Observe tightening torques.

V-port plug: Align the V-port plug, making sure that the largest V-shaped port faces toward the side valve outlet **(AB)**. See section 'Mounting the actuator onto the valve' in the 'Installation' chapter.
10. Firmly press the plug (5) into the top seat (4).

Fasten down the insulating section (21) or bellows seal (22) with the body nuts (14). Tighten the nuts gradually in a crisscross pattern. Observe tightening torques.
11. Tighten the threaded bushing (8). Observe tightening torques.

Valves with insulating section or bellows seal for diverting valves \geq DN 32

4. Undo the bottom plug (5).
5. Lift the insulating section (21) or bellows seal (22) together with the flange (2) and plug with plug stem (5) off the body (1).

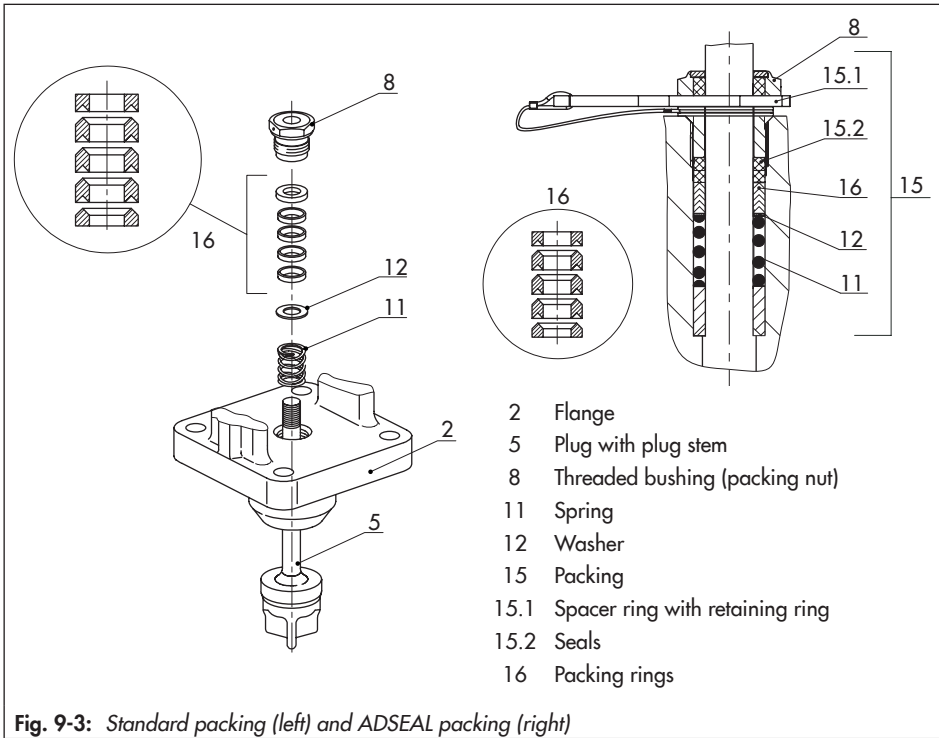


Fig. 9-3: Standard packing (left) and ADSEAL packing (right)

9.4.2 Replacing the packing

NOTICE

Risk of control valve damage due to incorrect servicing.

- The packing can only be replaced when all the following conditions are met:
- The valve does not have a balanced plug.
 - The valve does not have a bellows seal.
 - The standard or ADSEAL packing is installed in the valve.

→ To replace the packing in other valve versions, contact our after-sales service.

a) Standard version

Standard packing (PTFE)

1. Undo the body nuts (14) gradually in a crisscross pattern.
2. Unscrew the stem connector nut (9) and lock nut (10) from the plug stem (5).
3. Unscrew the threaded bushing (8).

4. Lift the flange (2) over the plug stem (5) off the body (1).
 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. Place the flange (2) onto the body (1).
Mixing valve with V-port plug: Align the V-port plug, making sure that the largest V-shaped port faces toward the side valve outlet (AB). See section 'Mounting the actuator onto the valve' in the 'Installation' chapter.
 9. 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).
 10. **Mixing valve <DN 32:** Firmly press the plug (5) into the bottom seat (141).
Diverting valve ≥DN 32: Firmly press the plug (5) into the top seat (4).
Mixing valve: Firmly press the plug (5) into the bottom seat (141).
 Tighten the nuts gradually in a crisscross pattern. Observe tightening torques.
 11. Screw in the threaded bushing (8) and tighten it. Observe tightening torques.
 12. Loosely screw the lock nut (10) and stem connector nut (9) onto the plug stem.
2. Slide the parts of the packing over the plug stem in the specified order:
 - Spring (11)
 - Shim (12)
 - Packing rings (16)
 3. Slide the seals (15.2) over the plug stem. Insert the wire of the red spacer ring (15.1) into the groove of the retaining ring. Slide the retaining ring over the plug stem.
 4. Insert the red spacer ring (15.1) between the threaded bushing (8) and retaining ring. See Fig. 9-3.
 5. Proceed as described in „Standard packing (PTFE)“, steps 10 to 12.

b) Version with insulating section

Standard packing (PTFE)

1. Unscrew the stem connector nut (9) and lock nut (10) from the plug stem extension (25).
2. Unscrew the threaded bushing (8).
3. Remove nuts (33) and bolts (32).
4. Carefully lift the flange (2) over the plug stem extension (25).
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 extension (25).

Servicing

8. Carefully place the flange (2) over the plug stem extension (25) onto the insulating section (21).

V-port plug: Align the V-port plug, making sure that the largest V-shaped port faces toward the side valve outlet (AB). See section 'Mounting the actuator onto the valve' in the 'Installation' chapter.

9. 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).
10. Fasten the flange with nuts (33) and bolts (32). Observe tightening torques.
11. Screw in the threaded bushing (8) and tighten it. Observe tightening torques.
12. Loosely screw the lock nut (10) and stem connector nut (9) onto the plug stem.

ADSEAL packing

1. Proceed as described in „Standard packing (PTFE)“, steps 1 to 8.
2. Slide the parts of the packing over the plug stem extension in the specified order:
 - Spring (11)
 - Shim (12)
 - Packing rings (16)
3. Slide the seals (15.2) over the plug stem extension.
Insert the wire of the red spacer ring (15.1) into the groove of the retaining ring.
Slide the retaining ring over the plug stem extension.

4. Insert the red spacer ring (15.1) between the threaded bushing (8) and retaining ring. See Fig. 9-3.
5. Proceed as described in „Standard packing (PTFE)“, steps 10 to 12.

9.4.3 Replacing the seat and plug

NOTICE

Risk of control valve damage due to incorrect servicing.

→ To replace seat and plug in the three-way valve, contact our after-sales service.

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 the Appendix for details on spare parts.

Lubricants

See document ► AB 0100 for details on suitable lubricants.

Tools

See document ► AB 0100 for details on suitable tools.

10 Decommissioning

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

⚠ DANGER

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

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

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

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

⚠ 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.

- Follow the standard operating procedures provided by the plant operator. In the event of a potential risk:
 - Allow components and pipelines to cool down or warm up to the ambient temperature.
 - Wear protective clothing and safety gloves.

⚠ WARNING

For valves with a bellows seal, there is a risk of personal injury due to pressurized components and as a result of process medium being discharged.

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

⚠ WARNING

Risk of hearing loss or deafness due to loud noise.

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

- Follow the standard operating procedures provided by the plant operator. In the event of a potential risk:
 - Wear hearing protection when working near the valve.

⚠ WARNING

Crush hazard arising from actuator and plug stem moving.

- Do not insert hands or finger into the yoke while the air supply is connected to the actuator.
- Before working on the control valve, disconnect and lock the pneumatic air supply as well as the control signal.

Decommissioning

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

WARNING

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

While the valve is operating, air is vented from the actuator, e.g. to change the valve's position or to open or close the valve.

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

WARNING

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

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

- Follow the standard operating procedures provided by the plant operator. In the event of a potential risk:
 - Wear protective clothing, safety gloves, respiratory protection and eye protection.
-

To put the control valve out of operation for service work or to remove it from the pipeline, proceed as follows:

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

11 Removal

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

⚠ WARNING

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

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

- Follow the standard operating procedures provided by the plant operator.
In the event of a potential risk:
 - Allow components and pipelines to cool down or warm up to the ambient temperature.
 - Wear protective clothing and safety gloves.

⚠ WARNING

Crush hazard arising from actuator and plug stem moving.

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

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

⚠ WARNING

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

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

- Follow the standard operating procedures provided by the plant operator.
In the event of a potential risk:
 - Wear protective clothing, safety gloves, respiratory protection and eye protection.

⚠ WARNING

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

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

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

Removal

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

- The control valve is put out of operation (see the 'Decommissioning' chapter).

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' chapter).
2. Unbolt the flanged joint.
3. Remove the valve from the pipeline (see the 'Shipment and on-site transport' chapter).

11.2 Removing the actuator from the valve

See associated actuator documentation.

12 Repairs

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

! NOTICE

Risk of valve damage due to incorrect service or repair work.

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

12.1 Returning devices to SAMSON

Defective devices can be returned to SAMSON for repair.

Proceed as follows to return devices:

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

- Completed Declaration on Contamination, which can be downloaded from our website at ▶ www.samsongroup.com > Service > After-sales Service > Returning goods.

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

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

i Note

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

13 Disposal



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

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

i Note

SAMSON can provide you with a recycling passport according to PAS 1049 on request. Simply e-mail us at aftersaleservice@samsongroup.com giving details of your company address.

Tip

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

14 Certificates

These declarations are included on the next pages:

- Declaration of conformity in compliance with Pressure Equipment Directive 2014/68/EU:
 - Country of origin: Germany, see page 14-2 to 14-3
 - Country of origin: France, see page 14-4 to 14-7
- Declaration of conformity in compliance with Machinery Directive 2006/42/EC for Types 3244-1 and 3244-7 Control Valves on page 14-8
- Declaration of incorporation in compliance with Machinery Directive 2006/42/EC for the Type 3244 Valve with other actuators other than Types 3271 and 3277 Actuators on page 14-9
- Declaration of conformity in compliance with the requirements in TSG D7002-2006 for Chinese pressure equipment on page 14-10

The certificates shown were up to date at the time of publishing. The latest certificates can be found on our website:

- ► www.samsongroup.com > *Products* > 3244

Other optional certificates are available on request.



SAMSON

EU-KONFORMITÄTSERKLÄRUNG EU DECLARATION OF CONFORMITY

Modul A/Module A

SAMSON erklärt in alleiniger Verantwortung für folgende Produkte:/For the following products, SAMSON hereby declares under its sole responsibility:

Geräte/Devices	Bauart/Series	Typ/Type	Ausführung/Version
Durchgangsventil/Globe valve	240	3241	DIN, Gehäuse GG, DN 65-125, Gehäuse GGG, DN 50-80, Fluide G2, L1, L2 ¹⁾ / DIN, body of cast iron, DN 65-125, body of spherical-graphite iron, DN 50-80, fluids G2, L1, L2 ¹⁾
Durchgangsventil/Globe valve	240	3241	DIN, Gehäuse Stahl u.a., DN 40-100, Fluide G2, L2 ²⁾ / DIN, body of steel, etc., DN 40-100, fluids G2, L2 ²⁾
Durchgangsventil/Globe valve	240	3241	ANSI, Gehäuse GG, Class 250, NPS 1 1/2 bis NPS 2, Class 125, NPS 2 1/2 bis NPS 4, Fluide G2, L1, L2 ¹⁾ / ANSI, body of cast iron, Class 250, NPS 1 1/2 to NPS 2, Class 125, NPS 2 1/2 to NPS 4, fluids G2, L1, L2 ¹⁾
Dreiweiventil/Three-way valve	240	3244	DIN, Gehäuse GG, DN 65-125, Gehäuse GGG, DN 50-80, Fluide G2, L1, L2 ¹⁾ / DIN, body of cast iron, DN 65-125, body of spherical-graphite iron, DN 50-80, fluids G2, L1, L2 ¹⁾
Dreiweiventil/Three-way valve	240	3244	DIN, Gehäuse Stahl u.a., DN 40-100, Fluide G2, L2 ²⁾ / DIN, body of steel, etc., DN 40-100, fluids G2, L2 ²⁾
Schrägsitzventil/Angle seat valve	---	3353	DIN, Rotzuggeshäuse, alle Fluide DIN, red brass body, all fluids
Schrägsitzventil/Angle seat valve	---	3353	DIN, Gehäuse Stahl, Fluide G2, L1, L2 ¹⁾ / DIN, body of steel, fluids G2, L1, L2 ¹⁾
Durchgangsventil/Globe valve	V2001	3321	DIN, Gehäuse GG, DN 65-100, Fluide G2, L1, L2 ¹⁾ / DIN, body of cast iron, DN 65-100, fluids G2, L1, L2 ¹⁾
Durchgangsventil/Globe valve	V2001	3321	ANSI, Gehäuse GG, NPS 2 1/2 bis NPS 4, Fluide G2, L1, L2 ¹⁾ / ANSI, body of cast iron, NPS 2 1/2 to NPS 4, fluids G2, L1, L2 ¹⁾
Dreiweiventil/Three-way valve	V2001	3323	DIN, Gehäuse GG, DN 65-100, Fluide G2, L1, L2 ¹⁾ / DIN, body of cast iron, DN 65-100, fluids G2, L1, L2 ¹⁾
Dreiweiventil/Three-way valve	V2001	3323	ANSI, Gehäuse GG, NPS 2 1/2 bis NPS 4, Fluide G2, L1, L2 ¹⁾ / ANSI, body of cast iron, NPS 2 1/2 to NPS 4, fluids G2, L1, L2 ¹⁾
Dreiweiventil/Three-way valve	250	3253	DIN, Gehäuse GG, DN 200 PN 10, Fluide G2, L1, L2 ¹⁾ / DIN, body of cast iron, DN 200 PN 10, fluids G2, L1, L2 ¹⁾

¹⁾ Gase nach Art. 4 Abs.1 Pkt. c.) zweiter Gedankenstrich//Gases according to Article 4(1)(c.i), second indent
Flüssigkeiten nach Art. 4 Abs.1 Pkt. c.iii//Liquids according to Article 4(1)(c.ii)

²⁾ Gase nach Art. 4 Abs.1 Pkt. c.i zweiter Gedankenstrich//Gases according to Article 4(1)(c.i), second indent
Flüssigkeiten nach Art. 4 Abs.1 Pkt. c.ii zweiter Gedankenstrich//Liquids according to Article 4(1)(c.ii), second indent

die Konformität mit nachfolgender Anforderung:/that the products mentioned above comply with the requirements of the following standards:

Richtlinie des Europäischen Parlaments und des Rates zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die Bereitstellung von Druckgeräten auf dem Markt/Directive of the European Parliament and of the Council on the harmonization of the laws of the Member States relating to the making available on the market of pressure equipment	2014/68/EU	vom 15. Mai 2014/ of 15 May 2014
Angewandtes Konformitätsbewertungsverfahren für Fluide nach Art. 4 Abs. 1/ Applied conformity assessment procedure for fluids according to Article 4(1)	Modul A/Module A	

Angewandte technische Spezifikation/Technical standards applied: DIN EN 12516-2, DIN EN 12516-3, ASME B16.34

Hersteller/Manufacturer: **SAMSON AG, Weismüllerstraße 3, 60314 Frankfurt am Main, Germany**

Frankfurt am Main, 23. Februar 2017/23 February 2017

Klaus Hörtschen

Klaus Hörtschen
Zentralabteilungsleiter/Head of Central Department
Entwicklung Ventile und Antriebe/R&D, Valves and Actuators

Dr. Michael Heß

Dr. Michael Heß
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Revision 02

EU DECLARATION OF CONFORMITY TRANSLATION



Module H / N° CE-0062-PED-H-SAM 001-22-DEU-rev-B

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

Devices	Series	Type	Version
Globe valve	240	3241	EN, body of gray cast iron from DN 150, body of spheroidal-graphite iron, from DN 100, fluids G2, L1, L2 ¹⁾ EN/ANSI, body of steel, etc., all fluids
Three-way valve	240	3244	EN, body of gray cast iron from DN 150, body of spheroidal-graphite iron, from DN 100, fluids G2, L1, L2 ¹⁾ EN/ANSI, body of steel, etc., all fluids
Cryogenic valve	240	3248	EN/ANSI, all fluids
Globe valve	250	3251	EN/ANSI, all fluids
Globe valve	250	3251-E	EN/ANSI, all fluids
Three-way valve	250	3253	EN/ANSI, body of steel, etc., all fluids
Globe valve	250	3254	EN/ANSI, all fluids
Angle valve	250	3256	EN/ANSI, all fluids
Split-body valve	250	3258	EN, all fluids
Angle valve (IG standards)	250	3259	EN, all fluids
Globe valve	V2001	3321	EN, body of steel, etc., all fluids ANSI, all fluids
Three-way valve	V2001	3323	EN, body of steel, etc., all fluids ANSI, all fluids
Angle seat valve	---	3353	EN, body of steel, etc., all fluids
Silencer	3381	3381-1	EN/ANSI, single attenuation plate with welding ends, all fluids
		3381-3	EN/ANSI, all fluids
		3381-4	EN/ANSI, single attenuation plate multi-stage with welding ends, all fluids
Globe valve	240	3241	ANSI, body of gray cast iron, Class 125, from NPS 5, fluids G2, L1, L2 ¹⁾
Cryogenic valve	240	3246	EN/ANSI, all fluids
Three-way valve	250	3253	EN, body of gray cast iron from DN200 PN16, fluids G2, L1, L2 ¹⁾
Globe valve	290	3291	ANSI, all fluids
Angle valve	290	3296	ANSI, all fluids
Cryogenic valve	---	3588	ANSI, up to NPS 6, Class 600, all fluids
Globe valve	590	3591	ANSI, all fluids
Angle valve	590	3596	ANSI, all fluids
Cryogenic valve	590	3598	ANSI, NPS 3 to NPS 8, Class 900, all fluids
Control valve	590	3595	ANSI, all fluids
Globe valve	SMS	241GR	EN/ANSI, all fluids
Globe valve	SMS	251GR	EN/ANSI, all fluids
Globe valve	SMS	261GR	EN/ANSI, all fluids

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

that the products mentioned above comply with the requirements of the following standards:

Directive of the European Parliament and of the Council on the harmonization of the laws of the Member States relating to the making available on the market of pressure equipment	2014/68/EU	of 15 May 2014
Applied conformity assessment procedure for fluids according to Article 4(1)	Module H	Certificate-No.: N°CE-0062-PED-H-SAM 001-22-DEU-rev-B by Bureau Veritas 0062

The manufacturer's quality management system is monitored by the following notified body:
Bureau Veritas Services SAS, 4 place des Saisons, 92400 Courbevoie, France
Applied harmonised standards and technical specifications:
EN 16668 (incl. EN 12516-2, EN 12516-3, EN 12266-1), ASME B16.34

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

Frankfurt am Main, February 17, 2025

Andreas Widl

Dr. Andreas Widl
Chief Executive Officer (CEO)

i.v. Krause

Sebastian Krause
Vice President Product Development

Revision 13

Classification: Public · SAMSON AKTIENGESELLSCHAFT · Weismüllerstrasse 3 · 60314 Frankfurt am Main, Germany

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DECLARATION UE DE CONFORMITE EU DECLARATION OF CONFORMITY

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DC014
2022-05

Module A / Modul A

Par la présente, SAMSON REGULATION SAS déclare sous sa seule responsabilité pour les produits suivants :
For the following products, SAMSON REGULATION SAS hereby declares under its sole responsibility:

Appareils / Devices	Type	Exécution / Version	Matériel du corps / body Material	PN Class	DN NPS	Fluides / fluids
Vanne de décharge / Back pressure reducing valve	2371-0	DIN	Acier / steel	$P_{max T=20^{\circ}C}$ 10 bar	DN 32 – 50	Tous fluides / all fluids
		ANSI		$P_{max T=70^{\circ}F}$ 150 psi	NPS 1 ¼ – 2	
Détendeur alimentaire / Pressure reducing valve	2371-1	DIN	Acier / steel	$P_{max T=20^{\circ}C}$ 10 bar	DN 32 – 50	Tous fluides / all fluids
		ANSI		$P_{max T=70^{\circ}F}$ 150 psi	NPS 1 ¼ – 2	
Vanne de régulation passage droit / Globe valve	2423	à membrane with diaphragm	Fonte grise / cast iron	PN25	DN 65 – 125	G2 (L2 1)
		à soufflet with bellow	Fonte sphéroïdale / spheroidal graphite iron	PN25	DN 50 – 125	
			Acier / steel	PN16	DN 65 – 100	
				PN25 PN40	DN 50 – 100 DN 40 – 100	
Vanne de régulation passage droit / Globe valve	3241	DIN	Fonte grise / cast iron	PN10	DN 125 – 150	G2, L1, L2 1)
		DIN	Fonte grise & fonte sphéroïdale / cast iron & spheroidal graphite iron	PN16	DN 65 – 125	
		DIN	Fonte sphéroïdale / spheroidal graphite	PN 25	DN 50 – 80	
		ANSI	Fonte grise / cast iron	CI 125 CI 250	NPS 2 ½ - 4 NPS 1 ½ - 2	
		DIN	Acier / steel	PN10	DN 32 – 100	
				PN16 PN25	DN 32 – 50 DN 32 – 40	
ANSI	CI 150	NPS 1 ¼ - 2				
Vanne de régulation 3 voies / 3-way Valve	3244	DIN	Fonte grise / cast iron	PN10 PN16	DN 125 – 150 DN 65 – 125	G2, L1, L2 1)
		DIN	Acier / steel	PN10	DN 32 – 100	Tous fluides / all fluids
				PN16	DN 32 – 50	
				PN25	DN 32 – 40	
ANSI	CI 150	NPS 1 ¼ - 2				
Vanne de régulation passage droit / Globe valve	3251	DIN	Acier / steel	PN16	DN 32 – 50	Tous fluides / all fluids
		ANSI		CI 150	NPS 1 ½ - 2	
Vanne équerre / Angle valve	3256	DIN	Acier / steel	PN16	DN 32 – 50	Tous fluides / all fluids
		ANSI		CI 150	NPS 1 ¼ - 2	
Vanne à segment sphérique / Segment ball valve	3310	DIN	Acier / steel	PN10 PN16 PN25	DN 40 – 50 DN 80 – 100 DN 40	Tous fluides / all fluids
		ANSI		CI 150	NPS 1 ½ - 2	
		DIN		PN16	DN 65 – 100	
Vanne de régulation passage droit / Globe valve	3321	ANSI	Fonte grise / cast iron	CI 125	NPS 2 ½ - 4	G2, L1, L2 1)
		DIN	Fonte sphéroïdale / spheroidal graphite iron	PN25	DN 50 – 80	
		ANSI	Acier / steel	CI 150	NPS 1 ½ - 2	
				CI 125	NPS 2 ½ - 4	
Vanne de régulation 3 voies / 3-way Valve	3323	DIN	Fonte grise / cast iron : GJL-250	PN16	DN 65 – 100	G2, L1, L2 1)
		DIN	Fonte sphéroïdale / spheroidal graphite iron	PN25	DN 50 – 80	
Vanne papillon / Butterfly valve	3331	DIN	Acier / steel	PN10	DN 100	Tous fluides / all fluids
Vanne à membrane / Diaphragm valve	3345	DIN	Acier / steel	$P_{max T=20^{\circ}C}$ 10 bar	DN 32 – 100	Tous fluides / all fluids
		ANSI		$P_{max T=20^{\circ}C}$ 16 bar	DN 32 – 50	
		DIN	Fonte grise & fonte sphéroïdale / cast iron & spheroidal graphite iron	$P_{max T=70^{\circ}F}$ 150 psi or 230 psi	NPS 1 ¼ – 2	
				$P_{max T=20^{\circ}C}$ 10 bar $P_{max T=20^{\circ}C}$ 16 bar $P_{max T=20^{\circ}C}$ 40 bar	DN 125 – 150 DN 65 – 125 DN 40 – 50	
ANSI	$P_{max T=70^{\circ}F}$ 150 psi $P_{max T=70^{\circ}F}$ 230 psi $P_{max T=70^{\circ}F}$ 580 psi	NPS 2 ½ – 4 NPS 2 ½ – 5 NPS 1 ½ – 2				



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DC014
2022-05

Module A / Modul A

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

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

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

La Directive du Parlement Européen et du Conseil d'harmonisation des lois des Etats Membres concernant la mise à disposition sur le marché d'équipements sous pression / Directive of the European Parliament and of the Council on the Harmonization of the laws of the Member States relating to the making available on the market of pressure equipment	2014/68/UE 2014/68/EU	Du / of 15.05.2014
Procédure d'évaluation de la conformité appliquée pour les fluides selon l'Article 4 § 1 Applied conformity assessment procedure for fluids according to Article 4 § 1	Module A / Modul A	

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

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

Vaulx-en-Velin, le 23/05/22

Bruno Soulas
Directeur Stratégie et Développement / Head of Strategy and
Development

Joséphine Signoles-Fontaine
Responsable du service QSE / Head of QSE Department



DECLARATION UE DE CONFORMITE EU DECLARATION OF CONFORMITY

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Module H / Modul H, N°/ Nr CE-0062-PED-H-SAM 001-23-FRA-rev-A

DC012
2023-12

Par la présente, SAMSON REGULATION SAS déclare sous sa seule responsabilité pour les produits suivants :
For the following products, SAMSON REGULATION SAS hereby declares under its sole responsibility:

Appareils / Devices	Type	Exécution / Version	Matériel du corps / body Material	PN Class	DN NPS	Fluides / fluids	
Vanne de régulation passage droit / globe valve	3241	DIN	Fonte grise & fonte sphéroïdale / cast iron & spheroidal graphite iron	PN 16	DN 150	G2, L1, L2 1)	
		ANSI		CI 125	NPS 6		
		DIN	Fonte sphéroïdale / spheroidal graphite iron	PN 25	DN 100 – 150		
		DIN	Acier / steel	PN10 PN16 PN25 PN40	DN 125 – 150 DN 65 – 150 DN 50 – 150 DN 32 – 150		Tous fluides / all fluids
		ANSI		CI 150 CI 300	NPS 2 ½ – 6 NPS 1 ½ – 6		
DIN	Fonte grise / cast iron	PN 16	DN 150	G2, L1, L2 1)			
Vanne de régulation 3 voies / 3-way Valve	3244	DIN	Acier / steel	PN10 PN16 PN25 PN40	DN 125 – 150 DN 65 – 150 DN 50 – 150 DN 32 – 150	Tous fluides / all fluids	
		ANSI		CI 150 CI 300	NPS 2 ½ – 6 NPS 1 ½ – 6		
		DIN		Acier / steel	PN16 PN25 PN40 – 400		DN 65 – 150 DN 50 – 150 DN 32 – 150
ANSI	CI 150 CI 300 - 2500	NPS 2 ½ – 6 NPS 1 ½ – 6					
Vanne haute pression / High pressure valve	3252	DIN	Acier / steel	PN40 – 400	DN 32 – 80	Tous fluides / all fluids	
		ANSI		CI 300 - 2500	NPS 1 ½ – 3		
Vanne équerre / Angle valve	3256	DIN	Acier / steel	PN16 PN40 – 400	DN 65 – 150 DN 32 – 150	Tous fluides / all fluids	
		ANSI		CI 150 CI 300 – 2500	NPS 2 ½ – 6 NPS 1 ½ – 6		
Vanne à segment sphérique / Segment ball valve	3310	DIN	Acier / steel	PN10 PN16 PN25 PN40	DN 150 DN 80 – 150 DN 50 – 150 DN 40 – 150	Tous fluides / all fluids	
		ANSI		CI 150 CI 300	NPS 3 – 6 NPS 1 ½ – 6		
Vanne de régulation passage droit / globe valve	3321	DIN	Fonte sphéroïdale / spheroidal graphite iron	PN 25	DN 100	G2, L1, L2 1)	
		DIN	Acier / steel	PN16 PN40	DN 65 – 100 DN 32 – 100	Tous fluides / all fluids	
		ANSI		CI 150 CI 300	NPS 2 ½ – 4 NPS 1 ½ – 4		
Vanne de régulation 3 voies / 3-way Valve	3323	DIN	Fonte sphéroïdale / spheroidal graphite iron	PN 25	DN 100	G2, L1, L2 1)	
		DIN	Acier / steel	PN16 PN40	DN 65 – 100 DN 32 – 100	Tous fluides / all fluids	
		ANSI		CI 150 CI 300	NPS 2 ½ – 4 NPS 1 ½ – 2		
Vanne papillon / Butterfly valve	3331	DIN	Acier / steel	PN10 PN16 – 50	DN 150 – 400 DN 100 – 400	Tous fluides / all fluids	
		ANSI		CI 150 – 300	NPS 4 – 16		
Vanne à membrane / Diaphragm valve	3345	ANSI	Fonte grise & fonte sphéroïdale / cast iron & spheroidal graphite iron	P _{max} T= 70°F 150 psi P _{max} T= 70°F 230 psi	NPS 5 – 6 NPS 6	G2, L1, L2 1)	
			Acier / steel	P _{max} T= 70°F 150 - 230 psi	NPS 2 ½ – 6	Tous fluides / all fluids	



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Module H / Modul H, N°/ Nr CE-0062-PED-H-SAM 001-23-FRA-rev-A

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Apareils / Devices	Type	Exécution / Version	Matériel du corps / body Material	PN Class	DN NPS	Fluides / fluids
Vanne alimentaire / Sanitary valve	3347	DIN	Acier / steel	P _{max} T = 20°C : 16 bar P _{max} T = 20°C : 40 bar P _{max} T = 20°C : 63 bar	DN 150 DN 65 – 150 DN 32 – 150	G2, L1, L2 ¹⁾
		ANSI		P _{max} T = 70°F : 230 psi P _{max} T = 70°F : 580 psi P _{max} T = 70°F : 910 psi	NPS 6 NPS 2 ½ – 6 NPS 1 ¼ – 6	
Vanne aseptique / Aseptic valve	3349_HV01	DIN	Acier / steel	P _{max} T = 20°C : 16 bar P _{max} T = 20°C : 25 bar	DN 65 – 100 DN 50 – 100	Tous fluides / all fluids
		ANSI		P _{max} T = 70°F : 230 psi P _{max} T = 70°F : 360 psi	NPS 2 ½ – 4 NPS 2 – 4	
Vanne Tout ou Rien / On-Off Valve	3351	DIN	Fonte sphéroïdale / spheroidal graphite iron	PN 25	DN 100	G2, L1, L2 ¹⁾
		DIN	Acier / steel	PN16 PN25 PN40	DN 65 – 100 DN 50 – 100 DN 32 – 100	Tous fluides / all fluids
		ANSI		CI 150 CI 300	NPS 2 ½ – 4 NPS 1 ½ – 4	
Bride de mesure / Measure flange	5090	DIN	Acier / steel	PN10	DN 400 – 500	G2, L2 ¹⁾
				PN16	DN 250 – 500	
				PN25	DN 150 – 500	
				PN40	DN 125 – 500	

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

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

La Directive du Parlement Européen et du Conseil d'harmonisation des lois des Etats Membres concernant la mise à disposition sur le marché d'équipements sous pression / Directive of the European Parliament and of the Council on the Harmonization of the laws of the Member States relating of the making available on the market of pressure equipment	2014/68/UE 2014/68/EU	Du / of 15.05.2014
Procédure d'évaluation de la conformité appliquée pour les fluides selon l'Article 4 § 1 Applied conformity assessment procedure for fluids according to Article 4 § 1	Module H / Modul H	Certificat n° CE- 0062-PED-H-SAM 001-23-FRA-rev-A

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

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

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

Vaulx-en-Velin, le 14/12/23

Bruno Soulas
Directeur Général – Directeur Stratégie et Développement /
Director general - Head of Strategy and Development

Joséphine Signoles-Fontaine
Responsable du service QSE / Head of QSE department

SAMSON REGULATION - 1 rue Jean Corona - 69120 Vaulx-en-Velin
Tél.: +33 (0)4 72 04 75 00 • Fax: +33 (0)4 72 04 75 75 • E-mail: france@samsongroup.com Internet: www.samson.fr

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 FR763004018570002200215245 • BIC (code SWIFT) BNPFRFP3

Crédit Lyonnais

N° compte 0000060035B41 • Banque 3000201936
IBAN FR9830002019360000060035B41 • BIC (code SWIFT) CRLYFRPP

EU DECLARATION OF CONFORMITY TRANSLATION



Declaration of Conformity of Final Machinery

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

For the following products:

Types 3244-1/-7 Pneumatic Control Valves consisting of the Type 3244 Valve and Type 3271/Type 3277 Pneumatic Actuator

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

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

- Type 3244 Valve (DIN): Mounting and Operating Instructions EB 8026
- Type 3244 Valve (ANSI): Mounting and Operating Instructions EB 8026
- Types 3271 and 3277 Actuators: Mounting and Operating Instructions EB 8310-X

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

Referenced technical standards and/or specifications:

- VCI, VDMA, VGB: "Leitfaden Maschinenrichtlinie (2006/42/EG) – Bedeutung für Armaturen, Mai 2018" [German only]
- VCI, VDMA, VGB: "Zusatzdokument zum „Leitfaden Maschinenrichtlinie (2006/42/EG) – Bedeutung für Armaturen vom Mai 2018" [German only], based on DIN EN ISO 12100:2011-03

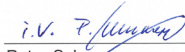
Comment:

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

Persons authorized to compile the technical file:

SAMSON AG, Weismüllerstraße 3, 60314 Frankfurt am Main, Germany
Frankfurt am Main, 19 May 2020


Thorsten Muth
Senior Director
Sales and After-sales


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

Revision no. 00

DECLARATION OF INCORPORATION TRANSLATION



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

For the following products:

Type 3244 Pneumatic Control Valve

We certify that the Type 3244 Pneumatic Control Valves are partly completed machinery as defined in the Machinery Directive 2006/42/EC and that the safety requirements stipulated in Annex I, 1.1.2, 1.1.3, 1.1.5, 1.3.2, 1.3.4 and 1.3.7 are observed. The relevant technical documentation described in Annex VII, part B has been compiled.

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

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

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

For product descriptions of the valve, refer to:

- Type 3244 Valve (DIN): Mounting and Operating Instructions EB 8026
- Type 3244 Valve (ANSI): Mounting and Operating Instructions EB 8026

Referenced technical standards and/or specifications:

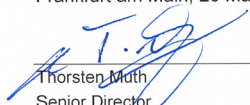
- VCI, VDMA, VGB: Leitfaden Maschinenrichtlinie (2006/42/EG) – Bedeutung für Armaturen, May 2018 [German only]
- VCI, VDMA, VGB: Zusatzdokument zum „Leitfaden Maschinenrichtlinie (2006/42/EG) – Bedeutung für Armaturen“ vom Mai 2018 [German only], based on DIN EN ISO 12100:2011-03

Comments:


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

Persons authorized to compile the technical file:

SAMSON AG, Weismüllerstraße 3, 60314 Frankfurt am Main, Germany
Frankfurt am Main, 20 May 2020



Thorsten Muth
Senior Director
Sales and After-sales



i.v. P. Scheermesser
Director
Product Life Cycle Management and ETO
Development for Valves and Actuators

Revision no. 00

**DECLARATION OF CONFORMITY**

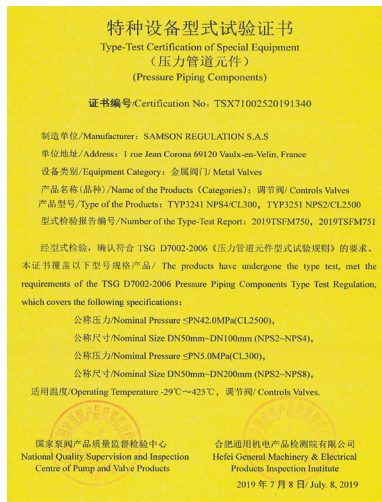
For the following products

DC016**2019-08****Type 3241, 3244, 3249, 3251, 3252, 3256, 3347, 3321, 3349 Control Valve****Certificate nb°: TSX71002520191340****Test report nb°: 2019TSFM750-TYP3241
and 2019TSFM751-TYP3251**

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

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

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



SAMSON REGULATION S.A.

Bruno Soulas
Head of Administration

SAMSON REGULATION S.A.

Joséphine Signoles-Fontaine
QSE Manager

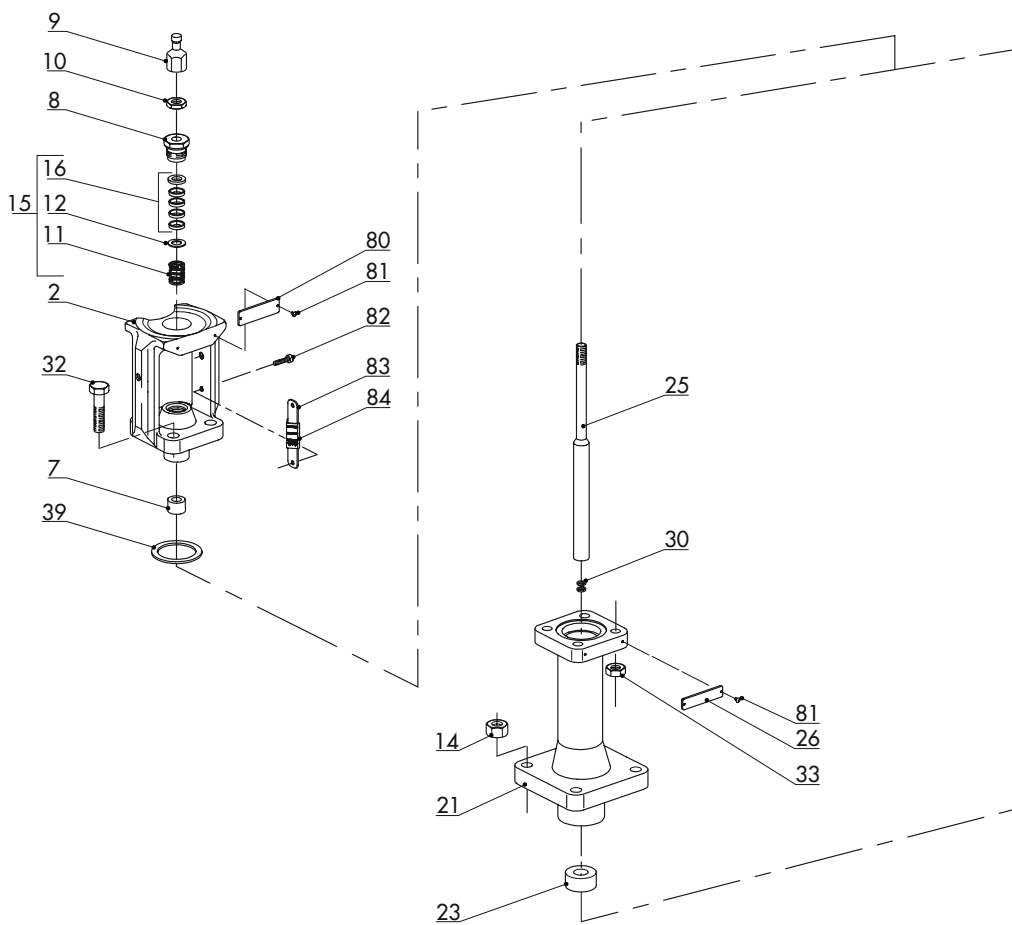
15 Appendix

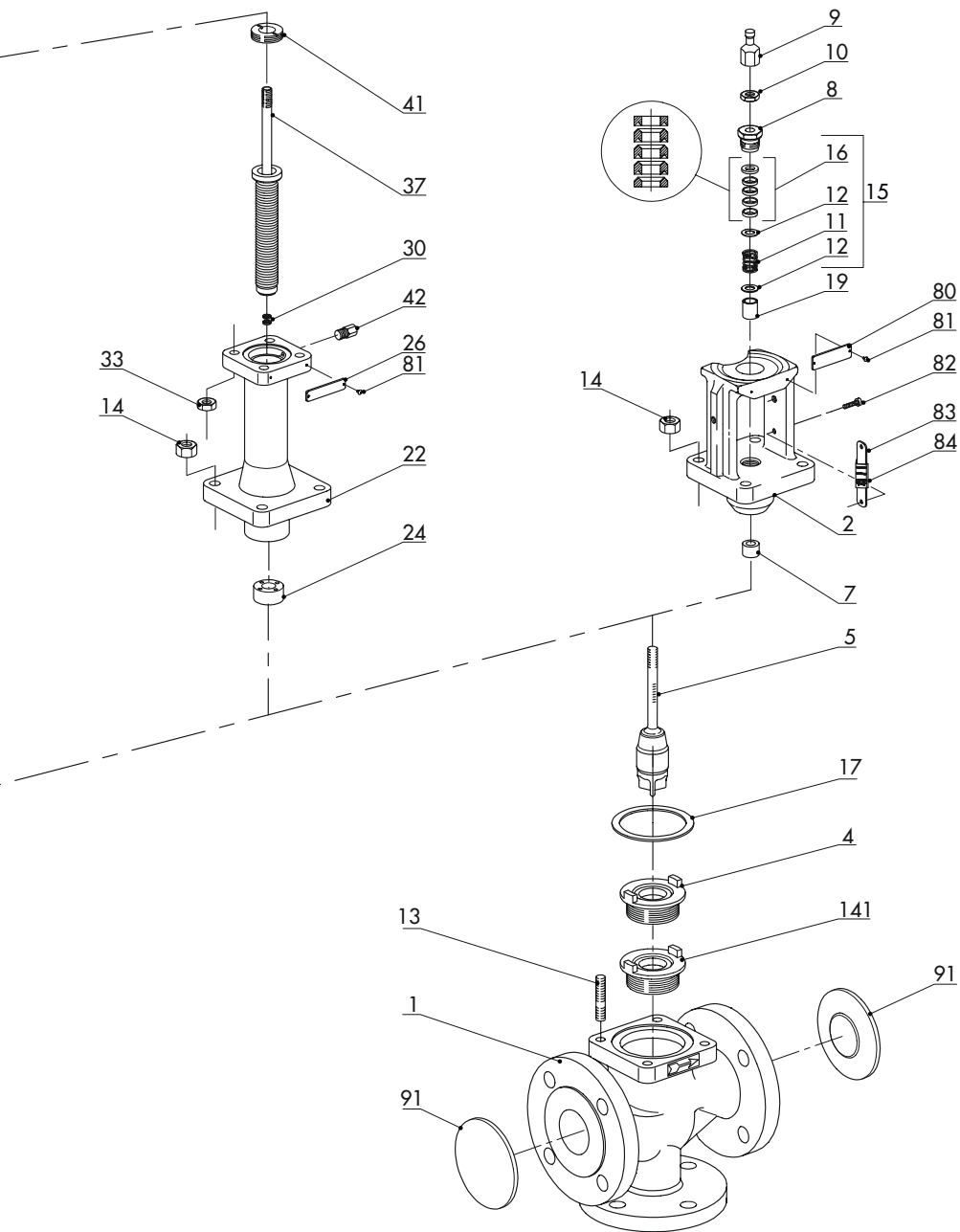
15.1 Tightening torques, lubricants and tools

▶ AB 0100 for tools, tightening torques and lubricants

15.2 Spare parts

1	Body	24	Guide bushing (bellows seal)
2	Flange	25	Plug stem extension
4	Top seat	26	Label (bellows seal or insulating section)
5	Plug (with plug stem)	30	Retaining washers
7	Guide bushing (flange)	32	Bolt
8	Threaded bushing (packing nut)	33	Nut
9	Stem connector nut	37	Plug stem with bellows
10	Lock nut	39	Gasket
11	Spring	41	Nut
12	Washer	42	Screw plug with seal
13	Stud bolt	80	Nameplate
14	Body nut	81	Grooved pin
15	Packing	82	Screw
16	V-ring packing	83	Hanger
17	Body gasket	84	Travel indicator scale
19	Bushing	85	Screw
21	Insulating section	91	Protective cap
22	Bellows seal	141	Bottom seat
23	Guide bushing (insulating section)		





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 cu.ft./min or m³/h
- Bench range of the actuator (e.g. 0.2 to 1 bar)
- Is a strainer installed?
- Installation drawing

EB 8026 EN



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