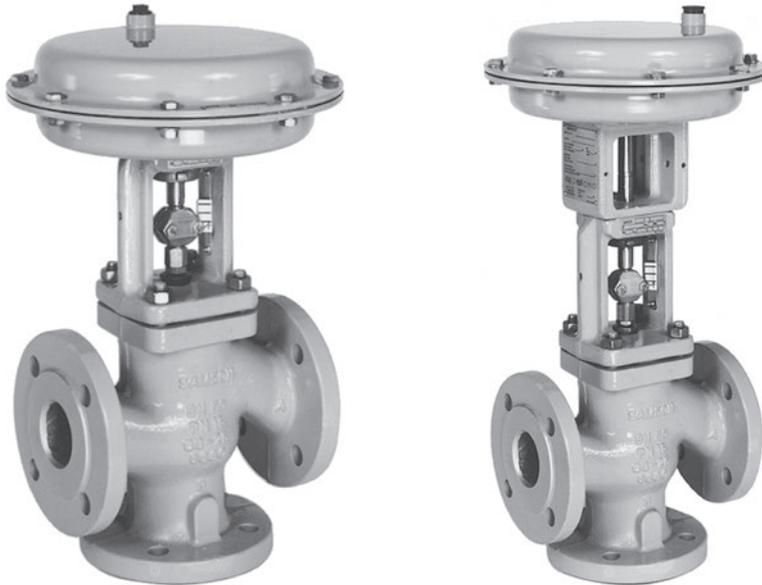


Type 3244 Valve

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

DIN and ANSI versions

SAMSON



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

Translation of original instructions

Mounting and Operating Instructions

EB 8026 EN

Edition August 2016

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.

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



The mounting and operating instructions for the devices are included in the scope of delivery. The latest documentation is available on our website (www.samson.de) > Product documentation. You can enter the document number or type number in the [Find:] field to look for a document.

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 applications that meet the specifications used for sizing the valve at the ordering stage. In case operators intend to use the control valve in other applications or conditions than specified, SAMSON must be contacted.

SAMSON does not assume any liability for damage resulting from the failure to use the valve 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 in the technical data
- Use outside the limits defined by the valve accessories mounted on 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 in these instructions

Qualifications of operating personnel

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

Personal protective equipment

We recommend wearing the following protective equipment depending on the process medium:

- Protective clothing, gloves and eyewear in applications with hot, cold, and/or corrosive media
 - Wear hearing protection when working near the valve.
- Check with the plant operator for details on further protective equipment.

Revisions and other modifications

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

Safety devices

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

Warning against residual hazards

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

Responsibilities of the operator

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

Responsibilities of operating personnel

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

Referenced standards and regulations

The control valves comply with the requirements of the European Pressure Equipment Directive 2014/68/EU. Valves with a CE marking have a declaration of conformity, which includes information about the applied conformity assessment procedure. This declaration of conformity is included in the Appendix of these instructions (see section 10.2).

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

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

Referenced documentation

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

- Mounting and operating instructions for mounted actuator, e.g. ▶ EB 8310-X for Type 3271 and Type 3277 Actuators
- Mounting and operating instructions for mounted valve accessories (positioner, solenoid valve etc.)
- ▶ AB 0100 for tools, tightening torques, and lubricant
- For oxygen service: Manual ▶ H 01

1.1 Notes on possible severe personal injury

DANGER

Risk of bursting in pressure equipment.

Control valves and pipelines are pressure equipment. Improper opening can lead to valve components bursting.

- Before starting any work on the control valve, depressurize all plant sections concerned as well as the valve.
- Drain the process medium from all the plant sections concerned as well as the valve.
- Wear personal protective equipment.

1.2 Notes on possible personal injury

WARNING

Crush hazard arising from moving parts.

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

- Do not insert hands or finger into the yoke while the valve is in operation.
- While working on the control valve, disconnect and lock the pneumatic air supply as well as the control signal.

Risk of personal injury when the actuator vents.

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

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

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

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

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

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

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

- If possible, drain the process medium from all the plant sections concerned and the valve.
- Wear protective clothing, safety gloves, and eyewear.

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

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

- Allow components and pipelines to cool down or heat up.
- Wear protective clothing and safety gloves.

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.
- Observe the maximum permissible pressure for valve and plant.

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 valve.

! NOTICE

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

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

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

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

Certain tools are required to work on the valve.

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

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

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

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

2 Markings on the control valve

2.1 Valve nameplate

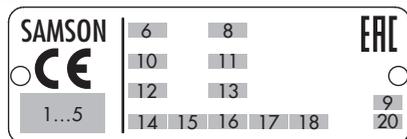


Fig. 1: Valve nameplate

- 1...5 PED (Pressure Equipment Directive), "Art. 4, Abs. 3"
ID of the notified body, fluid group, and category
- 6 Type designation
- 8 Material
- 9 Year of manufacture
- 10 Valve size:
DIN: DN · ANSI: NPS · JIS: DN ... A/B
- 11 Pressure rating:
DIN: PN · ANSI: CL · JIS: K
- 12 Order no. with modification index
For after-sales service orders: AA prefix
- 13 Position in order
For after-sales service orders: configuration ID
- 14 Flow coefficient:
DIN: K_{VS} · ANSI: C_V · JIS: C_V
- 15 Characteristic:
Lin: linear
- 16 Seat/plug seal:
ME: metal (see section 3.3)
HA: carbide metal
ST: Stellite® facing
- 17 Seat code (trim material) · On request
- 18 Version:
Mixing valve: M · Diverting valve: V
- 20 Country of origin

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

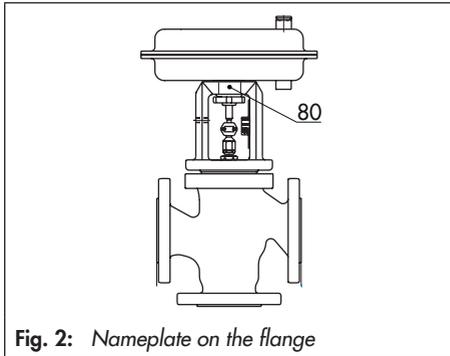


Fig. 2: Nameplate on the flange

2.2 Actuator nameplate

See associated actuator documentation.

2.3 Material number

The seat and plug of the valves have an article number written on them. Specifying this article number, you can contact us to find out which material is used. Additionally, a seat code is used to identify the trim material. This seat code is specified on the nameplate (17). For more details on the nameplate, see section 2.1.

3 Design and principle of operation

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 (see Fig. 3). It can also be combined with other actuators.

The two seats (4 and 141) and plug with plug stem (5) are assembled 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 (see section 3.1). 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).

In diverting valves, the process medium enters at the valve port **AB** and the partial flows exit at ports **A** and **B** (see Fig. 4).

3.1 Fail-safe positions

The fail-safe position depends on the actuator used.

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

Actuator stem extends (FA)

When the signal pressure is reduced or the power supply fails, the springs move the actuator stem downward, closing port **B** in the mixing valve or port **A** in the diverting valve.

Legend for Fig. 3 and Fig. 4

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

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

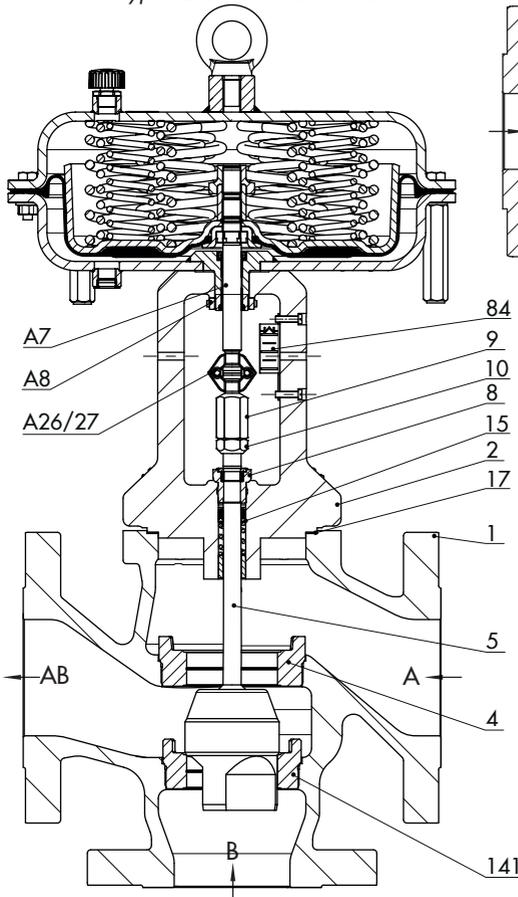
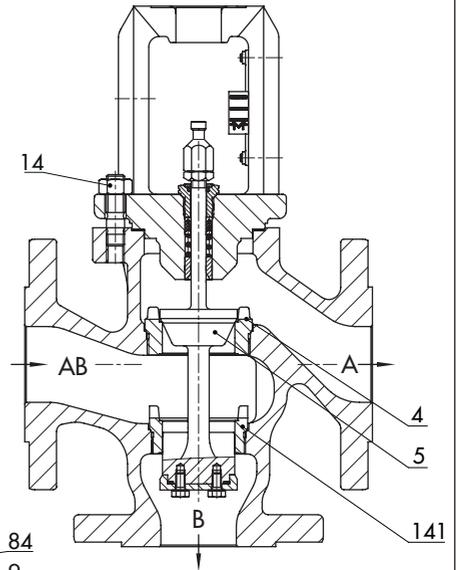


Fig. 4: Type 3244 Valve (as diverting valve)



Actuator stem retracts (FE)

When the signal pressure is reduced or the power supply fails, the springs move the actuator stem upward, closing port **A** in the mixing valve or port **B** in the diverting valve.



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*

3.2 Versions

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

Actuators

In these instructions, the preferable combination with a 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.

3.3 Technical data

The nameplates on the valve and actuator provide information on the control valve version. See section 2.1 and the actuator documentation.

i Note

More information is available in Data Sheet
► *T 8026.*

Compliance

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

Temperature range

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

Noise emission

SAMSON is unable to make general statements about noise emission as it depends on the valve version, plant facilities, and process medium. On request, SAMSON can perform calculations according to IEC 60534, Part 8-3 and Part 8-4 or VDMA 24422 (edition 89).

⚠ WARNING

Risk of hearing loss or deafness due to loud noise.

Wear hearing protection when working near the valve.

Dimensions and weights

Table 1 to Table 4 provide a summary 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 p. 19.

i Note

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

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

Table 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

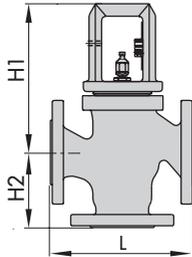
Table 2: *Dimensions of the standard version of Type 3244 Valve (ANSI version)*

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

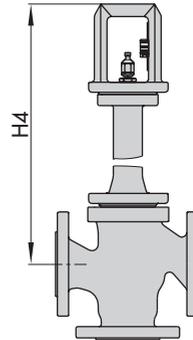
Table 3: *Dimensions for version with insulating section or bellows seal*

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

Dimensional drawings



Standard version of Type 3244



Type 3244 with insulating section or bellows seal

Table 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	Short insulating section/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 insulating section/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 Measures for preparation

After receiving the shipment, proceed as follows:

1. Check the scope of delivery. Compare the shipment received against the delivery note.
2. Check the shipment for transportation damage. Report any damage to SAMSON and the forwarding agent (refer to delivery note).

4.1 Unpacking

i Note

Do not remove the packaging until immediately before installing the valve into the pipeline.

Proceed as follows to lift and install the valve:

1. Remove the packaging from the valve.
2. Dispose of the packaging in accordance with the valid regulations.

! NOTICE

*Risk of valve damage due to foreign particles entering the valve.
The protective caps fitted on the valve's inlet and outlet prevent foreign particles from entering the valve and damaging it.
Do not remove the protective caps until immediately before installing the valve into the pipeline.*

4.2 Transporting and lifting

! DANGER

*Hazard due to suspended loads falling.
Stay clear of suspended or moving loads.*

! WARNING

Risk of lifting equipment tipping 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, if applicable).
- Refer to section 3.3 or Data Sheet
▶ T 8026 for weights.

! WARNING

Risk of personal injury due to control valve tipping.

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

! NOTICE

*Risk of valve damage due to incorrectly attached slings.
The welded-on lifting eyelet on SAMSON actuators is only intended for mounting and removing the actuator as well as lifting the actuator without valve. Do not use this lifting eyelet 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 section 4.2.2).

**Tip**

SAMSON's After-sales Service department can provide more detailed transport and lifting instructions on request.

4.2.1 Transporting

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 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 SAMSON's After-sales Service department for the transportation temperatures of other valve versions.

4.2.2 Lifting

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

Lifting instructions

- 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.
- 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 lifting eyelet 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. 5).
2. If necessary, attach another sling to the lifting eyelet on the actuator and to the rigging equipment.
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 section 5.2.3).
6. After installation in the pipeline, check whether the flanges are bolted tight and the valve in the pipeline holds.
7. Remove slings.

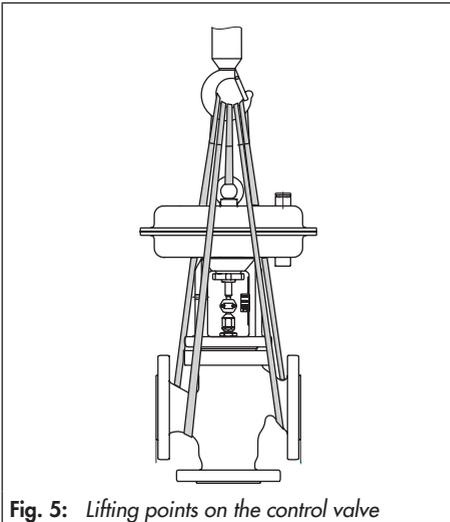


Fig. 5: Lifting points on the control valve

Tip

We recommend using a hook with safety latch (see Fig. 5). The safety latch prevents the slings from slipping during lifting and transporting.

4.3 Storage

NOTICE

Risk of valve damage due to improper storage.

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

Note

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

Storage instructions

- Protect the control valve against external influences (e.g. impact).
- Do not damage the corrosion protection (paint, surface coatings). Repair any damage immediately.
- Protect the control valve against moisture and dirt. Store it at a relative humidity of less than 75 %. In damp spaces, prevent condensation. If necessary, use a drying agent or heating.

- Make sure that the ambient air is free of acids or other corrosive media.
- The permissible storage temperature of standard control valves is -20 to $+65$ °C (-4 to $+149$ °F).

i Note

Contact SAMSON's After-sales Service department for the storage temperatures of other valve versions.

- Do not place any objects on the control valve.

Special storage instructions for elastomers

Elastomer, e.g. actuator diaphragm

- To keep elastomers in shape and to prevent cracking, do not bend them or hang them up.
- We recommend a storage temperature of 15 °C (59 °F) for elastomers.
- Store elastomers away from lubricants, chemicals, solutions, and fuels.

💡 Tip

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

4.4 Preparation for installation

Proceed as follows:

- ➔ Flush the pipelines.

i Note

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

- ➔ Check the valve to make sure it is clean.
- ➔ Check the valve for damage.
- ➔ Check to make sure that the type designation, valve size, material, pressure rating and temperature range of the valve match the plant conditions (size and pressure rating of the pipeline, medium temperature etc.).
- ➔ For steam applications, make sure that the pipelines are dry. Moisture will damage the inside of the valve.
- ➔ Check any mounted pressure gauges to make sure they function.
- ➔ When the valve and actuator are already assembled, check the tightening torques of the bolted joints (▶ AB 0100). Components may loosen during transport.

5 Mounting and start-up

SAMSON valves are delivered ready for use. In special cases, the valve and actuator are delivered separately and must be assembled on site. The procedure to mount and start up the valve are described in the following.

NOTICE

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

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

Observe the specified tightening torques (▶ AB 0100).

NOTICE

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

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

5.1 Mounting the actuator onto the valve

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

Versions with V-port plug

In mixing valves in sizes larger than DN 25, the bottom plug is designed as V-port plug. Each V-port plug has three V-shaped ports. Depending on the valve size, the size of the symmetrically arranged V-shaped ports varies. The process medium in the valve flows through the V-shaped ports as soon as the plug is lifted out of the seat.

1. Before mounting the actuator, determine which V-shaped port is uncovered first when the plug is lifted out of the bottom seat.

Tip

Usually, this is the largest V-shaped port.

2. On mounting the actuator, make sure that the V-shaped port uncovered first faces toward the valve outlet (**AB**) at the side.

NOTICE

Risk of damage to the wall of the valve body due to incorrectly diverted jet stream.

The process medium cannot flow unobstructed through the valve when the V-port plug has been installed incorrectly. This will result in the process medium hitting the body wall, which may lead to severe valve damage.

Make sure the V-port plug is installed correctly.

i Note

- Remove the mounted actuator before mounting the other actuator (see associated actuator documentation).
- Preloading the actuator springs increases the thrust of a pneumatic actuator and reduces the travel range of the actuator (see associated actuator documentation).

5.2 Installing the valve into the pipeline

5.2.1 Checking the installation conditions

Pipeline routing

The inlet and outlet lengths vary depending on the process medium. To ensure the control valve functions properly, follow the installation instructions given below:

- Observe the inlet and outlet lengths (see Table 5). Contact SAMSON if the valve conditions or states of the medium process deviate.
- Install the valve free of stress and with the least amount of vibrations as possible. If necessary, attach supports to the valve.
- Install the valve allowing sufficient space to remove the actuator and valve or to perform service and repair work on them.

- In heating or cooling applications, the valve can be installed in the flow pipe or return flow pipe (see Fig. 6).

Mounting position

Generally, we recommend 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 $-10\text{ }^{\circ}\text{C}$ ($14\text{ }^{\circ}\text{F}$)

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

Support or suspension

Depending on the valve version and mounting position, the control valve and pipeline must be supported or suspended. The plant engineering company is responsible in this case.

! NOTICE

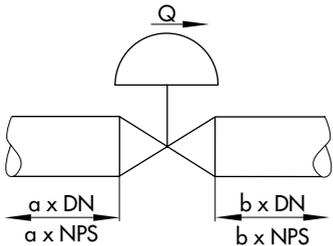
Premature wear and leakage due to insufficient support or suspension.

In the following versions, the control valve must be supported or suspended:

- *Valves that are not installed with the actuator in the upright position on top of the valve.*

Attach a suitable support or suspension to the valve.

Table 5: Inlet and outlet lengths



Q Flow rate
a Inlet length
b Outlet length

State of process medium	Valve conditions	Inlet length a	Outlet length b
Gas	$Ma \leq 0.3$	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 saturated steam

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 workplace of operating personnel.
- ➔ On mounting valve accessories, make sure that they can be operated from the workplace of the operating personnel.

i Note

The workplace of operating personnel is the location from which the valve, actuator and any mounted valve accessories can be accessed to operate them.

5.2.2 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.

Mixing service

Temperature control $Q = \text{constant}$

Fail-safe action: FA = "Actuator stem extends", FE = "Actuator stem retracts"

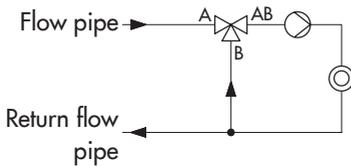
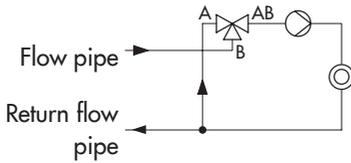
In heating applications with FA, the heating medium (flow) is shut off in the fail-safe position, in cooling applications with FE, cooling is maintained in the fail-safe position.

Diverting service

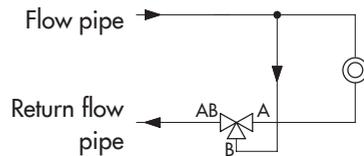
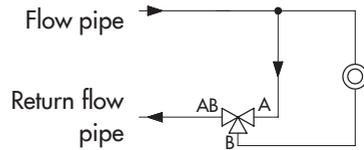
Flow control $Q = 0 \text{ to } 100 \%$

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

Installation in flow pipe

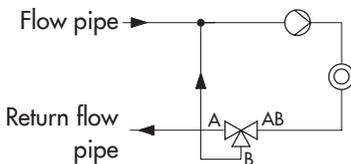
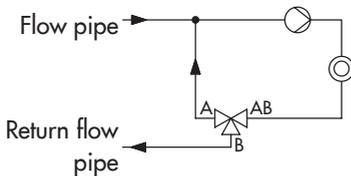


Installation in return flow pipe



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

Installation in return flow pipe



Installation in flow pipe

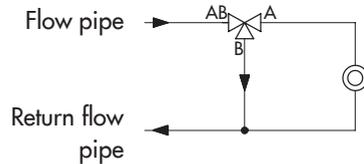
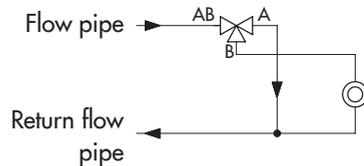


Fig. 6: Typical installations

Shut-off valves

We recommend installing a shut-off valve both upstream of the strainer and downstream of the valve.

Insulation

Only insulate control valves with insulating section or bellows seal up to the bonnet flange of the valve body for medium temperatures below 0 °C (32 °F) and above 220 °C (428 °F).

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.

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).

WARNING

Risk of personal injury due to pressurized components and process medium escaping under pressure.

Do not loosen the screw of the test connection while the valve is in operation.

Safety guard

To reduce the crush hazard arising from moving parts (actuator and plug stem), a safety guard can be installed.

5.2.3 Installing the control valve

1. Close the shut-off valve in the pipeline while the valve is being installed.
2. Remove the protective caps from the valve ports before installing the valve.
3. Lift the valve using suitable lifting equipment to the site of installation (see section 4.2.2). Observe the flow direction through the valve. The arrow on the valve indicates the direction of flow.
4. Make sure that the correct flange gaskets are used.
5. Bolt the pipe to the valve free of stress.
6. Depending on the field of application, allow the valve to cool down or heat up to reach ambient temperature before start up.
7. Slowly open the shut-off valve in the pipeline after the valve has been installed.

NOTICE

Risk of valve damage due to a sudden pressure increase and resulting high flow velocities.

Slowly open the shut-off valve in the pipeline during start-up.

8. Check the valve to ensure it functions properly.

5.3 Quick check

SAMSON valves are delivered ready for use. To test the valve's ability to function, the following quick checks can be performed:

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.

Fail-safe position

- ➔ Shut off the signal pressure line.
- ➔ Check whether the valve moves to the fail-safe position.

Adjustable packing



Tip

A label on the flange (2) indicates whether an adjustable packing is installed.

1. Tighten the threaded bushing gradually (by turning it clockwise) until the packing seals the valve.

NOTICE

Risk of valve damage due to the threaded bushing tightened too far.

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

2. Open and close the valve several times.
3. Check the valve for leakage (visual inspection).
4. Repeat steps 1 and 2 until the packing completely seals the valve.

Note

If the adjustable packing does not seal properly, contact SAMSON's After-sales Service department.

Pressure test

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 valve and plant.

Note

The plant operator is responsible for performing the pressure test. SAMSON's After-sales Service department can support you to plan and perform a pressure test for your plant.

6 Operation

Immediately after completing mounting and start-up (see section 5), the valve is ready for use.

WARNING

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

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

WARNING

Risk of personal injury when the actuator vents.

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

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.

Wear protective clothing and safety gloves.

NOTICE

Operation disturbed by a blocked actuator or plug stem.

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

6.1 Working in manual mode

Valves fitted with actuators with a handwheel can be manually closed or opened in case of supply air failure.

→ For normal closed-loop operation, move the handwheel to the neutral position.

7 Servicing

The control valve is subject to normal wear, especially at the seats, plug, and packing. Depending on the operating conditions, check the valve at regular intervals to prevent possible failure before it can occur.



Tip

SAMSON's After-sales Service department can support you to draw up an inspection plan for your plant.

We recommend removing the valve from the pipeline for service or repair work (see section 9.2).

⚠ DANGER

Risk of bursting in pressure equipment. Control valves and pipelines are pressure equipment. Improper opening can lead to bursting of the valve.

- Before starting any work on the control valve, depressurize all plant sections concerned as well as the valve.
- Drain the process medium from all the plant sections concerned as well as the valve.
- Wear personal protective equipment.

⚠ WARNING

Risk of personal injury due to residual process medium in the valve. While working on the valve, residual process medium can escape and, depending on its

properties, may lead to personal injury, e.g. (chemical) burns.

Wear protective clothing, safety gloves, and eyewear.

⚠ WARNING

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

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

- Allow components and pipelines to cool down or heat up.
- Wear protective clothing and safety gloves.

ⓘ NOTICE

Risk of valve damage due to incorrect servicing or repair.

Service and repair work must only be performed by trained staff.

ⓘ NOTICE

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

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

Observe the specified tightening torques

(▶ AB 0100).

! NOTICE

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

Only use tools approved by SAMSON

(▶ AB 0100).

! NOTICE

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

Only use lubricants approved by SAMSON

(▶ AB 0100).

i Note

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

- Certain test results (seat leakage and leak test) certified by SAMSON lose their validity when the valve body or actuator housing is opened.
- 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 department.
- Only use original spare parts by SAMSON, which comply with the original specifications.

7.1 Replacing the gasket

! NOTICE

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

Only exchange the gasket in valves without pressure balancing.

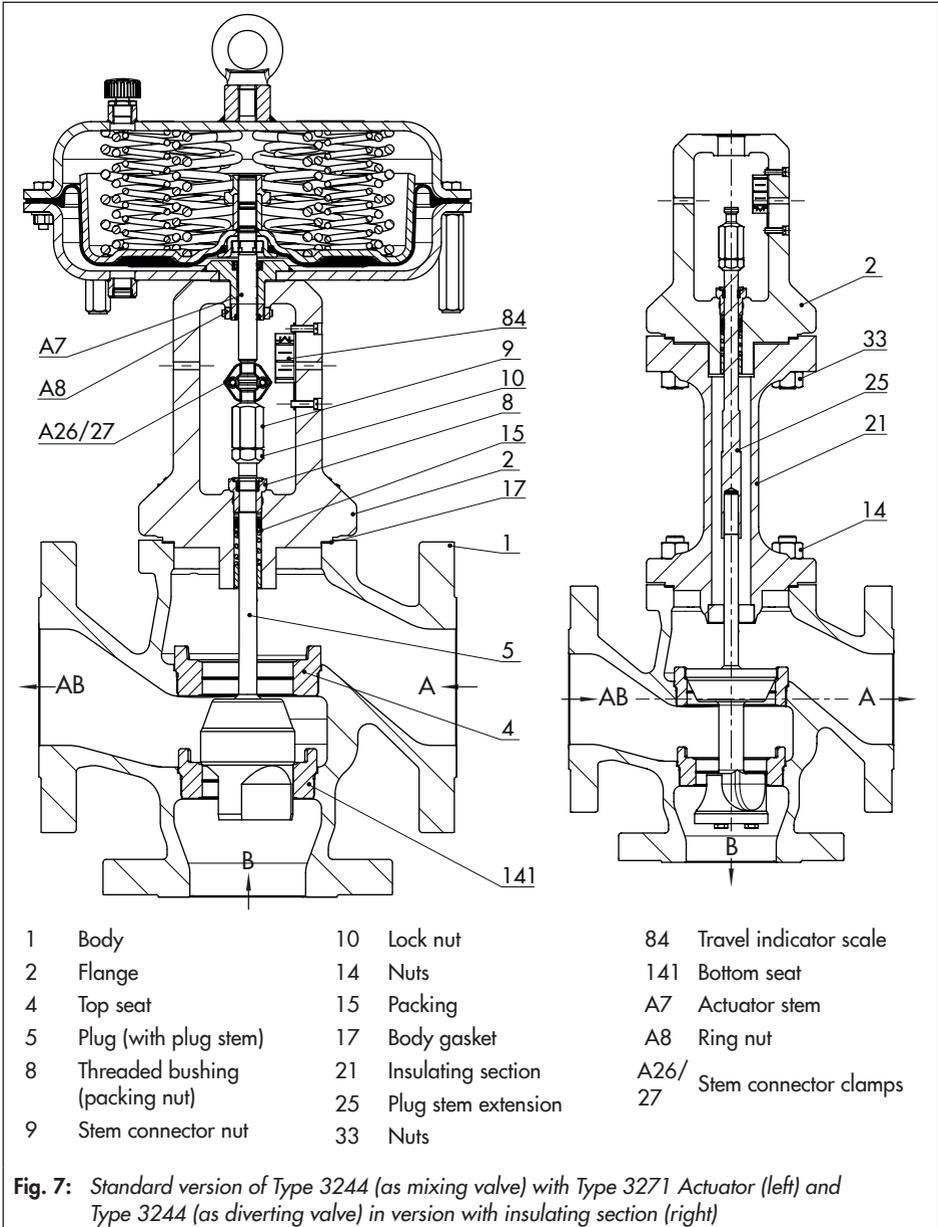
To replace the gasket in valve versions with pressure balancing, contact SAMSON's After-sales Service department.

7.1.1 Standard version

1. Remove the actuator from the valve. See associated actuator documentation.
2. Undo the body nuts (14) gradually in a criss-cross pattern.
3. Lift the flange (2) and plug with plug stem (5) off the body (1).
4. Remove the gasket (17). Carefully clean the sealing faces in the valve body (1) and on the flange (2).
5. Insert a new gasket (17) into the body.
6. Place the flange (2) onto the body.

Mixing valve with V-port plug: place the flange (2) onto the insulating section, making sure that the largest V-shaped port of the V-port plug faces toward the valve outlet (**AB**) at the side. See section 5.1.
7. **Diverting valve:** firmly press the plug (5) into the top seat (4).

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



Fasten down the flange (2) with the body nuts (14). Tighten the nuts gradually in a criss-cross pattern. Observe tightening torques.

8. Mount actuator. See associated actuator documentation.
9. Adjust lower or upper signal bench range. See associated actuator documentation.

7.1.2 Version with insulating section or bellows seal

1. Remove the actuator from the valve. See associated actuator documentation.
2. Undo the body nuts (14) gradually in a criss-cross pattern.
3. Lift the insulating section (21) or bellows seal (22) together with flange (2) and plug with plug stem (5) off the body (1).
4. Remove the gasket (17). Carefully clean the sealing faces in the valve body (1) and on the insulating section (21) or bellows seal (22).
5. Insert a new gasket (17) into the body.
6. Place the insulating section (21) or bellows seal (22) together with the flange (2) and plug with plug stem (5) onto the body.

Mixing valve with V-port plug: place the assembly onto the valve body, making sure that the largest V-shaped port of the V-port plug faces toward the valve outlet (AB) at the side. See section 5.1.

7. **Diverting valve:** firmly press the plug (5) into the top seat (4).

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

Fasten down the insulating section (21) or bellows seal (22) with the body nuts (14). Tighten the nuts gradually in a criss-cross pattern. Observe tightening torques.

8. Mount actuator. See associated actuator documentation.
9. Adjust lower or upper signal bench range. See associated actuator documentation.

7.2 Replacing the packing

⚠ NOTICE

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

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 SAMSON's After-sales Service department.

7.2.1 Standard version

Standard packing (PTFE)

1. Remove the actuator from the valve. See associated actuator documentation.

2. Undo the body nuts (14) gradually in a criss-cross pattern.
3. Lift the flange (2) and plug with plug stem (5) off the body (1).
4. Unthread the stem connector nut (9) and lock nut (10) from the plug stem.
5. Unscrew the threaded bushing (8).
6. Pull the plug with plug stem (5) out of the flange (2).
7. Pull all the packing parts out of the packing chamber using a suitable tool.
8. Renew damaged parts. Clean the packing chamber thoroughly.
9. Apply a suitable lubricant to all the packing parts and to the plug stem (5).
10. Slide the plug with plug stem (5) into the valve body (1).
11. Place the flange (2) onto the body.
Mixing valve with V-port plug: place the flange (2) onto the body, making sure that the largest V-shaped part of the V-port plug faces toward the valve outlet (AB) at the side. See section 5.1.
12. Carefully slide the packing parts over the plug stem into the packing chamber using a suitable tool. Make sure to observe the proper sequence (see Fig. 8).
13. **Diverting valve:** firmly press the plug (5) into the top seat (4).
Mixing valve: firmly press the plug (5) into the bottom seat (141).
 Fasten down the flange (2) with the body nuts (14). Tighten the nuts gradually in a criss-cross pattern. Observe tightening torques.

14. Screw in the threaded bushing (8) and tighten it. Observe tightening torques.
15. Loosely screw the lock nut (10) and stem connector nut (9) onto the plug stem.
16. Mount actuator. See associated actuator documentation.
17. Adjust lower or upper signal bench range. See associated actuator documentation.

ADSEAL packing

1. Proceed as described in Standard packing (PTFE), steps 1 to 11.
2. Slide the parts of the packing over the plug stem in the specified order:
 - Spring (11)
 - Washer (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. 8.
5. Proceed as described in Standard packing (PTFE), steps 13 to 17.

7.2.2 Version with insulating section

Standard packing (PTFE)

1. Remove the actuator from the valve. See associated actuator documentation.

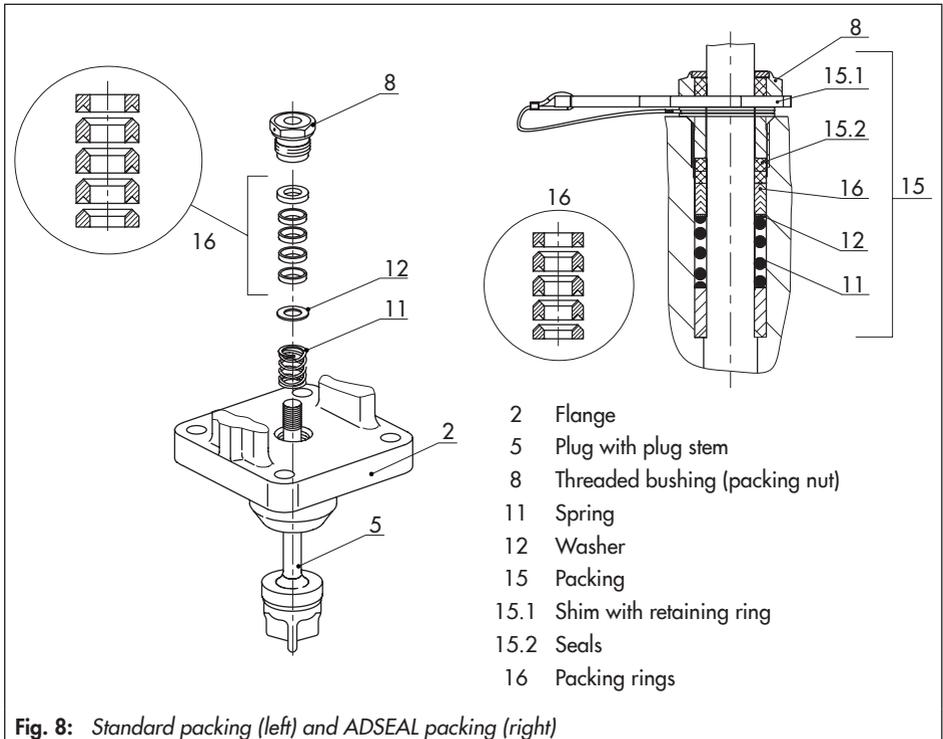


Fig. 8: Standard packing (left) and ADSEAL packing (right)

2. Unthread the stem connector nut (9) and lock nut (10) from the plug stem extension (25).
 3. Unscrew the threaded bushing (8).
 4. Remove nuts (33) and bolts (32).
 5. Carefully lift the flange (2) over the plug stem extension (25).
 6. Pull all the packing parts out of the packing chamber using a suitable tool.
 7. Renew the damaged parts and carefully clean the packing chamber.
 8. Apply a suitable lubricant to all the packing parts and to the plug stem extension (25).
 9. Carefully place the flange (2) over the plug stem extension (25) onto the insulating section (21).
- Mixing valve with V-port plug:** place the flange (2) onto the insulating section, making sure that the largest V-shaped port of the V-port plug faces toward the valve outlet (**AB**) at the side. See section 5.1.

10. Carefully slide the packing parts over the plug stem extension into the packing chamber using a suitable tool. Make sure to observe the proper sequence (see Fig. 8).
 11. Fasten the flange with nuts (33) and bolts (32). Observe tightening torques.
 12. Screw in the threaded bushing (8) and tighten it. Observe tightening torques.
 13. Loosely screw the lock nut (10) and stem connector nut (9) onto the plug stem.
 14. Mount actuator. See associated actuator documentation.
 15. Adjust lower or upper signal bench range. See associated actuator documentation.
5. Proceed as described in Standard packing (PTFE), steps 11 to 15.

7.3 Replacing the seat and plug

NOTICE

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

To replace seat and plug in the three-way valve, contact SAMSON's After-sales Service department.

ADSEAL packing

1. Proceed as described in Standard packing (PTFE), steps 1 to 9.
2. Slide the parts of the packing over the plug stem extension in the specified order:
 - Spring (11)
 - Washer (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. 8.

7.4 Preparation for return shipment

Defective valves can be returned to SAMSON for repair.

Proceed as follows to return valves to SAMSON:

1. Put the control valve out of operation (see section 9).
2. Decontaminate the valve. Remove any residual process medium.
3. Fill in the Declaration on Contamination, which can be downloaded from our website at ► www.samson.de > Services > Check lists for after sales service > Declaration on Contamination.
4. Send the valve together with the filled-in form to your nearest SAMSON subsidiary. SAMSON subsidiaries are listed on our website at ► www.samson.de > Contact.

7.5 Ordering spare parts and operating supplies

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

Spare parts

See section 10.3 for details on spare parts.

Lubricant

Details on suitable lubricants can be found in the document ► AB 0100.

Tools

Details on suitable tools can be found in the document ► AB 0100.

8 Malfunctions

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



Tip

SAMSON's After-sales Service department can support you to draw up an inspection plan for your plant.

8.1 Troubleshooting

Malfunction	Possible reasons	Recommended action
Actuator or plug stem does not move on demand.	Actuator is blocked.	Check attachment. Unblock the actuator.
	Signal pressure too low	Check the signal pressure. Check the signal pressure line for leakage.
Actuator or plug stem does not move through the whole range.	Signal pressure too low	Check the signal pressure. Check the signal pressure line for leakage.
The valve leaks to the atmosphere (fugitive emissions).	The packing is defective.	Replace packing (see section 7.2) or contact SAMSON's After-sales Service department.
	Version with adjustable packing ¹⁾ : packing not tightened correctly.	See section 5.3, Adjustable packing. Contact SAMSON's After-sales Service department when it continues to leak.
	Version with bellows seal: the metal bellows seal is defective.	Contact SAMSON's After-sales Service department.
	Flange joint loose or gasket worn out.	Check the flange joint. Replace gasket at the flanged joint (see section 7.1 or contact SAMSON's After-sales Service department).

Malfunction	Possible reasons	Recommended action
Increased flow through closed valve (seat leakage)	Dirt or other foreign particles deposited between the seat and plug.	Shut off the section of the pipeline and flush the valve.
	Valve trim is worn.	Contact SAMSON's After-sales Service department.

1) A label on the flange (2) indicates whether an adjustable packing is installed.

i Note

Contact SAMSON's After-sales Service department for malfunctions not listed in the table.

8.2 Emergency action

Upon supply air or control signal failure, the valve moves to its fail-safe position (see section 3.1).

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

In the event of a valve malfunction:

1. Close the shut-off valves upstream and downstream of the control valve to stop the process medium from flowing through the valve.
2. Check the valve for damage. If necessary, contact SAMSON's After-sales Service department.

Putting the valve back into operation after a malfunction

- Slowly open the shut-off valves. Allow the process medium to slowly flow into the valve.

9 Decommissioning and disassembly

⚠ DANGER

Risk of bursting in pressure equipment. Control valves and pipelines are pressure equipment. Improper opening can lead to bursting of the valve.

- *Before starting any work on the control valve, depressurize all plant sections concerned as well as the valve.*
- *Drain the process medium from all the plant sections concerned as well as the valve.*
- *Wear personal protective equipment.*

⚠ WARNING

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

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

Wear protective clothing, safety gloves, and eyewear.

⚠ WARNING

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

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

- *Allow components and pipelines to cool down or heat up.*
- *Wear protective clothing and safety gloves.*

9.1 Decommissioning

To decommission the control valve for service and repair work or disassembly, 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. If necessary, allow the pipeline and valve components to cool down or heat up.

9.2 Removing the valve from the pipeline

1. Put the control valve out of operation (see section 9.1).
2. Unbolt the flange joint.
3. Remove the valve from the pipeline (see section 4.2).

9.3 Removing the actuator from the valve

See associated actuator documentation.

9.4 Disposal

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

10 Appendix

10.1 After-sales service

Contact SAMSON's After-sales Service department for support concerning service or repair work or when malfunctions or defects arise.

E-mail

You can reach the After-sales Service Department at aftersaleservice@samson.de.

Addresses of SAMSON AG and its subsidiaries

The addresses of SAMSON AG, its subsidiaries, representatives, and service facilities worldwide can be found on the SAMSON website, in all SAMSON product catalogs or on the back of these Mounting and Operating Instructions.

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

10.2 Certificates

The declarations of conformity are included on the next pages.



EU-KONFORMITÄTSERKLÄRUNG EU DECLARATION OF CONFORMITY

Modul/Module A

SAMSON erklärt in alleiniger Verantwortung für folgende Produkte/explains in sole responsibility for the following products:

Geräte/Devices	Bauart/Series	Typ/Type	Ausführung/Version
Durchgangsventil/Globe Valve	240	3241	DIN, Gehäuse GG/Cast iron-Body DN65-125, Gehäuse GGG/Sph. gr. iron-Body DN50-80, Fluide/Fluids G2, L1, L2 ¹⁾
Durchgangsventil/Globe Valve	240	3241	DIN, Geh. Stahl u.a./Body Steel etc., DN40-100, Fluide/Fluids G2, L2 ²⁾
Durchgangsventil/Globe Valve	240	3241	ANSI, Gehäuse GG/Cast iron-Body, CI250 1 1/2"-2", CI125 2 1/2"-4", Fluide/Fluids G2, L1, L2 ¹⁾
Dreivegeventil/Three-way Valve	240	3244	DIN, Gehäuse GG/Cast iron-Body DN65-125, Gehäuse GGG/Sph. gr. iron-Body DN50-80, Fluide/Fluids G2, L1, L2 ¹⁾
Dreivegeventil/Three-way Valve	240	3244	DIN, Geh. Stahl u.a./Body Steel etc., DN40-100, Fluide/Fluids G2, L2 ²⁾
Schrägsitzventil/Bevel-Valve	---	3353	DIN, Rotgussgehäuse/Bronze-Body, alle Fluide/all Fluids
Schrägsitzventil/Bevel-Valve	---	3353	DIN, Stahlgehäuse/Steel-Body, Fluide/Fluids G2, L1, L2 ¹⁾
Durchgangsventil/Globe Valve	V2001	3321	DIN, Gehäuse GG/Cast iron-Body, DN 65-100, Fluide/Fluids G2, L1, L2 ¹⁾
Durchgangsventil/Globe Valve	V2001	3321	ANSI, Gehäuse GG/Cast iron-Body, 2 1/2"-4" Fluide/Fluids G2, L1, L2 ¹⁾
Dreivegeventil/Three-way Valve	V2001	3323	DIN, Gehäuse GG/Cast iron-Body, DN 65-100, Fluide/Fluids G2, L1, L2 ¹⁾
Dreivegeventil/Three-way Valve	V2001	3323	ANSI, Gehäuse GG/Cast iron-Body, 2 1/2"-4" Fluide/Fluids G2, L1, L2 ¹⁾
Dreivegeventil/Three-way Valve	250	3253	DIN, Gehäuse GG/Cast iron-Body DN200 PN10, Fluide/Fluids G2, L1, L2 ¹⁾

¹⁾ Gase nach Art. 4 Abs. 1 Pkt. c.i zweiter Gedankenstrich/Gases acc. to Article 4, Section 1 Subsection c.i second indent Flüssigkeiten nach Art. 4 Abs. 1 Pkt. c.ii/Liquids acc. to Article 4, Section 1 Subsection c.ii

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

die Konformität mit nachfolgender Anforderung/we declare conformity with the demands of the:

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 harmonisation of the laws of the Member States relating to the making available on the market of pressure equipment/Siehe auch Artikel 41 und 48/See also Article 41 and 48	2014/68/EU	vom/of 15.05.2014
Angewandtes Konformitätsbewertungsverfahren/ Applied Conformity Assessment Procedure für Fluide nach Art. 4 Abs. 1/for fluids acc. to Article 4, Section 1	Modul A/ Module A	durch/by Bureau Veritas 0062

Das Qualitätssicherungssystem des Herstellers wird von folgender benannten Stelle überwacht/The Manufacturer's Quality Assurance System is monitored by following Notified Body:

Bureau Veritas S. A. nr 0062 67/71, boulevard du Château, 92200 Neuilly-sur-Seine, France

Angewandte technische Spezifikation/Technical Standards used: DIN EN12516-2; DIN EN12516-3; ASME B16.34

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

Frankfurt, 19.07.2016

i.v. Klaus Hörtschken

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

ppa Günther Scherer

Günther Scherer
Zentralabteilungsleiter / Head of Central Department
Qualitätsmanagement / Total Quality Management



SAMSON

**EU-KONFORMITÄTSERKLÄRUNG
EU DECLARATION OF CONFORMITY**

Modul/Module H / N° CE-PED-H-SAM 001-13-DEU

SAMSON erklärt in alleiniger Verantwortung für folgende Produkte/explains in sole responsibility for the following products:

Geräte/Devices	Bauart/Series	Typ/Type	Ausführung/Version
Durchgangsventil/Globe Valve	240	3241	DIN, Gehäuse GG/Cast iron-Body ab/from DN150, Gehäuse GGG/Sph. gr. iron-Body ab/from DN100, Fluide/Fluids G2, L1, L2 ¹⁾ DIN/ANSI, Geh. Stahl u.a./Body Steel etc., alle Fluide/all Fluids
Dreizehventil/Three-way Valve	240	3244	DIN, Gehäuse GG ab DN150/Cast iron-Body from DN150, Gehäuse GGG ab DN100/Sph. gr. iron-Body from DN100, Fluide/Fluids G2, L1, L2 ¹⁾ DIN/ANSI, Geh. Stahl u.a./Body Steel etc., alle Fluide/all Fluids
Tiefemperaturventil/Cryogenic Valve	240	3248	DIN/ANSI, alle Fluide/all Fluids
Durchgangsventil/Globe Valve	250	3251	DIN/ANSI, alle Fluide/all Fluids
Dreizehventil/Three-way Valve	250	3253	DIN/ANSI, Geh. Stahl u.a./Body Steel etc., alle Fluide/all Fluids
Durchgangsventil/Globe Valve	250	3254	DIN/ANSI, alle Fluide/all Fluids
Eckventil/Angle Valve	250	3256	DIN/ANSI, alle Fluide/all Fluids
Split-Body-Ventil/Split-Body-Valve	250	3258	DIN, alle Fluide/all Fluids
IG-Eckventil/IG-Angle Valve	250	3259	DIN, alle Fluide/all Fluids
Dampfumformventil/ Steam-converting Valve	280	3281	DIN/ANSI, alle Fluide/all Fluids
		3284	DIN/ANSI, alle Fluide/all Fluids
		3286	DIN/ANSI, alle Fluide/all Fluids
		3288	DIN, alle Fluide/all Fluids
Durchgangsventil/Globe Valve	V2001	3321	DIN, Geh. Stahl u.a./Body Steel etc., alle Fluide/all Fluids ANSI, alle Fluide/all Fluids
Dreizehventil/Three-way Valve	V2001	3323	DIN, Geh. Stahl u.a./Body Steel etc., alle Fluide/all Fluids ANSI, alle Fluide/all Fluids
Schrägsitzventil/Bevel-Valve	---	3353	DIN, Geh. Stahl/Body Steel, alle Fluide/all Fluids
Drosselschalldämpfer/Silencer	3381	3381-1	DIN/ANSI, alle Fluide/all Fluids; Einzeldrosselscheibe mit Anschweißende/ Single attenuation plate with welding end
		3381-3	DIN/ANSI, alle Fluide/all Fluids
		3381-4	DIN/ANSI, alle Fluide/all Fluids; Einzeldrosselscheibe mehrstufig mit Anschweißende/Single attenuation plate multi-stage with welding end
Durchgangsventil/Globe Valve	240	3241	ANSI, Gehäuse GG CI125 ab 5°C/Cast iron-Body CI125 from 5°, Fluide/Fluids G2, L1, L2 ¹⁾
Tiefemperaturventil/ Cryogenic Valve	240	3246	DIN/ANSI, alle Fluide/all Fluids
Dreizehventil/Three-way Valve	250	3253	DIN, Gehäuse GG ab DN200 PN16/Cast iron-Body from DN200 PN16, Fluide/Fluids G2, L1, L2 ¹⁾
Durchgangsventil/Globe Valve	290	3291	ANSI, alle Fluide/all Fluids
Eckventil/Angle Valve	290	3296	ANSI, alle Fluide/all Fluids
Durchgangsventil/Globe Valve	590	3591	ANSI, alle Fluide/all Fluids
Eckventil/Angle Valve	590	3596	ANSI, alle Fluide/all Fluids

¹⁾ Gase nach Art. 4 Abs. 1 Pkt. c.i zweiter Gedankenstrich/Gases acc. to Article 4, Section 1 Subsection c.i second indent Flüssigkeiten nach Art. 4 Abs.1 Pkt. c.ii/Liquids acc. to Article 4, Section 1 Subsection c.ii

die Konformität mit nachfolgender Anforderung/we declare conformity with the demands of the:

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 harmonisation of the laws of the Member States relating to the making available on the market of pressure equipment/Siehe auch Artikel 41 und 48/See also Article 41 and 48	2014/68/EU	vom/of 15.05.2014
Angewandtes Konformitätsbewertungsverfahren/ Applied Conformity Assessment Procedure für Fluide nach Art. 4 Abs. 1/for fluids acc. to Article 4, Section 1	Modul H/ Module H	durch/by Bureau Veritas 0062

Das Qualitätssicherungssystem des Herstellers wird von folgender benannten Stelle überwacht/The Manufacturer's Quality Assurance System is monitored by following Notified Body:

Bureau Veritas S. A. nr 0062 6771, boulevard du Château, 92200 Neuilly-sur-Seine, France

Angewandte technische Spezifikation/Technical Standards used: DIN EN12516-2; DIN EN12516-3; ASME B16.34

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

Frankfurt, 19.07.2016

i.v. Klaus Nitz

ppa Nitz

Klaus Hörschken
Zentralabteilungsleiter / Head of Central Department
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Günther Scherer
Zentralabteilungsleiter / Head of Central Department
Qualitätsmanagement / Total Quality Management

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**EU-KONFORMITÄTSERKLÄRUNG
EU DECLARATION OF CONFORMITY**

Modul/Module H / N° CE-PED-H-SAM 001-13-DEU

SAMSON erklärt in alleiniger Verantwortung für folgende Typen / explains in sole responsibility for the following products:

Ventile für elektrische Stellgeräte / Globe and three-way valves equipped with electric actuators

Typ / Type 3213, 3222 (Erz.-Nr. / Model No.. 2710); 3323, 3535 (2803); 3213, 3531 (2811); 3214 (2814); 2423E (2823); 241 (3241); 244 (3244); 267 (3267);

die Konformität mit nachfolgender Anforderung / the conformity with the following requirement.

Richtlinie des Europäischen Parlaments und des Rates zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die Bereitstellung von Druckgeräten auf dem Markt (siehe auch Artikel 41 und 48). 2014/68/EU vom 15.05.2014

Directive of the European Parliament and of the Council on the harmonisation of the laws of the Member States relating of the making available on the market of pressure equipment (see also Article 41 and 48). 2014/68/EU of 15.05.2014

Angewandtes Konformitätsbewertungsverfahren für Fluide nach Art. 4 Abs.1 Pkt. c.i erster Gedankenstrich. Modul siehe Tabelle durch Bureau Veritas S. A. (0062)
Conformity assessment procedure applied for fluids according to Article 4, Section 1, Subsection c.i, For type of module, see table

DN NPS	15 ½	20 ¾	25 1	32 1¼	40 1½	50 2	65 -	80 3	100 4	125 -	150 6	200 8	250 10	300 12	400 16
PN 25	ohne (1)			A (2)		H									-
PN 40	ohne (1)			H									-		
Class 150	ohne (1)			A (2)		H									-
Class 300	ohne (1)			H									-		

- (1) Das auf dem Stellgerät aufgebrauchte CE-Zeichen hat keine Gültigkeit im Sinne der Druckgeräterichtlinie. The CE marking affixed to the control device does not refer to the Pressure Equipment Directive.
- (2) Das auf dem Stellgerät aufgebrauchte CE-Zeichen gilt ohne Bezeichnung der Notifizierten Stelle (Kennr. 0062). The CE marking affixed to the control device is valid, but does not refer to the notified body (ID No. is invalid).

Geräte, denen laut Tabelle das Konformitätsbewertungsverfahren Modul H zugrunde liegt, beziehen sich auf die „Zulassungsbescheinigung eines Qualitätssicherungssystems“ ausgestellt durch die Notifizierte Stelle. The module H conformity assessment procedure applied to the valves according to the table is based on the "Certificate of Quality System Approval" issued by the notified body.

Der Entwurf zu Grunde gelegt sind Verfahren aus: / The design is based on the methods of: DIN EN 12516-2, DIN EN 12516-3 bzw. / respectively ASME B16.24, ASME B16.34, ASME B16.42

Das Qualitätssicherungssystem des Herstellers wird von folgender benannter Stelle überwacht. The Manufacturer's Quality Assurance System is monitored by following Notified Body

**Bureau Veritas S.A. nr 0062 67/71, boulevard du Chateau, 92200 Neuilly-sur-Seine, France
Hersteller / Manufacturer: SAMSON AG / Weismüllerstraße 3 / 60314 Frankfurt**

Frankfurt am Main, den 19.07.2016

Klaus Hörschken
Klaus Hörschken
Zentralabteilungsleiter / Head of Central Department
Entwicklung Ventile und Antriebe / Development Valves and Actuators

Günther Scherer
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Total Quality Management / Total Quality Management

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Revision 01



**EU-KONFORMITÄTSERKLÄRUNG
EU DECLARATION OF CONFORMITY**

Modul/Module H / N° CE-PED-H-SAM 001-13-DEU

SAMSON erklärt in alleiniger Verantwortung für folgende Typen / explains in sole responsibility for the following products:

Ventile für elektrische Antriebe / Globe and three-way valves equipped with electric actuators

Typ / Type 3213, 3222 (Erz.-Nr. / Model No. 2710); 3226, 3260* (2713*); 3323, 3535 (2803); 3213, 3531 (2811); 3214 (2814); 2423E (2823); 241 (3241); 244 (3244); 267 (3267)

die Konformität mit nachfolgender Anforderung / the conformity with the following requirement.

Richtlinie des Europäischen Parlaments und des Rates zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die Bereitstellung von Druckgeräten auf dem Markt (siehe auch Artikel 41 und 48). 2014/68/EU vom 15.05.2014

Directive of the European Parliament and of the Council on the harmonisation of the laws of the Member States relating of the making available on the market of pressure equipment (see also Article 41 and 48). 2014/68/EU of 15.05.2014

Angewandtes Konformitätsbewertungsverfahren für Fluide nach Art. 4 Abs.1 Pkt. c.ii und Pkt. c.i zweiter Gedankenstrich. Modul siehe Tabelle durch certified by Bureau Veritas S. A. (0062)
 Conformity assessment procedure applied for fluids according to Article 4, Section 1 Subsection c.ii and Subsection c.i second indent. For type of module, see table

Nenndruck Nominal pressure	DN NPS	15 ½	20 ¾	25 1	32 1 ¼	40 1 ½	50 2	65	80 3	100 4	125	150 6	200 8	250 10	300 12	400 16
PN 16		ohne/without (1)					A (2)					H				
PN 25		ohne/without (1)					A (2)					H				
PN 40		ohne/without (1)					A (2)					H				
Class 150		ohne/without (1)					A (2)					H				
Class 300		ohne/without (1)					A (2)					H				

(1) Das auf dem Stellgerät aufgebrachte CE-Zeichen hat keine Gültigkeit im Sinne der Druckgeräterichtlinie
 The CE marking affixed to the control device does not refer to the Pressure Equipment Directive.

(2) Das auf dem Stellgerät aufgebrachte CE-Zeichen gilt ohne Bezeichnung der Notifizierten Stelle (Kennr. 0062)
 The CE marking affixed to the control device is valid, but does not refer to the notified body (ID No. is invalid).

* Für Ventile vom Typ 3260 sind ab DN 150 Fluide nach Art. 4 Abs.1 Pkt. c.ii erster Gedankenstrich nicht zugelassen.
 Fluids according to Art. 4, Section 1, Subsection c.ii, first indent are not permissible for Type 3260 Valves with DN equal or bigger than 150.

Geräte, denen laut Tabelle das Konformitätsbewertungsverfahren Modul H zugrunde liegt, beziehen sich auf die „Zulassungsbescheinigung eines Qualitätssicherungssystems“ ausgestellt durch die Notifizierte Stelle.

The module H conformity assessment procedure applied to the valves according to the table is based on the "Certificate of Quality System Approval" issued by the notified body.

Dem Entwurf zu Grunde gelegt sind Verfahren aus: / The design is based on the methods of:
 DIN EN 12516-2, DIN EN 12516-3 bzw. / respectively ASME B16.1, ASME B16.24, ASME B16.34, ASME B16.42

Das Qualitätssicherungssystem des Herstellers wird von folgender benannter Stelle überwacht

The Manufacturer's Quality Assurance System is monitored by following Notified Body

**Bureau Veritas S.A. nr 0062 67/71, boulevard du Chateau, 92200 Neuilly-sur-Seine, France
 Hersteller / Manufacturer: SAMSON AG / Weismüllerstraße 3 / 60314 Frankfurt**

Frankfurt am Main, den 19.07.2016

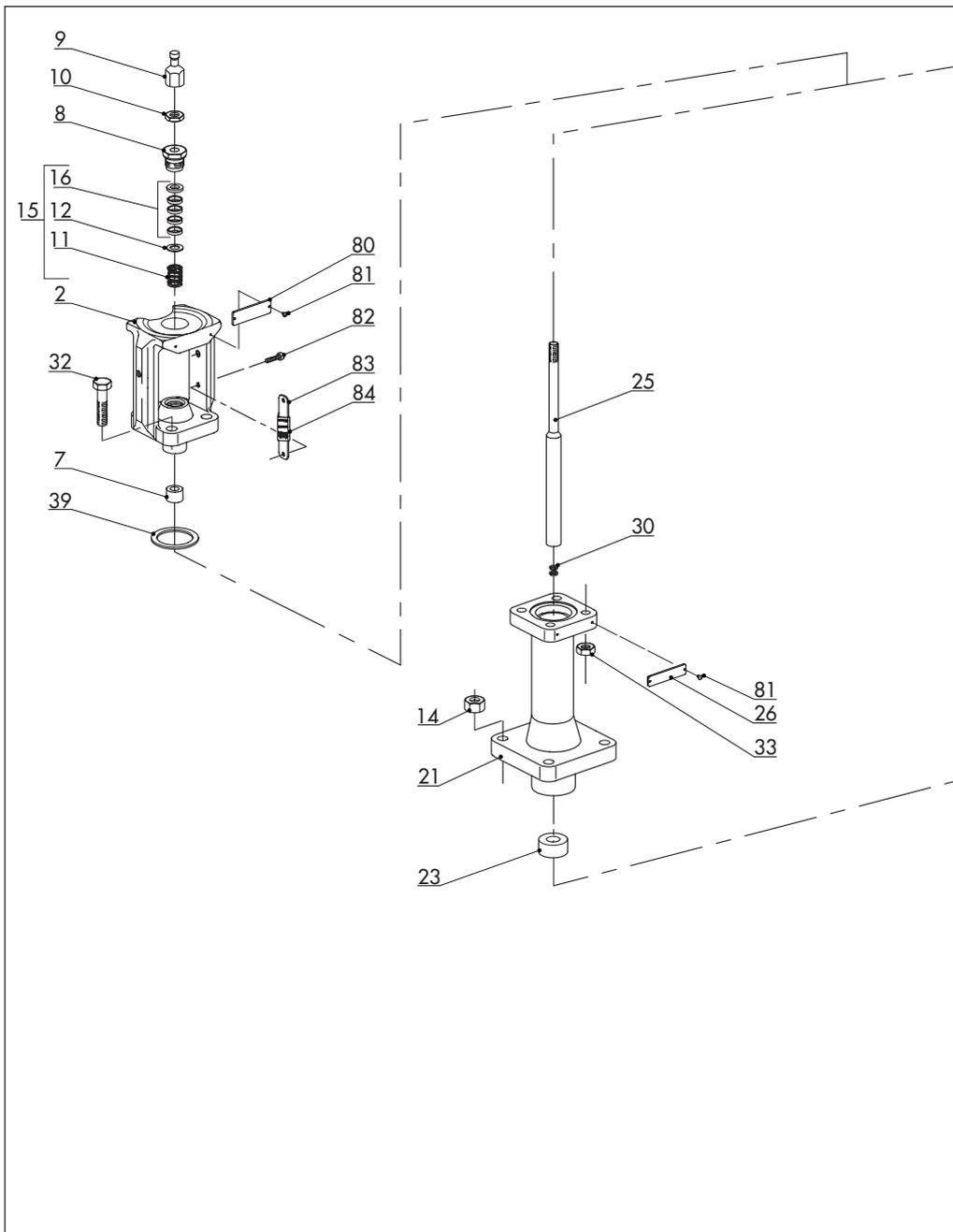
Klaus Hörschken
 Klaus Hörschken
 Zentralabteilungsleiter / Head of Central Department
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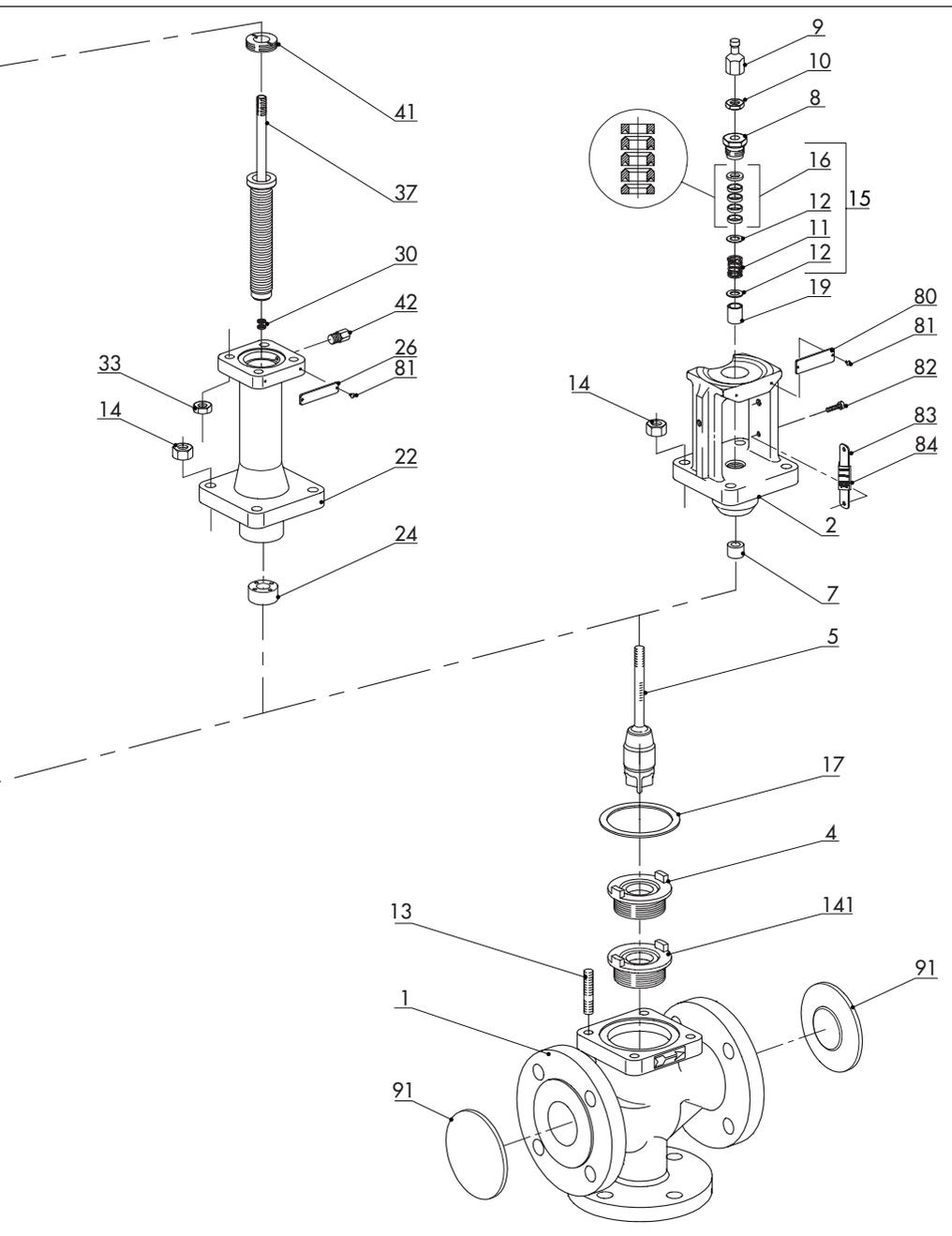
Günther Scherer
 Günther Scherer
 Zentralabteilungsleiter / Head of Central Department
 Total Quality Management / Total Quality Management

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10.3 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)		







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