

MOUNTING AND OPERATING INSTRUCTIONS



EB 2723 EN

Translation of original instructions



Type 44-7 Excess Pressure Valve
Type 44-4 Safety Excess Pressure Valve (SEV)
Self-operated Pressure Regulators

Edition May 2023



Note on these mounting and operating instructions

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

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



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

Definition of signal words

DANGER

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

WARNING

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

NOTICE

Property damage message or malfunction

Note

Additional information

Tip

Recommended action

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1. Safety instructions and measures

Intended use

The SAMSON Type 44-4 and Type 44-7 Pressure Regulators are suitable for pressure control of liquids and gases. The regulators are designed to operate under exactly defined conditions (e.g. operating pressure, process medium, temperature). Therefore, operators must ensure that the regulators are only used in operating conditions that meet the specifications used for sizing the devices at the ordering stage. In case operators intend to use the regulators 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 regulators are 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 accessories mounted on the regulator

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

- Use of non-original spare parts
- Performing service and repair work not described
- Modification of parts as well as service or repair work on the TÜV-tested Type 44-4

Qualifications of operating personnel

The regulator 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

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

▶ GESTIS (CLP) hazardous substances database).

→ Provide protective equipment (e.g. safety gloves, eye protection) appropriate for the process medium used.

Wear hearing protection when working near the valve. Follow the instructions given by the plant operator.

→ 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.

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 regulator 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, especially for installation, start-up and service work.

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

▶ GESTIS (CLP) hazardous substances database).

→ Observe safety measures for handling the device as well as fire prevention and explosion protection measures.

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 regulators comply with the requirements of the European Pressure Equipment Directive 2014/68/EU. Regulators with a CE marking have an EU declaration of conformity, which includes information about the applied conformity assessment procedure. This EU declaration of conformity is included in the annex of these instructions (see section 11.3).

According to the ignition hazard assessment performed in accordance with Clause 5.2 of ISO 80079-36, the non-electrical regulators 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).

1.1 Notes on possible severe personal injury

DANGER

Risk of bursting in pressure equipment.

Regulators and pipelines are pressure equipment. Improper opening can lead to regulator components bursting.

- Observe the maximum permissible pressure for regulator and plant.
- If necessary, a suitable overpressure protection must be installed on site in the plant section.
- Before starting any work on the regulator, depressurize all plant sections affected.
- Drain the process medium from all the plant sections affected as well as the regulator.
- Wear personal protective equipment.

1.2 Notes on possible personal injury

WARNING

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

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

Risk of personal injury due to preloaded springs.

Regulators in combination with preloaded set point springs are under tension. These regulators can be identified by the red warning label on the actuator's set point springs.

- Before starting any work on the set point springs, relieve the compression from the preloaded springs.
- Only use the SAMSON disassembly tool (1280-4052).

Crush hazard arising from moving parts.

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

- Do not insert hands or fingers between the set point springs while the regulator is in operation.
- Before performing any work on the regulator, depressurize the plant. Disconnect or shut off the external control line.

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

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

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

⚠ WARNING

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

Incorrect opening of pressure equipment or mounting parts may lead to the process medium escaping to the atmosphere.

→ Do not loosen the control line while the valve is pressurized.

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

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

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

→ Wear protective clothing and safety gloves.

Damage to health relating to the REACH regulation.

If a SAMSON device contains a substance listed as a substance of very high concern on the candidate list of the REACH regulation, this is indicated on the SAMSON delivery note.

→ Information on safe use of the part affected: go to ► www.samsongroup.com > About SAMSON > Material Compliance > REACH.

1.3 Notes on possible property damage

ⓘ NOTICE

Risk of regulator 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

Incorrect control due to the formation of ice on the regulator.

Medium temperatures below 0 °C may cause ice to form on the regulator, depending on the air humidity. This may affect, in particular, the functioning of the plug or diaphragm stem guide.

- Prevent the formation of ice by taking appropriate precautions (e.g. enclosure, trace heater etc.). The plant operator is responsible for selecting and implementing appropriate precautions.

Risk of regulator damage due to incorrectly attached slings.

- Do not attach load-bearing slings to the actuator housing.

Risk of regulator damage due to unsuitable medium properties.

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

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

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

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

- Only use lubricants approved by SAMSON.

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

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

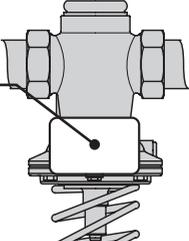
- Observe the specified tightening torques. See section 8.4.

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

Certain tools are required to work on the regulator.

- Only use tools approved by SAMSON.

1.4 Warnings on the regulator

Warning symbols	Meaning of the warning	Location on the device
<p>WARNING Disassembly of spring only with suitable tool. See EB ...</p>	<p>Warning to indicate that the set point springs are loaded.</p> <p>There is a risk of serious head or face injury due to the sudden release of the set point springs while unscrewing the crossbeam when the set point springs are loaded.</p>	

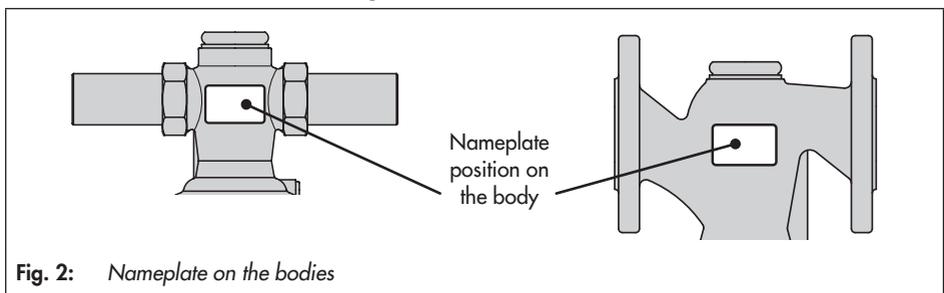
2. Markings on the device

2.1 Regulator nameplate

1	2	3	1 Model number
4		5	2 Configuration ID (Var.-ID) and device index
6	10	7	3 Order number or year of manufacture
8		9	4 Type designation
			5 Pressure rating PN
			6 K_{VS} coefficient
			7 Perm. temperature in °C
			8 Set point range in bar
			9 Max. perm. differential pressure Δp in bar
			10 Arrow indicating the direction of flow

Fig. 1: Nameplate

2.2 Location of the nameplate



2.3 Material identification number

Specifying the configuration ID, you can contact us to find out which material is used. The configuration ID is specified on the nameplate (2, configuration ID and device index). For more details on the nameplate, see section 2.1.

2.4 Warning

The red adhesive labels indicate hazards that may arise while working on the regulator. Risk of personal injury.

→ Observe the warnings.

3. Design and principle of operation

→ See Fig. 3

The regulator are closed when relieved of pressure. They open when the upstream pressure rises above the adjusted set point.

The **Type 44-4** and **Type 44-7** Excess Pressure Valves mainly consist of the valve (1) with seat (2) and plug (3) as well as the actuator with operating diaphragm (6.1), set point spring (8) and set point adjuster (10).

The excess pressure valve is used to maintain the pressure upstream of the regulator to an adjusted set point.

The process medium flows through the regulator between seat and plug in the direction indicated by the arrow on the body. The position of the valve plug determines the flow rate and, as a result, the upstream pressure.

The upstream pressure p_1 to be controlled is transmitted over the control line (11) to the operating diaphragm (6.1) where it is converted into a positioning force. This force is used to move the valve plug according to the force of the set point spring (8). The spring force can be adjusted at the set point adjuster (10).

The **Type 44-4 Safety Excess Pressure Valve** additionally has a second backup diaphragm (6.2). Upon failure of the first operating diaphragm (6.1) the **regulator is fully opened**. Diaphragm failure is indicated by a red mark in the diaphragm rupture indicator (12) (point of response at approx. 1.5 bar) or medium escapes at the test connection.

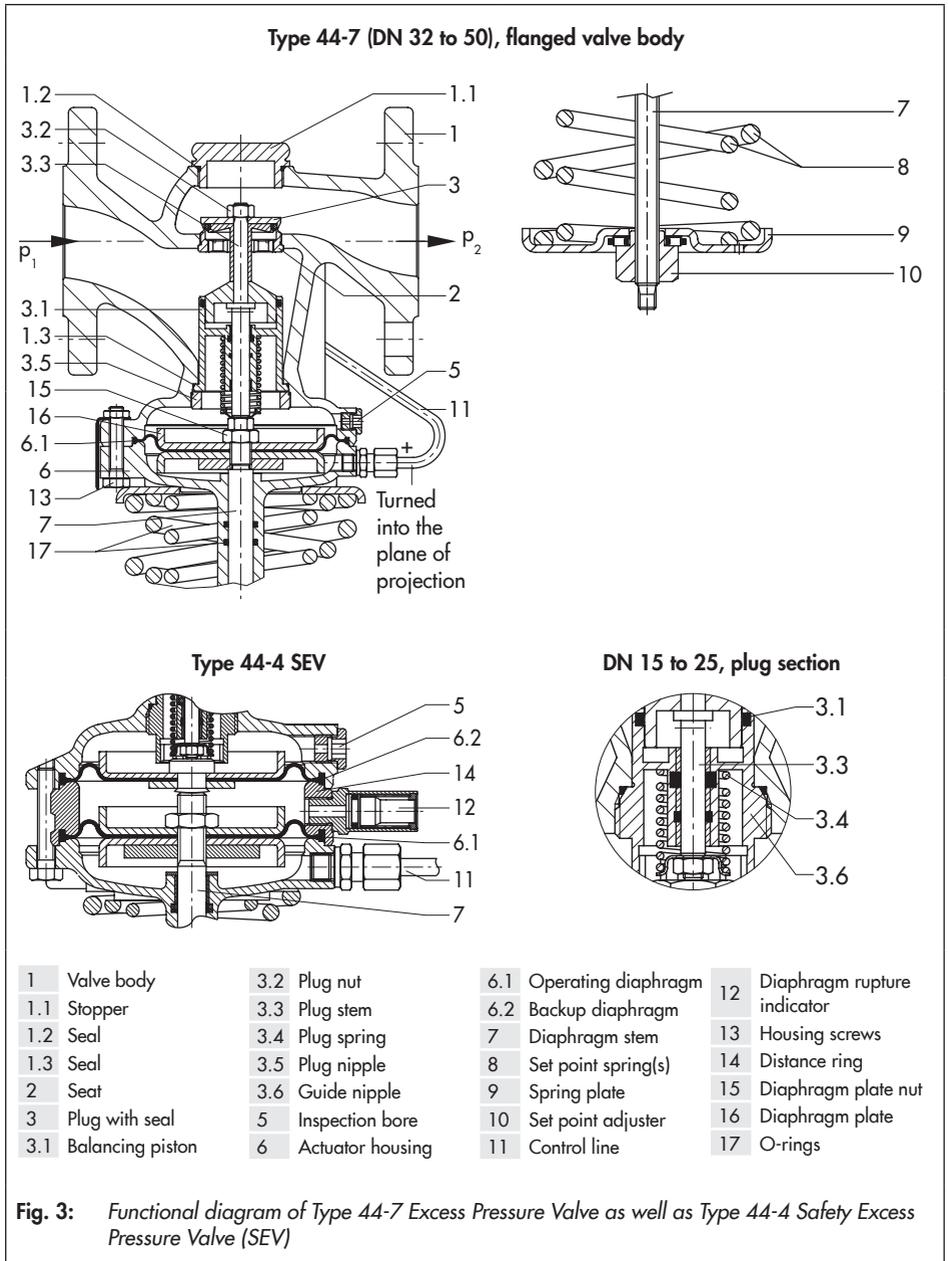
3.1 Technical data

The regulator's nameplate contains information on the regulator version (see section 2.1).

Process medium and scope of application

The excess pressure valve and safety excess pressure valve are designed to maintain the pressure upstream of the regulator to the adjusted set point especially in district heating systems and extended heating systems.

Type 44-4 and **Type 44-7** are suitable for **controlling liquids and gases**.



Design and principle of operation

- Max. permissible temperatures for gases up to **80 °C**
- Air/nitrogen up to **80 °C**¹⁾
- Liquids up to **150 °C**

The regulator is closed when relieved of pressure. It opens when the upstream pressure rises above the adjusted set point.

Type test

The Type 44-4 Regulator has been typetested as a safety excess pressure valve (SEV) by the German technical surveillance association TÜV.

The test mark is available on request.

¹⁾ With seals made of FKM

Temperature range

The Type 44-4 and Type 44-7 Regulators are designed for a temperature range from 0 to +150 °C.

Leakage class

All regulators have the leakage class I according to IEC 60534-4.

Noise emissions

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

⚠ WARNING

Risk of hearing loss or deafness due to loud noise.

- *Wear hearing protection when working near the valve. Follow the instructions given by the plant operator.*
-

Dimensions and weights

Table 4 provides a summary of the dimensions and weights of the Type 44-4 and Type 44-7 Regulators. The lengths and heights in the dimensional drawings are shown on page 17 onwards.

Table 1: *Technical data · All pressures in bar (gauge)*

Regulator		Excess pressure valve	
		44-7	44-4 (SEV)
Connection	Red brass body	Male thread DN 15, 20, 25, 32, 40 and 50	
	Spheroidal graphite iron body	Flanges DN 32, 40 and 50	
Pressure rating		PN 25	
Max. permissible temperature	Liquids	150 °C	
	Non-flammable gases	80 °C	
	Air and nitrogen ¹⁾	80 °C	
Max. permissible differential pressure Δp		11 bar	
Set point range (continuously adjustable)	Type 44-7	1 to 4 bar · 2 to 4.4 bar · 2.4 to 6.6 bar · 6 to 11 bar	
	Type 44-4 (SEV)	1 to 4 bar ²⁾ · 2 to 4.4 bar · 2.4 to 6.6 bar · 6 to 11 bar	
Leakage class according to IEC 60534-4		≤ 0.05 % of K_{VS} coefficient	
Conformity			
Max. perm. ambient temperature		60 °C	

¹⁾ With seals made of FKM; without type test (Type 44-4)

²⁾ Special version, without type test

Table 2: *Materials · Material numbers according to DIN EN*

Body	Red brass CC499K	Spheroidal graphite iron EN-GJS-400-18-LT
Seat	1.4305	
Plug	Brass CW602N and stainless steel 1.4305 with EPDM soft seal ¹⁾	
Actuator housing/ intermediate ring	Red brass CC499K	
Set point spring	1.4310	
Operating diaphragm	EPDM with fabric reinforcement ¹⁾	
Seals	EPDM ¹⁾	

¹⁾ Special version, e.g. for mineral oils: FKM

Design and principle of operation

Table 3: K_{VS} coefficients

Body with screwed ends							
Valve size	DN	15	20	25	32	40	50
K_{VS} coefficients	Standard version	2.5	6.3	8.0	12.5	16.0	20.0
	Special version	1.0 · 4.0	—				
x_{Fz} values		0.60		0.55		0.5	0.45
Flanged body							
Valve size	DN	DN 32		DN 40		DN 50	
K_{VS} coefficients		12.5		20.0		25.0	
x_{Fz} values		0.55		0.5		0.45	

Table 4: Dimensions · Weights

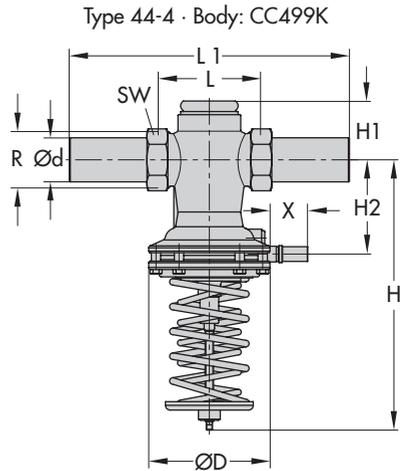
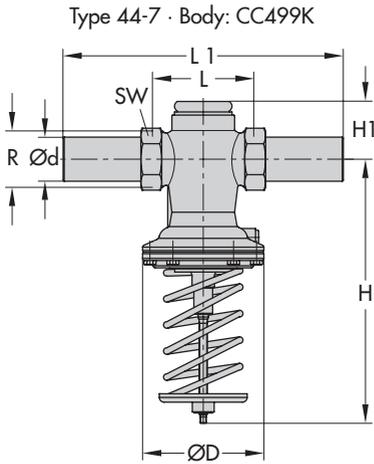
Valve size	DN	15	20	25	32	40	50
Length L	mm	65	70	75	100	110	130
Pipe Ø d	mm	21.3	26.8	33.7	42.0	48.0	60.0
Connection R		G ¾	G 1	G 1¼	G 1¾	G 2	G 2½
Width across flats SW	mm	30	37	46	60	65	82
Height H	Type 44-7	mm	228 ²⁾		252 ²⁾	380	
	Type 44-4	mm	248 ¹⁾		272 ¹⁾	410	
Height H1	mm	41		55	56		
Height H2	mm	32				45	
Actuator housing ØD	mm	116				160	
X	mm	36					
Version with welding ends							
Length L1	mm	210	234	244	268	294	330
Weight	kg (approx.)	3.6	3.7	4.1	5.7	11.8	14.2
Version with threaded ends							
Length L2	mm	129	144	159	192	206	228
Male thread A		G ½	G ¾	G 1	G 1¼	G 1½	G 2
Weight	kg (approx.)	3.5	3.6	4.0	5.5	11.5	13.8
Version with screwed-on flanges or with flanged body (DN 32 to 50 only)							
Length L3	mm	—			180	200	230
Weight	kg (approx.)	—			8.7	15.8	17.6

¹⁾ 273 mm with 6 to 11 bar set point range

²⁾ Set point range 6 to 11 bar: H + +19 mm

Dimensional drawings

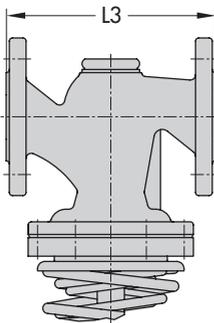
Version with welding ends



Version with flanged valve body

Type 44-4 and Type 44-7

Body: spheroidal graphite iron¹⁾



Version with threaded ends

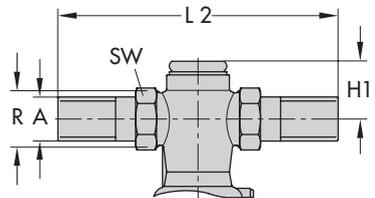


Fig. 4: Dimensions

¹⁾ DN 32, 40 and 50

4. Measures for preparation

After receiving the shipment, proceed as follows:

1. Check the scope of delivery. Compare the shipment received with 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.

4.2 Transporting and lifting

Due to the low service weight, lifting equipment is not required to lift and transport the regulator (e.g. to install it into the pipeline).

Transport instructions

- Protect the device against external influences (e.g. impact).
- Do not damage the corrosion protection (paint, surface coatings). Repair any damage immediately.
- Protect the device against moisture and dirt.
- Observe the permissible ambient temperatures (see section 3.1).

4.3 Storage

! NOTICE

Risk of regulator 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 to regularly check the device and the prevailing storage conditions during long storage periods.

Storage instructions

- Protect the device against external influences (e.g. impact).
- Do not damage the corrosion protection (paint, surface coatings). Repair any damage immediately.
- Protect the device against moisture and dirt. Store it at a relative humidity of less than 75 %. In damp spaces, prevent condensation. If necessary, use a drying agent or heating.
- Make sure that the ambient air is free of acids or other corrosive media.
- Observe the permissible ambient temperatures (see section 3.1).
- Do not place any objects on the device.

Special storage instructions for elastomers

Elastomer, e.g. operating diaphragm

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

Tip

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

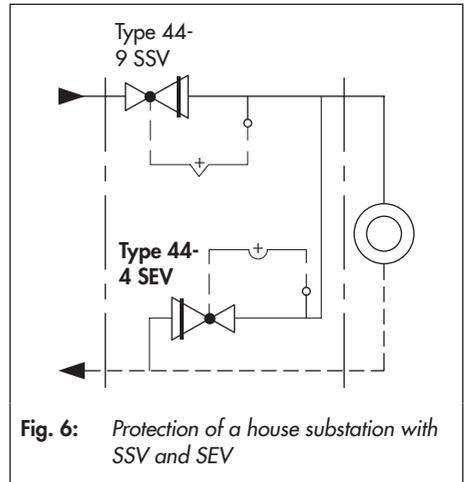


Fig. 6: Protection of a house substation with SSV and SEV

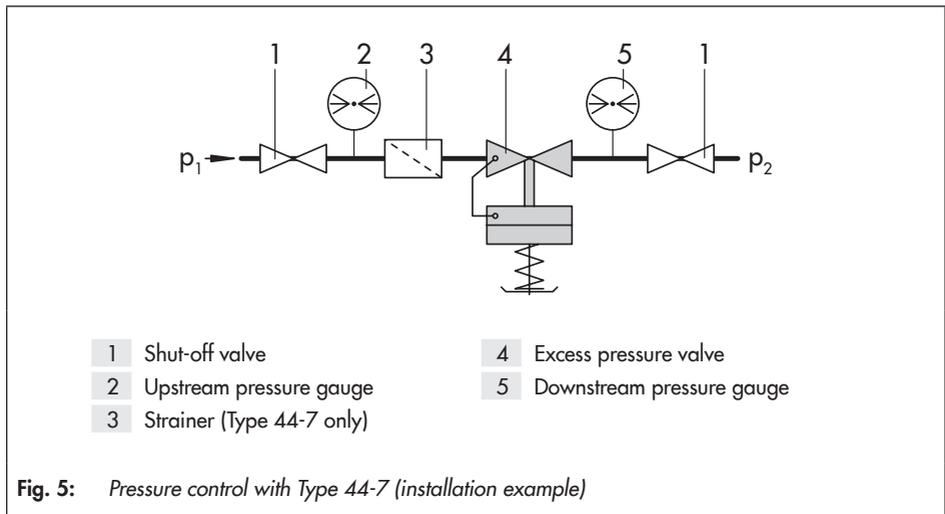


Fig. 5: Pressure control with Type 44-7 (installation example)

5. Mounting

⚠ NOTICE

Risk of overheating due to excessive ambient temperatures or insufficient heat dissipation when components are insulated.

- Do not include the regulator in the insulation of the pipeline.
-

⚠ NOTICE

Risk of impaired functioning of the regulator and leakage at the joint due to installation under tension.

- Bolt the regulator to the pipeline free of stress.
 - If necessary, support the pipelines near the connections.
 - Do not attach supports directly to the regulator.
-

5.1 Mounting positions

Install **Type 44-4** and **Type 44-7** Regulators with the actuator housing suspended downward in horizontal pipelines.

Installation conditions

- Make sure that the regulator remains freely accessible after the plant has been completed.
 - Install a strainer upstream of the regulator (Type 44-7 only). See section 5.2.
 - Make sure the direction of flow matches the direction indicated by the arrow on the body.
 - Install the regulator free of stress.
 - The valves are connected to the pipeline using threaded ends, welding ends or flanged body.
-

⚠ NOTICE

Possible malfunction and damage due to adverse weather conditions (temperature, humidity).

- Do not install the device outdoors or in rooms prone to frost.
 - Protect the regulator against frost if it is used to control freezing media.
 - Either heat the regulator or remove it from the plant and completely drain the residual medium after a plant shutdown.
-

5.2 Additional fittings

Strainer

NOTICE

Do not install a strainer upstream of the Type 44-4 Safety Excess Pressure Valve.

A strainer installed upstream in the flow pipe holds back any dirt or other foreign particles carried along by the medium. For example, the SAMSON Type 1 NI Strainer is suitable (▶ T 1010).

The following points must be observed when installing the strainer:

- Install the strainer upstream of the Type 44-7 Regulator.
- Allow sufficient space to remove the filter.
- Observe the flow direction.
- In horizontal pipelines with gases or liquids, the filter element faces downward. The filter element faces sideways in applications with steam.
- Install strainers in vertical pipelines with the medium flowing upward with the drain plug facing upward.

i Note

Check the strainer at regular intervals and clean it, if necessary.

Shut-off valve

Install a hand-operated shut-off valve both upstream of the strainer and downstream of the regulator (see Fig. 5). This allows the plant to be shut down for cleaning and maintenance, and when the plant is not used for longer periods of time.

Pressure gauges

Install a pressure gauge both upstream and downstream of the regulator to monitor the pressures prevailing in the plant (see Fig. 5).

5.3 Preparation for installation

Before mounting, make sure the following conditions are met:

- The regulator is clean.
- The regulator is not damaged.
- Install a strainer upstream of the regulator.
- The regulator data on the nameplate (type designation, valve size, material, pressure rating and temperature range) match the plant conditions (size and pressure rating of the pipeline, medium temperature etc.). See the 'Markings on the device' section for nameplate details.
- The requested or required additional fittings (see the 'Design and principle of operation' section) have been installed or prepared as necessary before installing the valve.

Proceed as follows:

- Lay out the necessary material and tools to have them ready during installation work.
- Flush the pipeline **before** installing the regulator (see section 5.3.1).
The plant operator is responsible for cleaning the pipelines in the plant.
- Check any mounted pressure gauges to make sure they function properly.

5.3.1 Cleaning the pipeline

We recommend additionally flushing the pipeline without an installed regulator over a time period of several minutes before start-up. In this case, install a suitable length of pipe into the pipeline in place of the regulator.

- Before flushing the plant with the process medium, read the information under 'Starting up the plant' in section 6.
- Observe the mesh size of the upstream strainer for the maximum particle size. Use strainers to suit the process medium.
- Check the strainer for dirt each time the pipeline is flushed and clean it, if necessary.

5.4 Installation

SAMSON regulators are delivered as assembled units. The activities listed below are necessary for installation and before start-up of the regulator.

i Note

SAMSON's After-sales Service can support you concerning lubricant, tightening torques and tools approved by SAMSON.

! NOTICE

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

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

→ *Observe the specified tightening torques (see section 8.4).*

5.4.1 Installing the regulator

1. Close the shut-off valves upstream and downstream of the regulator while the regulator is being installed.
2. Remove the protective caps from the valve ports of regulators with flanges before installation.
3. Observe the flow direction through the valve. The arrow on the valve indicates the direction of flow.
4. Make sure that the correct gaskets are used.
5. Bolt the pipe to the valve free of stress.
6. Slowly open the shut-off valves in the pipeline after the regulator has been installed.

5.4.2 Filling the plant

Open the shut-off valves slowly over a time period of several minutes preferably starting from the upstream pressure side to fill the plant (all consumers are open).

- Make sure that the pressure rises simultaneously upstream and downstream of the regulator to avoid damaging it.
- Avoid pressure surges.

5.5 Testing the regulator

⚠ DANGER

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

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

Before working on the regulator:

- Depressurize all plant sections concerned and the regulator.
- Disconnect the control line.
- Drain the process medium from all the plant sections concerned as well as the valve.

⚠ DANGER

Risk of personal injury due to process medium escaping.

- Do not start up the regulator until all parts have been mounted.

⚠ 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.

- Wear hearing protection when working near the valve. Follow the instructions given by the plant operator.

⚠ WARNING

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

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

- Wear protective clothing and safety gloves.

SAMSON regulators are delivered ready for use. To test the regulator functioning before start-up or putting back the regulator into operation, perform the following tests:

5.5.1 Leakage

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

SAMSON's After-sales Service can support you to plan and perform a leak test for your plant.

1. Install the regulator into the pipeline. See section 5.4.1.
2. Apply the required test pressure.
3. Check the regulator for leakage to the atmosphere.
4. Depressurize the pipeline section and regulator.
5. Rework any parts that leak and repeat the leak test.

5.5.2 Pressure test

i Note

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

! NOTICE

Risk of the operating diaphragm bursting due to excessive pressure during pressure testing.

- The pressure must not exceed the maximum permissible pressure by 1.5 times the pressure rating.
- Remove the control line from the regulator and seal the open connection with a blanking plug (accessories: blanking plug 8323-0030 and seal 8412-0771).

! NOTICE

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

- Slowly open the shut-off valves.

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

- Do not allow the pressure to exceed the 1.5 times the pressure rating of the valve body.
- Remove the control line from the regulator and seal the open connection with a blanking plug (accessories: blanking plug 8323-0030 and seal 8412-0771).

- Make sure that the pressure rises simultaneously upstream and downstream of the regulator to avoid damaging it.

5.6 Insulation

To insulate cold systems, we recommend first filling the plant and carefully rinsing it. The regulator must not yet be insulated at this stage.

! NOTICE

Risk of regulator damage due to incorrect insulation.

- Only insulate the regulator up to the actuator housing for medium temperatures below 0 °C/32 °F or above 80 °C/175 °F.

1. Start up the plant and adjust the set point (see section 6).
2. Shut down the plant again and let it heat up until the condensation water has dried off.
3. Insulate the regulator and pipes conveying the process medium using insulation material with a water vapor barrier. If an external control line is to be routed through the insulation, special care must be taken with the sealing since slight changes in shape may occur. The insulation thickness depends on the medium temperature and the ambient conditions. 50 mm is a typical thickness.

6. Start-up

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

⚠ DANGER

Risk of personal injury due to process medium escaping.

→ *Do not start up the regulator until all parts have been mounted.*

⚠ WARNING

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

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

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

→ *Wear protective clothing and safety gloves.*

⚠ WARNING

Risk of 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.

→ *Wear hearing protection when working near the valve. Follow the instructions given by the plant operator.*

⚠ WARNING

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

→ *Do not loosen the control line while the valve is pressurized.*

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

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

6.1 Start-up and putting the device back into operation

1. Depending on the field of application, allow the regulator to cool down or warm up to reach ambient temperature before start up.
2. All consumer valves are open.
3. Slowly open the shut-off valves in the pipeline. Slowly opening these valves prevents a sudden surge in pressure and high flow velocities which can damage the valve.
4. Check the regulator to ensure it functions properly (see information under 'Adjusting the set point in the 'Operation' section).

6.2 Starting up the plant

1. The plant is filled with the process medium (see information under 'Filling the plant' in the 'Installation' section).
 - ➔ To start up the pressure regulator, open shut-off valves **slowly**.
2. Slowly open the shut-off valves upstream of the pressure regulator.
3. Slowly open all the valves downstream of the regulator (consumer side).
4. Avoid pressure surges.
5. Put the pressure regulator into operation.

7. Operation

7.1 Adjusting the set point

➔ See Fig. 3

Adjust the required set point by turning the set point adjuster (10) with an open-end wrench.

i Note

The following open-end wrench sizes are required to adjust the set point:

- 19 mm for DN 15 to 32
 - 27 mm for DN 40 and 50
-

Set point adjuster

- ➔ Undo the lock nut (for 6 to 11 bar set point range only).
- ➔ Turn the set point screw clockwise (↻) to increase the pressure set point.
- ➔ Turn the set point screw counterclockwise (↺) to reduce the pressure set point.
- ➔ Tighten the lock nut (for 6 to 11 bar set point range only).

The pressure gauge (Fig. 5) installed on the downstream side on site allows the adjusted set point to be monitored.

The set point range can be changed by exchanging the set point spring (8) (see section 8.3).

8. Servicing

The regulator does not require much maintenance. Nevertheless, it is subject to natural wear, particularly at the seat, plug and operating diaphragm. Depending on the operating conditions, check the regulator at regular intervals to avoid possible malfunctions.

Plant operators are responsible for drawing up an inspection and test plan.

Details on faults and how to remedy them can be found in Table 5.

We recommend removing the regulator from the pipeline before performing any maintenance or service work.

⚠ DANGER

Risk of bursting in pressure equipment.

Regulators and pipelines are pressure equipment. Improper opening can lead to bursting of the regulator.

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

⚠ WARNING

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

While working on the regulator, 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 eye protection.

⚠ WARNING

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

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

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

ⓘ NOTICE

Risk of regulator damage due to incorrect servicing or repair.

Only allow trained staff to perform service and repair work.

ⓘ NOTICE

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

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

Observe the specified tightening torques.

ⓘ NOTICE

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

Only use tools approved by SAMSON.

! NOTICE

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

Only use lubricants approved by SAMSON.

i Note

SAMSON's After-sales Service can support you concerning lubricant, tightening torques and tools approved by SAMSON.

i Note

The regulator was checked by SAMSON before delivery.

- Certain test results certified by SAMSON lose their validity when the regulator 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.

💡 Tip

SAMSON's After-sales Service can support you in drawing up an inspection and test plan for your plant.

8.1 Cleaning and replacing the seat and plug

! DANGER

Risk of personal injury due to preloaded springs.

Regulators in combination with preloaded set point springs are under tension. These regulators can be identified by the red warning label on the actuator's set point springs.

- Before starting any work on the springs, relieve the compression from the preloaded springs.
- Only use the SAMSON disassembly tool (1280-4052).

! NOTICE

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

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

Observe the specified tightening torques.

! NOTICE

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

Always replace both the seat and plug.

NOTICE

Risk of TÜV approval (based on AGFW worksheet FW 506) for Type 44-4 becoming void.

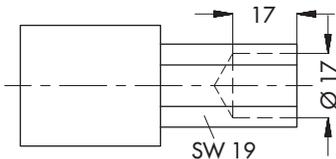
Consult SAMSON's After-sales Service before you change parts or perform service or repair work on TÜV-tested Type 44-4 Regulators.

Note

SAMSON's After-sales Service can support you concerning lubricant, tightening torques and tools approved by SAMSON.

Note

The socket wrench for DN 15 to 25 can also be made, for example from a GEDORE screwdriver bit (IN 19-19) by drilling a 17-mm-deep hole ($\varnothing 17$) into a 17 mm hex bit.



SAMSON order no. 1280-3001

→ See Fig. 3

Disassembly of Type 44-7

1. Put the regulator out of operation (see section 10.1).
2. Completely relieve the tension from the set point spring (8) by turning the set point adjuster (10) counterclockwise (↺).
3. Remove the device from the pipeline
4. Unscrew the control line (11).
5. Unscrew the body stopper (1.1).
6. Remove the seal (1.2).
7. Unscrew the body screws (13) and take off the actuator housing (6) together with the set point spring (8).
8. Unscrew the plug nut (3.2) and take the plug (3) off the plug stem.
9. **DN 15 to 25:** unscrew and pull out the guide nipple (3.6) using a socket wrench.
DN 32 to 50: unscrew the plug nipple (3.5) and pull out the guide nipple (3.6).
10. Remove the seal (1.3).
11. Thoroughly clean the seat (2), plug (3) and balancing piston (3.1). Replace damaged parts with new ones.
12. Check the control line (11) for any blockages.
13. Unscrew the seat (2) using a seat wrench if the seat facing is damaged.

Assembly of Type 44-7

1. Screw in the seat using a seat wrench. Observe the tightening torques specified in section 8.4.
2. Renew the seal (1.3) and insert it into the body.
3. **DN 15 to 25:** insert and screw in the guide nipple (3.6). Observe the tightening torques specified in section 8.4.
DN 32 to 50: insert the the guide nipple (3.6) and screw in the plug nipple (3.5). Observe the tightening torques specified in section 8.4.
4. Place the plug (3) onto the plug stem and screw on the plug nut (3.2). Observe the tightening torques specified in section 8.4.
5. Renew the seal (1.2) and insert it into the body.
6. Screw in the body stopper (1.1). Observe the tightening torques specified in section 8.4.
7. Check the facings of the actuator housing (6) for dirt and clean them, if necessary.
8. Place the actuator housing (6) on the valve body (1) and screw tight the body screws (13). Observe the tightening torques specified in section 8.4.
9. Screw on the control line (11). Observe the tightening torques specified in section 8.4.
10. Put the regulator into operation (see section 5.3).

8.2 Replacing the operating diaphragm

DANGER

Risk of personal injury due to preloaded springs.

Regulators in combination with preloaded set point springs are under tension. These regulators can be identified by the red warning label on the actuator's set point springs.

- Before starting any work on the springs, relieve the compression from the preloaded springs.
- Only use the SAMSON disassembly tool (1280-4052).

NOTICE

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

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

Observe the specified tightening torques.

NOTICE

Risk of TÜV approval (based on AGFW worksheet FW 506) for Type 44-4 becoming void.

Consult SAMSON's After-sales Service before you change parts or perform service or repair work on TÜV-tested Type 44-4 Regulators.

Note

SAMSON's After-sales Service can support you concerning lubricant, tightening torques and tools approved by SAMSON.

Note

The stem surface is roller-burnished. Do not reface the stem.

After replacing the diaphragm stem, the nipple (guide bushing) in the actuator case must be replaced as well.

Tip

The associated order number is written on the actual rolling diaphragm.

➔ See Fig. 3

Disassembly of Type 44-7

1. Put the regulator out of operation (see section 10.1).
2. Completely relieve the tension from the set point spring (8) by turning the set point adjuster (10) counterclockwise (↺).
3. Remove the device from the pipeline
4. Unscrew the control line (11).
5. Use the SAMSON disassembly tool to unscrew the set point adjuster (10) from the diaphragm stem (7).
6. Lift off the spring plate (9) and the set point spring (8).
7. Unscrew the body screws (13) and take off the actuator housing (6).

8. Unscrew the diaphragm plate nut (15) from the diaphragm stem (7).
9. Take off the diaphragm plate (16) and operating diaphragm (6.1).
10. Examine the diaphragm stem (7) for score marks. Replace, if necessary.

Assembly of Type 44-7

1. Place the operating diaphragm (6.1) together with the diaphragm plate (16) onto the diaphragm stem (7) and tighten the nut (15). Observe the tightening torques specified in section 8.4.
2. Apply lubricant to the diaphragm stem (7). See section 8.4.
3. Insert the diaphragm stem (7) together with the operating diaphragm (6.1) into the actuator housing (6).
4. Check the facings of the actuator housing (6) for dirt and clean them, if necessary.
5. Place the actuator housing (6) on the valve body (1) and tighten the screws (13) evenly. Observe tightening torque specified in section 8.4.
6. Use the SAMSON disassembly tool to screw the valve body (1) together with spring plate (9) and the set point springs (8).
7. Screw the set point adjuster (10) onto the diaphragm stem (7).
8. Screw on the control line (11). Observe tightening torque specified in section 8.4.
9. Put the regulator into operation (see section 5.3).

8.3 Replacing the set point springs

⚠ DANGER

Risk of personal injury due to preloaded springs.

Regulators in combination with preloaded set point springs are under tension. These regulators can be identified by the red warning label on the actuator's set point springs.

- Before starting any work on the springs, relieve the compression from the preloaded springs.
- Only use the SAMSON disassembly tool (1280-4052).

📢 NOTICE

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

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

Observe the specified tightening torques.

📢 NOTICE

Risk of TÜV approval (based on AGFW worksheet FW 506) for Type 44-4 becoming void.

Consult SAMSON's After-sales Service before you change parts or perform service or repair work on TÜV-tested Type 44-4 Regulators.

i Note

SAMSON's After-sales Service can support you concerning lubricant, tightening torques and tools approved by SAMSON.

See Fig. 3

Disassembly of Type 44-7

1. Put the regulator out of operation (see section 10.1).
2. Completely relieve the tension from the set point spring (8) by turning the set point adjuster (10) counterclockwise (↺).
3. Remove the device from the pipeline
4. Unscrew the control line (11).
5. Use the SAMSON disassembly tool to unscrew the set point adjuster (10) from the diaphragm stem (7).
6. Lift off the spring plate (9) and the set point spring (8).
7. Examine the diaphragm stem (7) for score marks. Replace, if necessary. Proceed as described in section 8.2.

Assembly of Type 44-7

1. Use the SAMSON disassembly tool to screw the valve body (1) together with spring plate (9) and the set point springs (8).
2. Screw the set point adjuster (10) onto the diaphragm stem (7).
3. Screw on the control line (11). Observe tightening torque specified in section 8.4.
4. Put the regulator into operation (see section 5.3).

i Note

Change the nameplate and configuration ID after changing the set point range.

8.4 Tightening torques and lubricant

→ See Fig. 3

Component	Valve size	Tightening torque in Nm
Stopper (1.1)	DN 15 to 25	70
	DN 32 to 50	110
Seat (2)	DN 15 to 25	45
	DN 32 to 50	110
Plug nut (3.2)	DN 15 to 25	4
	DN 32 to 50	8
Plug nipple (3.5)	DN 32 to 50	110
Guide nipple (3.6)	DN 15 to 25	70
Coupling nut (4)	DN 15	200
	DN 20	250
	DN 25	300
	DN 32	400
	DN 40	600
	DN 50	800
Control line connection (11)	DN 15 to 50	22
Body screws (13)	DN 15 to 32	8
	DN 40 to 50	18
Diaphragm plate nut (15)	DN 15 to 25	40
	DN 32 to 50	80
Lubricant		Item no.
Gleitmo 591		8150-0111

8.5 Preparation for return shipment

Defective devices can be returned to SAMSON for repair. Proceed as follows to return devices to SAMSON:

1. Put the regulator out of operation (see section 10.1).
2. Decontaminate the regulator. Remove any residual process medium.
3. Fill in the Declaration on Contamination. The declaration form can be downloaded from our website at
▶ www.samsongroup.com > Service & Support > After-sales Service > Returning goods.
4. Continue as described on our website at
▶ www.samsongroup.com > Service & Support > After-sales Service > Returning goods.

8.6 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 section 11.2 for details on spare parts.

Lubricants

Contact SAMSON's After-sales Service for more information on suitable lubricants.

Tools

Contact SAMSON's After-sales Service for more information on suitable tools.

9. Malfunctions

The malfunctions listed in Table 5 are caused by mechanical faults and incorrect regulator sizing. In the simplest case, the functioning can be restored following the recommended action. Special tools may be required for repair work.

Exceptional operating and installation conditions may lead to changed situations that may affect the control response and lead to malfunctions. For troubleshooting, the conditions, such as installation, process medium, temperature and pressure conditions, must be taken into account.

SAMSON's After-sales Service can help during troubleshooting. Further information is available in section 11.1.

We recommend removing the regulator from the pipeline before repairing it.



Tip

SAMSON's After-sales Service can support you in drawing up an inspection and test plan for your plant.



Note

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

Table 5: Troubleshooting

Malfunction	Possible reasons	Recommended action
Upstream pressure exceeds the adjusted set point.	Insufficient pressure pulses on the operating diaphragm.	<ul style="list-style-type: none"> → Connect the control line on site for regulators with external control line. → Clean the control line and screw fittings.
	Pressure tapped at the wrong place (regulator with external control line).	<ul style="list-style-type: none"> → Reconnect the control line at another point. → Do not connect the control line at pipe bends or necks.
	Regulator installed against the flow.	→ Install the regulator so that the direction of flow matches the direction indicated by the arrow on the body.
	Regulator or K_{VS}/C_V coefficient too small	<ul style="list-style-type: none"> → Check the sizing. → Change K_{VS}/C_V coefficient, if necessary or install a different sized regulator.
	Foreign particles blocking the plug	<ul style="list-style-type: none"> → Remove foreign particles. → Replace damaged parts.
	Defective operating diaphragm	→ Replace damaged diaphragm.
	Seal the inspection borehole.	→ Open the inspection borehole.
Upstream pressure drops below the adjusted set point.	Foreign particles blocking the plug	<ul style="list-style-type: none"> → Remove foreign particles. → Replace damaged parts.
	Seat and plug are worn or leak.	→ Replace the damaged seat and plug.
	Pressure tapped at the wrong place (regulator with external control line).	<ul style="list-style-type: none"> → Reconnect the control line at another point. → Do not connect the control line at pipe bends or necks.
	Regulator or K_{VS}/C_V coefficient too large	<ul style="list-style-type: none"> → Check the sizing. → Change K_{VS}/C_V coefficient, if necessary or install a different sized regulator.
	Control line blocked	→ Clean the control line and screw fittings.
	Strainer blocked.	→ Clean the strainer.
Jerky control response	Increased friction, e.g. due to foreign particles between seat and plug or in the stem guide on the bonnet.	<ul style="list-style-type: none"> → Remove foreign particles. → Replace damaged parts.

Malfunctions

Table 5: Troubleshooting

Malfunction	Possible reasons	Recommended action
Slow control response	Control line blocked by dirt causing the flow through it to be restricted.	→ Clean the control line.
Upstream pressure fluctuates	Regulator or K_{VS}/C_V coefficient too large	→ Check the sizing. → Change K_{VS}/C_V coefficient, if necessary or install a different sized regulator.
	Pressure tapped at the wrong place (regulator with external control line).	→ Reconnect the control line at another point. → Do not connect the control line at pipe bends or necks.
	The restriction in the control line for pressure tapping is missing.	→ Install a restriction.
Loud noises	High flow velocity, cavitation.	→ Check the sizing. → Install larger regulator, if necessary.
Leakage at the inspection bore	Defective operating diaphragm	→ Replace damaged diaphragm.
Leakage at the diaphragm stem	Dirt in the seal of the actuator casing and diaphragm stem	→ Replace the diaphragm stem and actuator casing.
Red mark appears at the diaphragm rupture indicator.	Defective operating diaphragm	→ Contact SAMSON's After-sales Service to replace a damaged operating diaphragm.

NOTICE

Risk of TÜV approval (based on AGFW worksheet FW 506) for Type 44-4 becoming void.
Consult SAMSON's After-sales Service before you change parts or perform service or repair work on TÜV-tested Type 44-4 Regulators.

10. Decommissioning and removal

DANGER

Risk of bursting in pressure equipment.

Regulators and pipelines are pressure equipment. Improper opening can lead to bursting of the regulator.

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

WARNING

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

While working on the regulator, 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 eye protection.

WARNING

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

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

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

10.1 Decommissioning

To decommission the regulator for service and repair work or disassembly, proceed as follows:

1. Close the shut-off valve on the upstream side of the regulator.
2. Close the shut-off valve on the downstream side of the regulator.
3. Completely drain the pipelines and regulator.
4. Depressurize the plant. Shut off or disconnect the control line, if installed.
5. If necessary, allow the pipeline and device to cool down or warm up to the ambient temperature.
6. Remove the regulator from the pipeline.

10.2 Disposal



We are registered with the German national register for waste electric equipment (stiftung ear) as a producer of electrical and electronic equipment, WEEE reg. no.: DE 62194439

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

i Note

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

💡 Tip

On request, we can appoint a service provider to dismantle and recycle the product.

11. Annex

11.2 Spare parts

11.1 After-sales service

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

E-mail address

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

Addresses of SAMSON AG and its subsidiaries

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

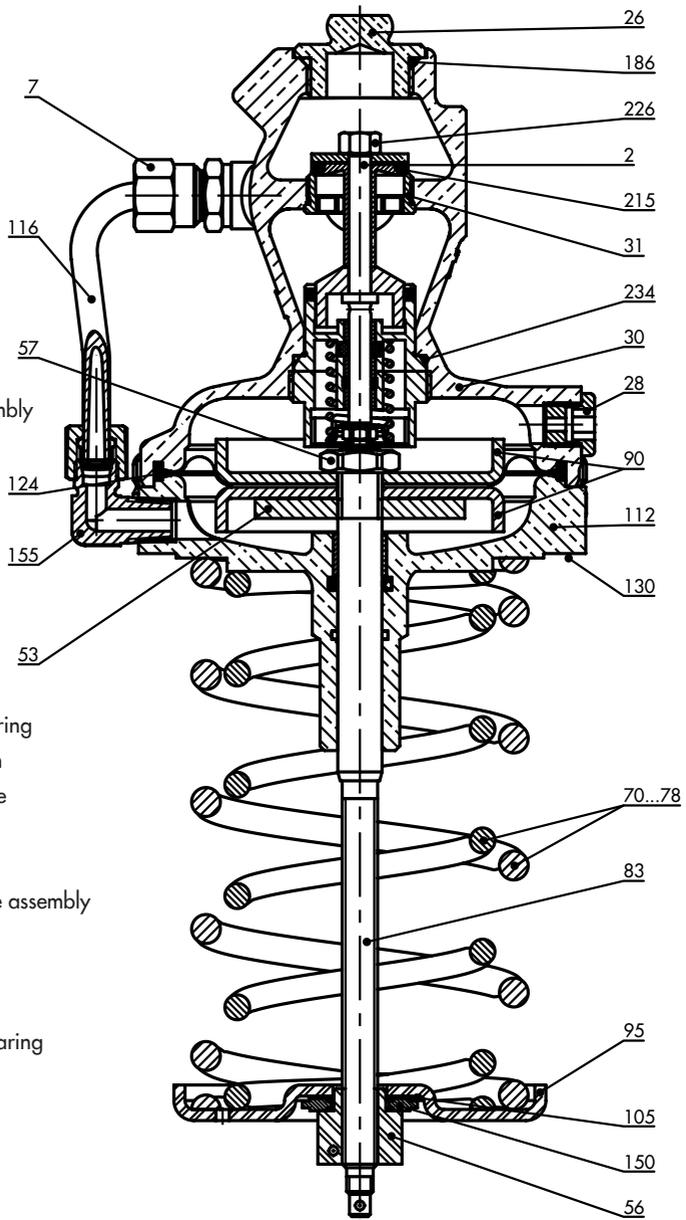
To assist diagnosis and in case of an unclear mounting situation, specify the following details (so far as possible). See section 2:

- Device type and valve size
- Model number and configuration ID
- Upstream and downstream pressure
- Temperature and process medium
- Min. and max. flow rate
- Is a strainer installed?
- Installation drawing showing the exact location of the regulator and all the additionally installed components (shut-off valves, pressure gauge etc.)

DN 15 to 25

Position numbers

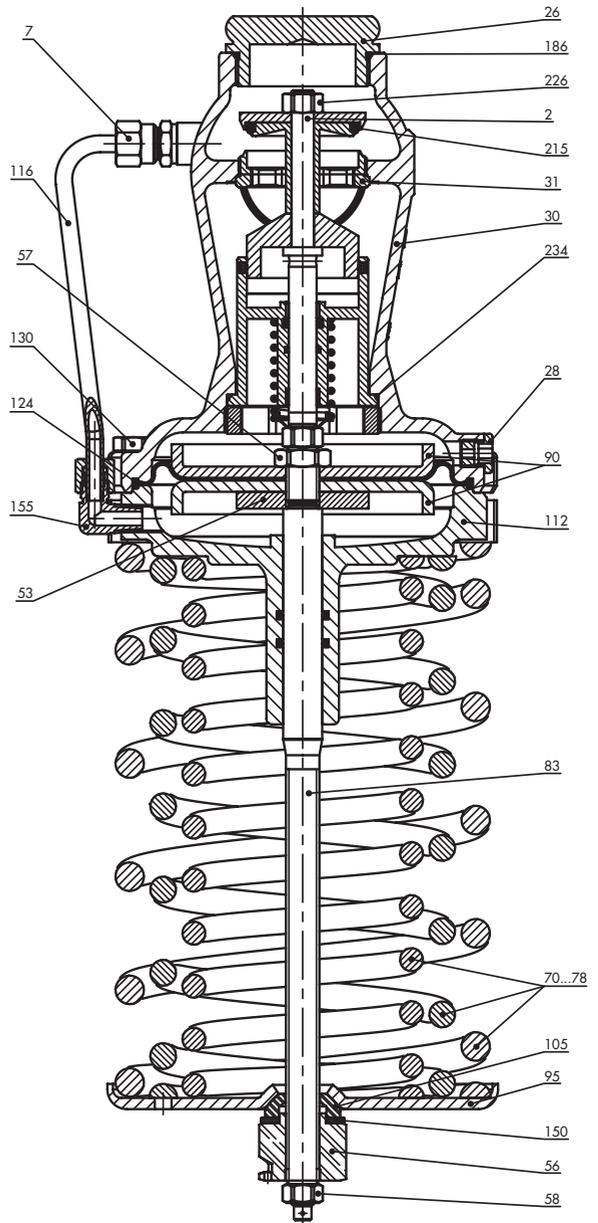
2	Plug
4	Coupling nut
7	Restriction assembly
26	Stopper
28	Screw plug
30	Body
31	Threaded seat
53	Nut
56	Nut
57	Nut
58	Lock nut
70...78	Compression spring
83	Diaphragm stem
90	Diaphragm plate
95	Spring plate
105	Washer
112	Diaphragm case assembly
116	Pipe
124	Diaphragm
130	Screw
150	Axial needle bearing
155	Screw fitting
186	O-ring
215	O-ring
226	Nut
234	O-ring



DN 32 to 50

Position numbers

2	Plug
4	Coupling nut
7	Restriction assembly
26	Stopper
28	Screw plug
30	Body
31	Threaded seat
53	Nut
56	Nut
57	Nut
58	Lock nut
70...78	Compression spring
83	Diaphragm stem
90	Diaphragm plate
95	Spring plate
105	Washer
112	Diaphragm case assembly
116	Pipe
124	Diaphragm
130	Screw
150	Axial needle bearing
155	Screw fitting
186	O-ring
215	O-ring
226	Nut
234	O-ring



11.3 Certificates

The EU declarations of conformity are included on the next pages.

SMART IN FLOW CONTROL.



EU-KONFORMITÄTSERKLÄRUNG EU DECLARATION OF CONFORMITY

Modul H/Module H, Nr./No. / N° CE-PED-H-SAM 001-13-DEU-rev-A

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

Ventile für Druck-, Differenzdruck-, Temperatur- und Volumenstromregler/Valves for pressure, temperature, flowregulators and differential pressure regulators

Typ 2336, 2373, 2375, 44-1B, 44-2, 44-3, 44-4, 44-6B, 44-9, 44-1, 45-1, 45-2, 45-3, 45-4, 45-6, (Erz.-Nr. 2720), 45-9, 47-4, 2488, 2489, (2730), 2405, 2406, 2421 (2811), 2412 (2812), 2417 (2817), 2422 (2814), 2423 (2823), 2423E (2823)

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. 2014/68/EU vom 15.05.2014

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 (see also Articles 41 and 48). 2014/68/EU of 15 May 2014

Angewandtes Konformitätsbewertungsverfahren für Fluide nach Art. 4(1)(c.i) erster Gedankenstrich.

Modul siehe
Tabelle

durch
certified by
Bureau Veritas
S. A. (0062)

Conformity assessment procedure applied for fluids according to Article 4(1)(c.i), first indent

See table for
module

Nenndruck Pressure rating	DN NPS	15	20	25	32	40	50	65	80	100	125	150	200	250	300	400	
		½	¾	1	1¼	1½	2		3	4	6	8	10	12	16		
PN 16		ohne/without ⁽¹⁾				A ⁽²⁾⁽³⁾		-	-	-	-	-	-	-	-	-	-
PN 25		ohne/without ⁽¹⁾				A ⁽²⁾⁽³⁾					H						
PN 40		ohne/without ⁽¹⁾								H							
PN 100 und PN 160		ohne/without ⁽¹⁾							H								
Class 150		ohne/without ⁽¹⁾				A ⁽²⁾⁽³⁾					H						
Class 300		ohne/without ⁽¹⁾									H						
Class 600 und Class 900		ohne/without ⁽¹⁾							H								

- Das auf dem Stellgerät aufgebrachte CE-Zeichen hat keine Gültigkeit im Sinne der Druckgeräterichtlinie.
The CE marking affixed to the control valve is not valid in the sense of the Pressure Equipment Directive.
- Das auf dem Stellgerät aufgebrachte CE-Zeichen gilt ohne Bezeichnung der benannten Stelle (Kenn-Nr. 0062).
The CE marking affixed to the control valve is valid without specifying the notified body (ID number 0062).
- Die Identifikationsnummer 0062 von Bureau Veritas S.A. gilt nicht für Modul A.
The identification number 0062 of Bureau Veritas S.A. is not valid for Modul A.

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

Devices whose conformity has been assessed based on Module H refer to the certificate of approval for the quality management system 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./or 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 management system is monitored by the following notified body:

Bureau Veritas S.A. Nr./No. 0062, Newtime, 52 Boulevard du Parc, Ile de la Jatte, 92200 Neuilly sur Seine, France
Hersteller/Manufacturer: SAMSON AG, Weismüllerstraße 3, 60314 Frankfurt am Main, Germany

Frankfurt am Main, 08. Februar 2017/08 February 2017

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Revision 03

SMART IN FLOW CONTROL.



**EU-KONFORMITÄTserklärung
EU DECLARATION OF CONFORMITY**

Modul H/Module H, Nr./No. / N° CE-0062-PED-H-SAM 001-16-DEU-rev-A

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

Ventile für Druck- Differenzdruck-, Volumenstrom- und Temperaturregler/Valves for pressure, differential pressure, volume flow and temperature regulators

2333 (Erz.-Nr./Model No. 2333), 2334 (2334), 2335 (2335), 2336, 2373, 2375, 44-0B, 44-1B, 44-2, 44-3, 44-6B, 44-7, 44-8, 45-1, 45-2, 45-3, 45-4, 45-5, 45-6, 2468, 2478 (2720), 45-9, 46-5, 46-6, 46-7, 46-9, 47-1, 47-4, 47-5, 47-9, 2487, 2488, 2489, 2491, 2494, 2495 (2730), 2405, 2406, 2421 (2811), 2392, 2412 (2812), 2114 (2814), 2417 (2817), 2422 (2814), 2423 (2823)

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.	2014/68/EU	vom 15.05.2014
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/EU	of 15 May 2014
Angewandtes Konformitätsbewertungsverfahren für Fluide nach Art. 4(1)(c.ii) und (c.i) zweiter Gedankenstrich.	Modul siehe Tabelle	durch zertifiziert by Bureau Veritas S. A. (0062)
Conformity assessment procedure applied for fluids according to Article 4(1)(c.ii) and (c.i), second indent	See table for module	

Nenndruck Pressure rating	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 16		ohne/without (1)						A (2)(3)			H					
PN 25		ohne/without (1)						A (2)(3)			H					
PN 40		ohne/without (1)						A (2)(3)			H					
PN 100 und PN 160		ohne/without (1)						H			-					
Class 150		ohne/without (1)						A (2)(3)			H					
Class 300		ohne/without (1)						A (2)(3)			H					
Class 600 und Class 900		ohne/without (1)						H			-					

- (1) Das auf dem Stellgerät aufgebrachte CE-Zeichen hat keine Gültigkeit im Sinne der Druckgeräterichtlinie.
The CE marking affixed to the control valve is not valid in the sense of the Pressure Equipment Directive.
- (2) Das auf dem Stellgerät aufgebrachte CE-Zeichen gilt ohne Bezeichnung der benannten Stelle (Kenn-Nr. 0062).
The CE marking affixed to the control valve is valid without specifying the notified body (ID number 0062).
- (3) Die Identifikationsnummer 0062 von Bureau Veritas S.A. gilt nicht für Modul A.
The identification number 0062 of Bureau Veritas S.A. is not valid for Modul A.

Geräte, denen laut Tabelle das Konformitätsbewertungsverfahren Modul H zugrunde liegt, beziehen sich auf die „Zulassungsbescheinigung eines Qualitätssicherungsystems“ ausgestellt durch die benannte Stelle.
Devices whose conformity has been assessed based on Module H refer to the certificate of approval for the quality management system issued by the notified body.

Dem Entwurf zu Grunde gelegt sind Verfahren aus:/The design is based on the procedures specified in the following standards:
DIN EN 12516-2, DIN EN 12516-3 bzw./or 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 management system is monitored by the following notified body:

**Bureau Veritas S.A. Nr./No. 0062, Newtime, 52 Boulevard du Parc, Ile de la Jatte, 92200 Neuilly sur Seine, France
Hersteller/Manufacturer: SAMSON AG, Weismüllerstraße 3, 60314 Frankfurt am Main, Germany**

Frankfurt am Main, 08. Februar 2017/08 February 2017

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SMART IN FLOW CONTROL



EU-KONFORMITÄTSERKLÄRUNG EU DECLARATION OF CONFORMITY

Modul D/Module D, Nr./No. / N° CE-0062-PED-D-SAM 001-16-DEU-rev-A

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

Sicherheitsüberströmventil SÜV 44-4 (2720-03)/Safety Excess Pressure Valve SEV 44-4 (2720-03)

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. 2014/68/EU vom 15.05.2014

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/EU of 15 May 2014

EG-Baumusterprüfbescheinigung EC Type Examination Certificate	Modul B Module B	Zertifikat-Nr./Certificate no. 01 202 931-B-13-0029
Angewandtes Konformitätsbewertungsverfahren Conformity assessment procedure applied	Modul D Module D	Zertifikat-Nr./Certificate no. CE-0062-PED-D-SAM-001-16-DEU-rev-A

Dem Entwurf zu Grunde gelegt sind Verfahren aus:/The design is based on the procedures specified in the following standards:
DIN EN 12516-2, DIN EN 12516-3 bzw./or ASME B16.24, ASME B16.42

Das Qualitätssicherungssystem des Herstellers wird von folgender benannter Stelle überwacht:
The manufacturer's quality management system is monitored by the following notified body:

Bureau Veritas S.A. Nr./No. 0062, Newtime, 52 Boulevard du Parc, Ile de la Jatte, 92200 Neuilly sur Seine, France
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EU-Konformitätsbescheinigung, Blatt: 28, Modul: B und Modul: D, DCE EN, Rev. 03, 2017-02-08.docx

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EU-KONFORMITÄTSERKLÄRUNG EU DECLARATION OF CONFORMITY

Modul D/Module D, Nr./No. / N° CE-0062-PED-D-SAM 001-16-DEU-rev-A

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

Sicherheitsüberströmventil SAV 44-8 (2720-02)/Safety Excess Pressure Valve SSV 44-8 (2720-02)

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. 2014/68/EU vom 15.05.2014

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

EG-Baumusterprüfbescheinigung Modul B Zertifikat-Nr./Certificate no.
EC Type Examination Certificate Module B 01 202 931-B-13-0027

Angewandtes Konformitätsbewertungsverfahren Modul D Zertifikat-Nr./Certificate no.
Conformity assessment procedure applied Module D CE-0062-PED-D-SAM-001-16-DEU-rev-A

Dem Entwurf zu Grunde gelegt sind Verfahren aus/The design is based on the procedures specified in the following standards:
DIN EN 12516-2, DIN EN 12516-3 bzw./or ASME B16.24, ASME B16.42

Das Qualitätssicherungssystem des Herstellers wird von folgender benannter Stelle überwacht:
The manufacturer's quality management system is monitored by the following notified body:

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