

# MOUNTING AND OPERATING INSTRUCTIONS



## EB 2536 EN

Translation of original instructions



## Type 2375 Universal Excess Pressure Valve

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](mailto:aftersaleservice@samsongroup.com)).



Documents relating to the device, such as the mounting and operating instructions, are available on our website at [www.samsongroup.com](http://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*

<b>1</b>	<b>Safety instructions and measures</b> .....	<b>5</b>
1.1	Notes on possible severe personal injury .....	8
1.2	Notes on possible personal injury .....	8
1.3	Notes on possible property damage .....	9
<b>2</b>	<b>Markings on the device</b> .....	<b>11</b>
2.1	Material identification number .....	11
<b>3</b>	<b>Design and principle of operation</b> .....	<b>12</b>
3.1	Technical data .....	12
<b>4</b>	<b>Measures for preparation</b> .....	<b>17</b>
4.1	Unpacking .....	17
4.2	Transporting and lifting .....	17
4.2.1	Transporting .....	18
4.2.2	Lifting.....	18
4.3	Storage.....	19
4.4	Preparation for installation.....	20
<b>5</b>	<b>Mounting and start-up</b> .....	<b>20</b>
5.1	Mounting positions.....	21
5.2	Installing the regulator into the pipeline.....	22
5.2.1	Checking the installation conditions .....	22
5.2.2	Additional fittings.....	23
5.3	Installing the regulator .....	24
5.4	Start-up.....	24
<b>6</b>	<b>Operation</b> .....	<b>25</b>
6.1	Adjusting the set points.....	25
<b>7</b>	<b>Servicing</b> .....	<b>26</b>
7.1	Replacing the operating diaphragm .....	27
7.2	Replacing the set point springs .....	28
7.3	Tightening torques and lubricant .....	29
7.4	Preparation for return shipment.....	29
7.5	Ordering spare parts and operating supplies .....	29
<b>8</b>	<b>Malfunctions</b> .....	<b>30</b>
<b>9</b>	<b>Decommissioning and removal</b> .....	<b>32</b>
9.1	Decommissioning.....	32
9.2	Disposal.....	32

## Contents

<b>10</b>	<b>Annex.....</b>	<b>33</b>
10.1	After-sales service .....	33
<b>11</b>	<b>Certificates .....</b>	<b>33</b>

# 1 Safety instructions and measures

## Intended use

The SAMSON Type 2375 Regulator is a universal excess pressure valve. The self-operated regulator is used to control the upstream pressure  $p_1$  in the pipeline to the adjusted set point. Liquids and gases in processing and industrial plants can be controlled by the regulator. The regulator is primarily used in applications with seawater.

The devices are designed to operate under exactly defined conditions (e.g. operating pressure, process medium, temperature). Therefore, operators must ensure that the devices 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 devices 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 devices are not suitable for use outside the limits defined during configuration and by the technical data. Furthermore, the following activities do not comply with the intended use:

- Use of non-original spare parts
- Performing service work not specified

## Qualifications of operating personnel

The devices must be mounted, started up and serviced 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.

## 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 or by moving parts by taking appropriate precautions. Plant operators and operating personnel must observe all hazard statements, warnings and caution notes in these mounting and operating instructions.

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

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.

These mounting and operating instructions deals with the standard version of the device. Components of the device that differ to those used for the standard version described in this document can be exchanged with other certain SAMSON components. The residual hazards of these components are described in the associated mounting and operating instructions (see documents listed under 'Referenced documentation').

### Safety features

The Type 2375 Regulator does not have any special safety features. When relieved of pressure, the regulator is closed by the force of the set point springs.

### 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 devices comply with the requirements of the European Pressure Equipment Directive 2014/68/EU. Devices with a CE marking have an EU declaration of conformity, which includes information about the applied conformity assessment procedure. The EU declaration of conformity is included in the annex of these instructions (see section 11).

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

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

### Referenced documentation

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

- Mounting and operating instructions for additional components, such as strainers (e.g. Type 2NI Strainer ► EB 1015)

## 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.

- 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.

## 1.2 Notes on possible personal injury

### WARNING

#### **Crush hazard arising from moving parts.**

The regulator contains moving parts, 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. 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 burn injuries due to hot or cold components and pipelines.**

Depending on the application, 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
  - ▶ [www.samsongroup.com/en/about-samson/material-compliance/reach-regulation/](http://www.samsongroup.com/en/about-samson/material-compliance/reach-regulation/)

## 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.
- Observe the maximum permissible pressure for regulator and plant.

**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 tightening torques specified in section 7.3.

### ! NOTICE

#### **Risk of regulator damage due to the use of unsuitable sealants or lubricants.**

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

→ Only use sealants and lubricants approved by SAMSON (see section 7.3).

#### **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 actuator stem guide of the Type 2375 Regulator.

→ 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.

#### **Regulator damage due to condensed glycol.**

In principle, the materials are also resistant to high concentrations of glycol. Nevertheless, glycol reacts when it comes into contact with metals and causes acids to form. We cannot prevent this reaction.

→ Use suitable inhibitors. The plant operator is responsible for the selection and use of suitable inhibitors.

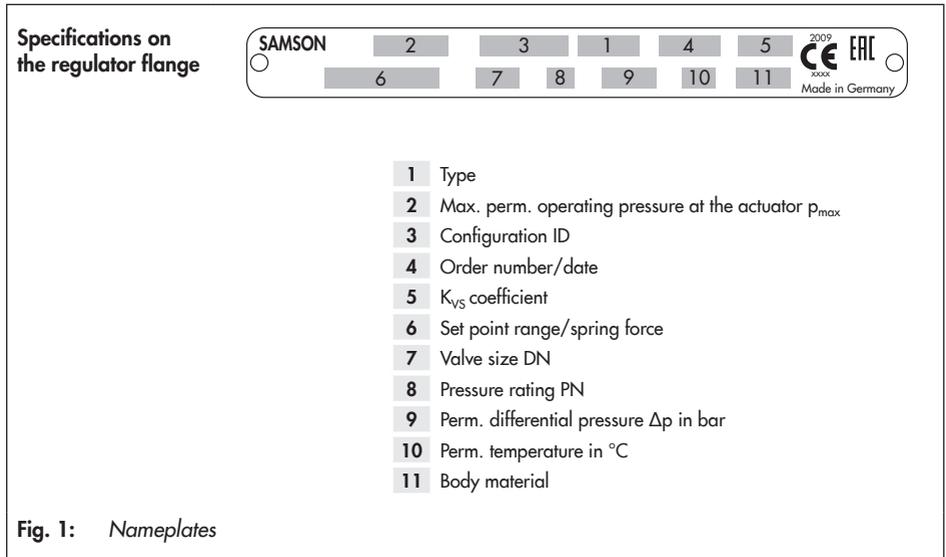
#### **Risk of regulator damage due to incorrectly attached slings.**

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

#### **Risk of excess pressure damaging plant sections due to construction-related seat leakage through the regulator.**

→ Always install a safety device (e.g. safety excess pressure valve or safety relief valve) in the plant.

## 2 Markings on the device



### 2.1 Material identification number

See the nameplate (11, body material). For more details on the nameplate, see Fig. 1.

### 3 Design and principle of operation

(see Fig. 2)

The medium flows through the valve body (1) as indicated by the arrow. The position of the plug (3) determines the flow rate across the area released between plug and valve seat (2).

The set point springs (7) are loaded by the set point adjuster (6). When relieved of pressure ( $p_1 = p_2$ ), the regulator is closed by the force of the set point springs.

The upstream pressure  $p_1$  to be controlled is tapped upstream of the valve and transmitted over the control line (14) to the operating diaphragm (12) where it is converted into a positioning force. This force is used to move the valve plug (3) according to the force of the set point springs (7). The plug stem (4) with the plug is connected to the actuator stem (11) of the actuator (10).

The spring force is adjustable at the set point adjuster (6). When the force resulting from the upstream pressure  $p_1$  rises above the adjusted set point, the regulator opens proportionally to the change in pressure.

### 3.1 Technical data

#### Process medium and scope of application

Type 2375 Universal Excess Pressure Valve to control the upstream pressure  $p_1$  in applications with seawater.

For pressure ranges from **0.8 to 16 bar** · **DN 15 to 50**<sup>1)</sup> · **PN 40** · Suitable for gases and liquids **up to 80 °C**.

The regulator opens when the upstream pressure  $p_1$  rises.

<sup>1)</sup> Larger valve sizes on request

#### Dimensions in mm · Weights in kg

The lengths and heights in the dimensional drawing are shown in Fig. 3.

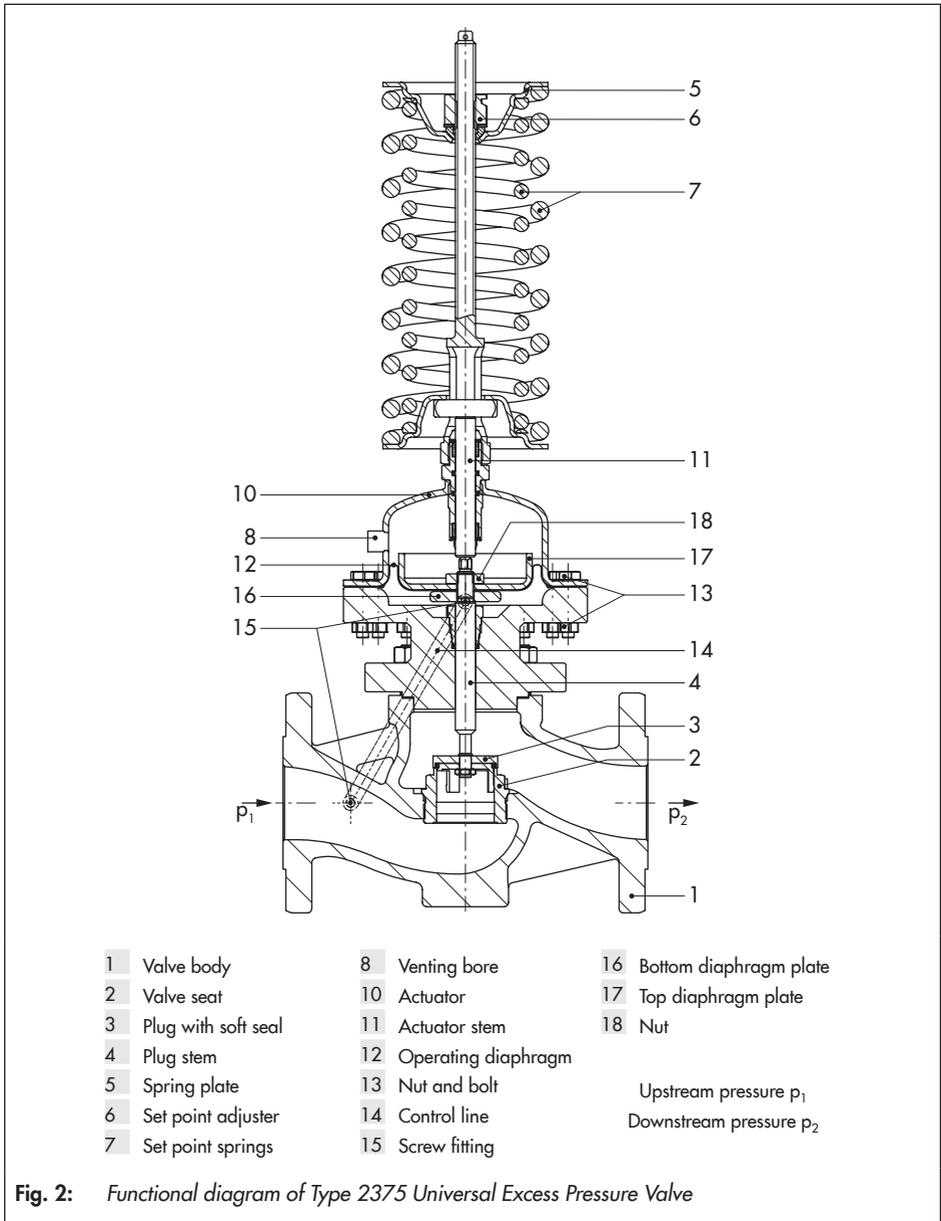


Fig. 2: Functional diagram of Type 2375 Universal Excess Pressure Valve

## Design and principle of operation

**Table 1:** *Technical data · All pressure stated as gauge pressure*

Valve		
Valve size		DN 15 to 50 <sup>1)</sup>
Pressure rating		PN 40
Max. permissible temperature		80 °C <sup>2)</sup>
Max. permissible ambient temperature		80 °C
Leakage class according to IEC 60534-4	Metal seal	≤0.05 % of K <sub>V5</sub> coefficient (Class I)
	Soft seal	≤0.01 % of K <sub>V5</sub> coefficient (Class IV)
Conformity		
Actuator		
Set point ranges		0.8 to 2.5 bar · 1.2 to 3.5 bar · 2 to 5 bar 2.4 to 6.3 bar · 4.5 to 10 bar · 8 to 16 bar
Actuator area		40 cm <sup>2</sup> · 80 cm <sup>2</sup> · 160 cm <sup>2</sup>
Max. permissible pressure at actuator	40 cm <sup>2</sup>	20 bar
	80 cm <sup>2</sup>	12 bar
	160 cm <sup>2</sup>	7.5 bar

<sup>1)</sup> Larger valve sizes on request

<sup>2)</sup> 20 °C for seawater (approx. 3.5 % salt content) with duplex 1.4462/1.4470 or 40 °C with super duplex 1.4410/1.4469

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

Valve	
Valve body	Cast stainless steel 1.4470
Seat and plug	Stainless steel
Soft seal	EPDM, FKM, NBR or PTFE
Gasket	Graphite on metal core
Actuator	
Diaphragm case	Diaphragm case 1.4301
Diaphragm	EPDM, FKM or NBR

**Table 3:**  $K_{VS}$  coefficients and max. permissible differential pressures  $\Delta p$

Valve size	$K_{VS}$ coefficients		Max. permissible differential pressures $\Delta p$	
	Standard version	Special version	Standard version	Special version
DN 15	4.0	1 · 2.5	10 bar	14 bar
DN 20	6.3			
DN 25	8.0			
DN 32	16.0	10.0	8 bar	10 bar
DN 40	20.0		4 bar	
DN 50	32.0	16.0		8 bar

**Table 4:** Dimensions in mm and weights in kg

Valve size		DN 15	DN 20	DN 25	DN 32	DN 40	DN 50
Regulator dimensions	Length L	130 mm	150 mm	160 mm	180 mm	200 mm	230 mm
	Height H	560 mm			575 mm		
	Height H1	55 mm			72 mm		
Set point ranges Actuator housing	0.8 to 2.5 bar	ØD = 225 mm, A = 160 cm <sup>2</sup>					
	1.2 to 3.5 bar	ØD = 225 mm, A = 160 cm <sup>2</sup>					
	2.0 to 5.0 bar	ØD = 170 mm, A = 160 cm <sup>2</sup>					
	2.4 to 6.3 bar	ØD = 170 mm, A = 80 cm <sup>2</sup>					
	4.5 to 10.0 bar	ØD = 170 mm, A = 80 cm <sup>2</sup>					
	8.0 to 16.0 bar	ØD = 170 mm, A = 40 cm <sup>2</sup>					
Weight <sup>1)</sup> , approx. kg		19	20	23	26	29	

<sup>1)</sup> The weights are based on the weight of the regulator with actuator area A = 80 cm<sup>2</sup>. Add 4 kg for A = 160 cm<sup>2</sup>.

Dimensions

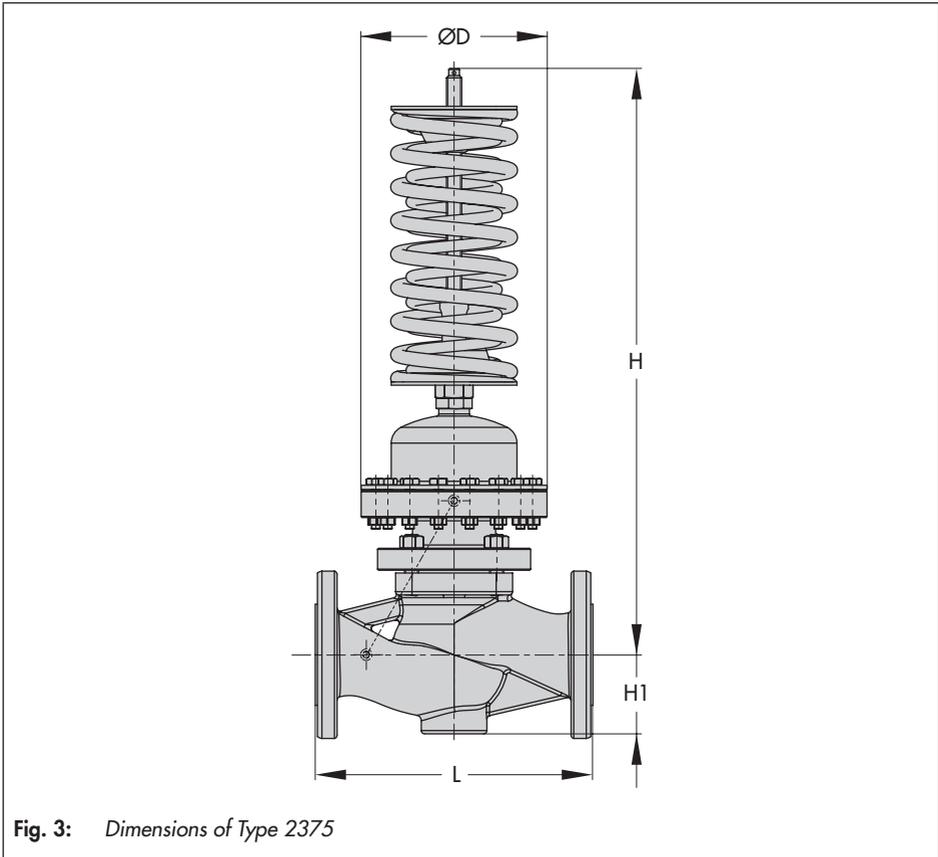


Fig. 3: Dimensions of Type 2375

## 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

#### Note

*Do not remove the packaging until immediately before installation.*

Proceed as follows to lift and install the regulator:

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

#### NOTICE

***Risk of regulator damage due to foreign particles entering the valve.***

*The protective caps fitted on the regulator's inlet and outlet prevent foreign particles from entering the regulator and damaging it.*

*Do not remove the protective caps until immediately before installation.*

## 4.2 Transporting and lifting

#### DANGER

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

#### WARNING

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

- *Only use approved lifting equipment and accessories whose minimum lifting capacity is higher than the weight of the regulator.*
- *Refer to Table 4 for weights.*

#### WARNING

***Risk of personal injury due to the regulator tipping.***

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

#### Tip

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

### 4.2.1 Transporting

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

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

#### Transport instructions

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

### 4.2.2 Lifting

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

#### Lifting instructions

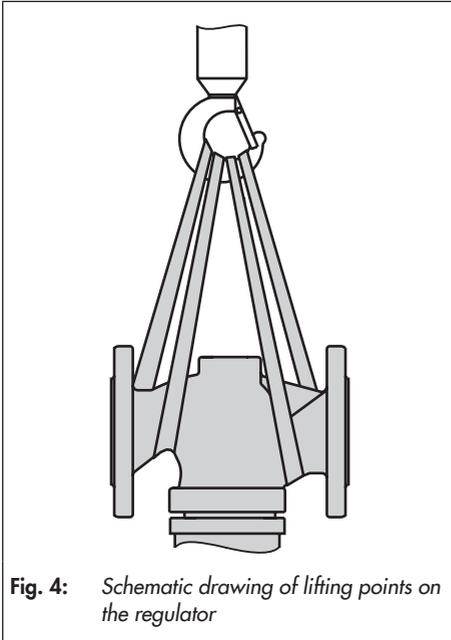
- Secure slings against slipping.
- Make sure the slings can be removed after installation.
- Prevent the regulator from tilting or tipping.
- Do not leave loads suspended when interrupting work for longer periods of time.
- Make sure that the axis of the pipeline is always horizontal during lifting and the axis of the loop stem is always vertical.

#### Lifting

1. Attach one sling to the flange of the body and to the rigging equipment (e.g. hook) of the crane or forklift (see Fig. 4).
2. Carefully lift the regulator. Check whether the lifting equipment and accessories can bear the weight.
3. Move the regulator at an even pace to the site of installation.
4. Install the regulator into the pipeline. See section 5.
5. After installation in the pipeline, check whether the flanges are bolted tight and the regulator in the pipeline holds.
6. Remove slings.

**Tip**

We recommend using a hook with safety latch (see Fig. 4). The safety latch prevents the slings from slipping during lifting and transporting.



**Fig. 4:** Schematic drawing of lifting points on the regulator

### 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.

**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, dirt and frost. 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.

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## 4.4 Preparation for installation

Proceed as follows:

→ Flush the pipelines.

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### Note

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

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- Check the regulator to make sure that it is clean.
- Check the regulator for damage.
- Check to make sure that the type designation, valve size, material, pressure rating and temperature range of the regulator match the plant conditions (size and pressure rating of the pipeline, medium temperature etc.).
- Check any mounted pressure gauges to make sure they function.

## 5 Mounting and start-up

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### 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.
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### NOTICE

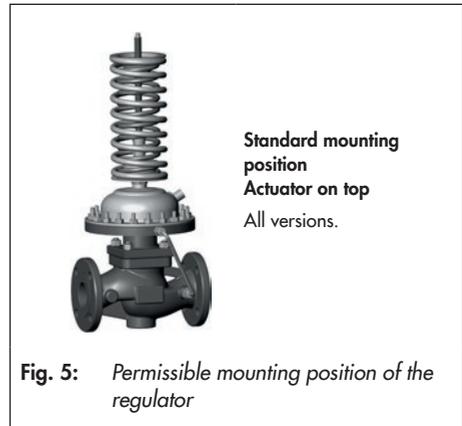
**Risk of impaired functioning of the regulator and leakage at the joint due to installation under tension.**

- 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.
-

**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.



**Fig. 5:** Permissible mounting position of the regulator

## 5.1 Mounting positions

See Fig. 5 for permissible mounting positions.

### Standard mounting position

Install the regulator in a horizontal pipeline with the set point springs facing upward. Make sure the medium flows through the valve in the direction indicated by the arrow.

Choose a place of installation that allows you to freely access the regulator even after the entire plant has been completed.

## 5.2 Installing the regulator into the pipeline

### 5.2.1 Checking the installation conditions

**NOTICE**

**Risk of excess pressure damaging plant sections due to construction-related seat leakage through the regulator.**

– Always install a safety device (e.g. safety excess pressure valve or safety relief valve) in the plant.

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

#### Support and suspension

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

#### Pipeline routing

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

**Table 5:** Inlet and outlet lengths

<p>Q Flow rate a Inlet length b Outlet length</p>			
State of process medium	Regulator conditions	Inlet length a	Outlet length b
Gas	$Ma \leq 0.3$	2	4
Liquid	Free of cavitation/ $w < 3 \text{ m/s}$		

## 5.2.2 Additional fittings

### Strainer

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 2 NI Strainer is suitable (► T 1015).

- Do not use the strainer to permanently filter the process medium.
- Install the strainer upstream of the regulator.
- The direction of flow must correspond to the arrow on the body.
- Allow sufficient space to remove the filter.
- **Horizontal pipeline**  
Cover and filter face downwards.
- **Vertical pipeline**  
In strainers where the medium flows upward, the cover and filter face upward.

### Shut-off valve

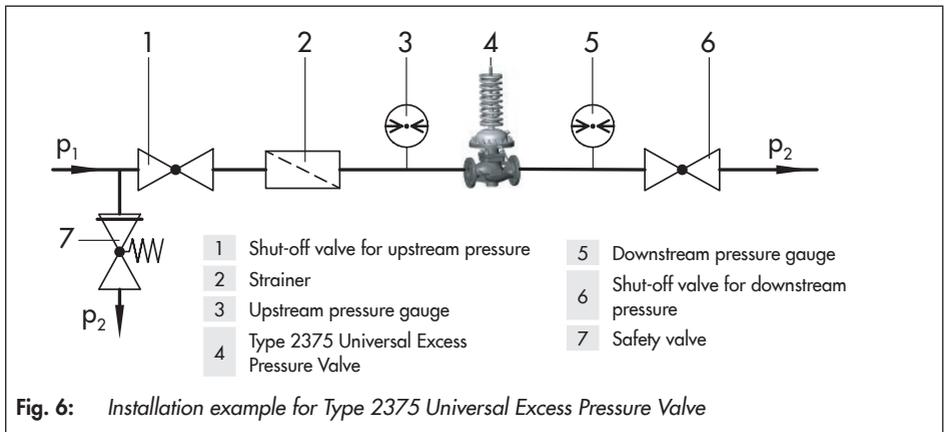
Install a hand-operated shut-off valve both upstream of the strainer and at the outlet of the return flow pipe (see Fig. 6). This allows the plant to be shut down for cleaning and maintenance, and when the plant is not used for longer periods of time.

### Safety valve

To safeguard the plant against excess pressure, install a safety valve upstream of the shut-off valve on the upstream side (see Fig. 6).

### Pressure gauges

Install a pressure gauge both upstream and downstream of the regulator to monitor the pressures prevailing in the plant (see Fig. 6). Optionally with pressure gauge connections on the valve body.



### 5.3 Installing the regulator

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

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#### **NOTICE**

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

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

---

### 5.4 Start-up

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#### **⚠ DANGER**

***Risk of personal injury due to process medium escaping.***

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

---

#### **ⓘ NOTICE**

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

*– The pressure must not exceed the maximum permissible pressure by 1.5 times the pressure of the set point range.*

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- ➔ Do not start up the regulator until all parts have been mounted.
  - ➔ Open all valves downstream ( $p_2$ ) of the regulator.
  - ➔ Open the shut-off valves slowly over a time period of several minutes, preferably starting from the return flow pipe.
- 

#### **ⓘ NOTICE**

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

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

---

### Pressure testing the plant

All plant components must be designed for the test pressure. Remove the regulator from the pipeline, if necessary.

#### ! NOTICE

**Risk of damage to the actuator diaphragm due to impermissible excess pressure.**

*The pressure at the actuator must not exceed the nominal valve pressure by 1.5 times and the maximum permissible actuator pressure on testing the pressure of the plant when the regulator is already installed. If necessary, detach the control line and seal the openings with end plugs.*

### Rinsing the plant

After filling the plant, first completely open the consumer. Rinse out the pipeline at full flow rate for several minutes. Check the installed strainer (e.g. by measuring the pressure drop). Clean the strainer, if necessary.

## 6 Operation

### 6.1 Adjusting the set points

#### i Note

Turning the set point adjuster (6)

– Turn clockwise ☺:

*Tension the springs to increase the set point.*

– Turn counterclockwise ☹:

*Relieve the spring tension to reduce the set point.*

#### How to proceed:

→ Adjust the upstream pressure ( $p_1$ ) by turning the set point adjuster (6) to load the set point springs (7).

→ Turn clockwise ☺:

*Tension the springs to increase the set point.*

Turn counterclockwise ☹:

*Relieve the spring tension to reduce the set point.*

Monitor the set point pressure to be adjusted at the pressure gauge (see Fig. 6) installed on the upstream pressure side.

## 7 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.

---

### **⚠ DANGER**

#### **Risk of bursting in pressure equipment.**

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

- Before starting any work on the device, 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.
- If necessary, a suitable overpressure protection must be installed on site in the plant section.
- 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. 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 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.

---

### **ⓘ NOTICE**

#### **Risk of regulator damage due to incorrect servicing.**

Only let properly trained staff perform service 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 tightening torques specified in section 7.3.

**i Note**

The regulator was checked by SAMSON before delivery.

- The product warranty becomes void if service 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.

**i Note**

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

**💡 Tip**

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

## 7.1 Replacing the operating diaphragm

See Fig. 2.

If the upstream pressure deviates considerably from the set point, check if the diaphragm is leaking. We recommend removing the regulator from the pipeline.

### Remove the operating diaphragm as follows:

1. Put the regulator out of operation (see section 9.1).
2. Unscrew and clean the control line (14) and screw fittings (15).
3. Completely relieve the tension from the set point springs (7) of the diaphragm actuator by turning the set point adjuster (6) counterclockwise (↺).
4. Loosen the bolts (13) at the actuator and remove the top casing of the actuator (10) together with the actuator stem and set point springs.
5. Unscrew the nut (18) while holding the top end of the plug stem (4) with a box wrench (width across flats 8) stationary.
6. Lift off the top diaphragm plate (17).
7. Take off the operating diaphragm (12).
8. Check the screw fittings for dirt and clean them, if necessary.

### Mount the operating diaphragm as follows:

1. Insert the operating diaphragm into the actuator housing onto the bottom diaphragm plate (16).
2. Place on the top diaphragm plate (17) and screw on the nut (18) while holding the top end of the plug stem (4) with a box wrench (width across flats 8) stationary. Observe tightening torque specified in section 7.3.
3. Place on the diaphragm case (10) together with the actuator stem and set point springs and tighten the bolts (13) evenly. Observe tightening torque specified in section 7.3.
4. Screw the control line (14) onto the screw fittings (15). Observe tightening torque specified in section 7.3.

---

#### **i** 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 operating diaphragm.*

---

## 7.2 Replacing the set point springs

→ See Fig. 2

### Removing the set point springs

1. Completely relieve the tension from the set point springs (7) of the diaphragm actuator by turning the set point adjuster (6) counterclockwise (↺).
2. Remove the set point adjuster (6) and spring plate (5).
3. Take out the set point springs (7).

### Mounting the set point springs

4. Insert new set point springs (7).
5. Place on the spring plate (5) and screw on the set point adjuster (6).

---

#### **i** Note

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

---

## 7.3 Tightening torques and lubricant

See Fig. 2.

Component	Actuator area in cm <sup>2</sup>	Tightening torque in Nm
Screws (13)	40 · 80 · 160	20
Screw fittings (15)	40 · 80 · 160	22
Nut (18)	40 · 80 · 160	20

Lubricant	Item no.
Gleitmo 591	8150-0111

## 7.4 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 9.1).
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](http://www.samsongroup.com) > SERVICE & SUPPORT > After-sales Service.
4. Continue as described on our website at  
▶ [www.samsongroup.com](http://www.samsongroup.com) > Service & Support > After-sales Service > Returning goods.

## 7.5 Ordering spare parts and operating supplies

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

### 8 Malfunctions

The malfunctions listed in Table 6 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 10.1.

---

**i Note**

*Contact SAMSON's After-sales Service for malfunctions not listed in the table and when the malfunction cannot be remedied as described.*

---

Table 6: Troubleshooting

Malfunction	Possible reasons	Recommended action
Upstream pressure $p_1$ exceeds the adjusted set point.	Regulator installed against the flow.	→ Install the regulator so that the direction of flow matches the direction indicated by the arrow on the body.
	Foreign particles blocking the plug	→ Remove foreign particles. → Replace damaged parts.
	Insufficient pressure pulses on the operating diaphragm.	→ Clean the control line and screw fittings.
	Regulator or $K_{VS}/C_V$ coefficient too small	→ 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.
	Defective operating diaphragm	→ Replace damaged operating diaphragm.
	Seal venting bore.	→ Open venting bore.
Upstream pressure $p_1$ drops below the adjusted set point.	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.
	Strainer blocked.	→ Clean the strainer.
	Seat and plug are worn or leak.	→ Replace the damaged seat and plug.
	Foreign particles blocking the plug	→ Remove foreign particles. → Replace damaged parts.
Jerky control response.	Increased friction, e.g. due to foreign particles between seat and plug or in the stem guide on the bonnet.	→ Remove foreign particles. → Replace damaged parts.
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.
Loud noises.	High flow velocity, cavitation.	→ Check the sizing. → If necessary, install a larger regulator.
Leakage at the venting bore	Defective operating diaphragm	→ Replace damaged operating diaphragm.
Leakage at the diaphragm stem	Dirt in the seal of the actuator casing and actuator stem	→ Replace the actuator stem and actuator casing.

# 9 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 control line.
- 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 and control line.**

While working on the regulator and control line, 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.

## 9.1 Decommissioning

To decommission the regulator for service 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. If necessary, allow the pipeline and regulator to cool down or warm up to the ambient temperature.
4. Depressurize the plant sections.
5. Completely drain the pipelines and regulator.
6. Remove the regulator from the pipeline.

## 9.2 Disposal



SAMSON is a producer registered at the following European institution  
▶ <https://www.ewrn.org/national-registers/national-registers>.  
WEEE reg. no.:  
DE 62194439/FR 025665

- 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@samsongroup.com](mailto:aftersaleservice@samsongroup.com) giving details of your company address.

**💡 Tip**

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

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
- 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.)

## 10 Annex

### 10.1 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 [aftersaleservice@samsongroup.com](mailto:aftersaleservice@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](http://www.samsongroup.com)) or in all SAMSON product catalogs.

### 11 Certificates

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

## EU DECLARATION OF CONFORMITY TRANSLATION



### Module A

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

Devices	Series	Type	Version	
Self-operated Regulators	43	2432	DIN EN, body, CC499K and EN-GJS-400-18-LT, DN 50, PN 25, fluids G2, L2, L1 <sup>1)</sup>	
	43	2436	DIN EN, body, CC499K and EN-GJS-400-18-LT, DN 50, PN 25, fluids G2, L2, L1 <sup>1)</sup>	
	43	2437	DIN EN, body, CC499K and EN-GJS-400-18-LT, DN 50, PN 25, fluids G2, L2, L1 <sup>1)</sup>	
	---	2111	DIN EN, body, EN-GJS-400-18-LT, DN 50, PN 25, fluids G2, L2, L1 <sup>1)</sup> DIN EN, body, 1.0619 and 1.4408, DN 40-50, PN 40, fluids G2, L2, L1 <sup>1)</sup> ANSI, body, A216 WCC and A351 CF8M, NPS 1½-2, Class 300, fluids G2, L2, L1 <sup>1)</sup>	
Three-way valve	---	2119	DIN EN, body, EN-GJL-250 and 1.0619, DN 65-125, PN 16, fluids G2, L2, L1 <sup>1)</sup>	
			DIN EN, body, 1.0619, DN 50-80, PN 25, fluids G2, L2, L1 <sup>1)</sup>	
			DIN EN, body, 1.0619 and 1.4408, DN 40-50, PN 40, fluids G2, L2, L1 <sup>1)</sup>	
			ANSI, body, A216 WCC and A351 CF8M, NPS 2½-4, Class 150, fluids G2, L2, L1 <sup>1)</sup>	
Control valve	---	3222	ANSI, body, A216 WCC and A351 CF8M, NPS 1½, Class 300, fluids G2, L2, L1 <sup>1)</sup>	
			DIN EN, body, EN-GJS-400-18-LT, DN 50, PN 25, fluids G2, L2, L1 <sup>1)</sup>	
Three-way valve	---	3226	DIN EN, body, CC499K, DN 32-40, PN 25, all fluids	
Three-way valve	---	3260	DIN EN, body, EN-GJL-250, DN 65-200, PN 16, fluids G2, L2 <sup>2)</sup>	
Globe valve Three-way valve	V2001	3531	DIN EN, body, EN-GJS-400-18-LT, DN 50-80, PN 25, all fluids	
		3535	DIN EN, body, 1.0619 and 1.4408, DN 32-40, PN 25, all fluids	
Control valve	---	3214	ANSI, body, A216 WCC and A351 CF8M, NPS 1½-2, Class 150, all fluids	
			DIN EN, body, EN-GJL-250, DN 65-125, PN 16, fluids G2, L2, L1 <sup>1)</sup>	
			DIN EN, body, EN-GJS-400-18-LT, DN 50-80, PN 25, fluids G2, L2, L1 <sup>1)</sup>	
			ANSI, body, A128 B, NPS 3-4, Class 125, fluids G2, L2, L1 <sup>1)</sup>	
Self-operated Regulators	42	2423	ANSI, body, A216 WCC and A351 CF8M, NPS 1½-2, Class 150, all fluids	
			DIN EN, body, EN-GJL-250 and EN-GJS-400-18-LT, DN 65-125, PN 16, fluids G2, L2, L1 <sup>1)</sup>	
			DIN EN, body, EN-GJS-418-LT, DN 50-80, PN 25, fluids G2, L2, L1 <sup>1)</sup>	
			DIN EN, body, 1.0619 and 1.4408, DN 32-50, PN 16, all fluids	
	42	2422	DIN EN, body, 1.0619 and 1.4408, DN 32-40, PN 25, all fluids	
			ANSI, body, A126 B, NPS 3-4, Class 125, fluids G2, L2, L1 <sup>1)</sup>	
			DIN EN, body, EN-GJL-250 and EN-GJS-400-18-LT, DN 65-125, PN 16, fluids G2, L2, L1 <sup>1)</sup>	
			DIN EN, body, EN-GJS-400-18-LT, DN 50-80, PN 25, fluids G2, L2, L1 <sup>1)</sup>	
Strainers	1N/1NI	2601	DIN EN, body, 1.0619 and 1.4408, DN 32-50, PN 16, all fluids	
			ANSI, body, A216 WCC, A351 CF8M and A352 LCC, NPS 1½-2, Class 150, all fluids	
Strainers	2N/2NI	2602	DIN EN, body, CB752S, G 2 (DN50), PN25, fluids G2, L2 <sup>2)</sup>	
			DIN EN, body, EN-GJL-250, DN 200-250, PN 10, fluids G2, L2, L1 <sup>1)</sup>	
			DIN EN, body, EN-GJL-250, DN 65-125, PN 16, fluids G2, L2, L1 <sup>1)</sup>	
			DIN EN, body, EN-GJS-400-18-LT, DN 100-125, PN 16, fluids G2, L2, L1 <sup>1)</sup>	
Self-operated Regulators	---	2373/2375	DIN EN, body, EN-GJS-400-18-LT, DN 50-80, PN 25, fluids G2, L2, L1 <sup>1)</sup>	
			ANSI, body, A995 4A and A995 5A, NPS 1½-2, Class 150, all fluids	
	44	2440 (44-0B) 2441 (44-1B) 2446 (44-5B) 2442 (44-2) 2443 (44-3) 2444 (44-4) 2447 (44-7) 2448 (44-8) 2449 (44-9)	DIN EN, body, EN-GJS-400-18-LT, DN 50, PN 25, fluids G2, L2, L1 <sup>1)</sup>	DIN EN, body, EN-GJS-400-18-LT and CC499K, DN 50, PN 25, fluids G2, L2, L1 <sup>1)</sup>
				DIN EN, body, EN-GJS-400-18-LT and CC499K, DN 50, PN 25, fluids G2, L2, L1 <sup>1)</sup>
				DIN EN, body, EN-GJS-400-18-LT and CC499K, DN 50, PN 25, fluids G2, L2, L1 <sup>1)</sup>
				DIN EN, body, EN-GJS-400-18-LT and CC499K, DN 50, PN 25, fluids G2, L2, L1 <sup>1)</sup>
				DIN EN, body, EN-GJS-400-18-LT and CC499K, DN 50, PN 25, fluids G2, L2, L1 <sup>1)</sup>
				DIN EN, body, EN-GJS-400-18-LT and CC499K, DN 50, PN 25, fluids G2, L2, L1 <sup>1)</sup>

Revision 00

EU DECLARATION OF CONFORMITY  
TRANSLATION

Devices	Series	Type	Version
Self-operated Regulators	45	2451 (45-1)	DIN EN, body, EN-GJS-400-18-LT and CC499K, DN 50, PN 25, fluids G2, L2, L1 <sup>1)</sup>
		2452 (45-2)	
		2453 (45-3)	
		2454 (45-4)	
		2456 (45-6)	
	46	2465 (46-5)	DIN EN, body, EN-GJS-400-18-LT and CC499K, DN 50, PN 25, fluids G2, L2, L1 <sup>1)</sup>
		2466 (46-6)	
		2467 (46-7)	
		2469 (46-9)	
	47	2471 (47-1)	DIN EN, body, EN-GJS-400-18-LT and CC499K, DN 50, PN 25, fluids G2, L2, L1 <sup>1)</sup>
		2474 (47-4)	
		2475 (47-5)	
		2479 (47-9)	
	48	2488	DIN EN, body, EN-GJS-400-18-LT and CC499K, DN 50, PN 25, fluids G2, L2, L1 <sup>1)</sup>
		2489	
	40	2405	DIN EN, body, EN-GJS-400-18-LT, DN 50, PN 25, fluids G2, L2, L1 <sup>1)</sup>
			ANSI, body, A216 WCC and A351 CF8M, NPS 1½-2, Class 150, all fluids
		2406	DIN EN, body, EN-GJL-250, DN 65-125, PN 16, fluids G2, L2, L1 <sup>1)</sup>
			DIN EN, body, EN-GJS-400-18-LT, DN 50, PN 25, fluids G2, L2, L1 <sup>1)</sup>
			ANSI, body, A126 B, NPS 3-4, Class 125, fluids G2, L2, L1 <sup>1)</sup>
	41	2412	DIN EN, body, EN-GJL-250, DN 65-100, PN 16, fluids G2, L2, L1 <sup>1)</sup>
			DIN EN, body, EN-GJS-400-18-LT, DN 50-80, PN 25, fluids G2, L2, L1 <sup>1)</sup>
		2417	ANSI, body, A126 B, NPS 3-4, Class 125, fluids G2, L2, L1 <sup>1)</sup>
			ANSI, body, A216 WCC and A351 CF8M, NPS 1½-2, Class 150, all fluids
			DIN EN, body, 1.0619, 1.4408, 1.4571 and 1.4401/1.4404, DN 32-50, PN 16, all fluids
	42	2421 RS	DIN EN, body, 1.0619, 1.4408, 1.4571 and 1.4401/1.4404, DN 32-40, PN 25, all fluids
ANSI, body, A216 WCC, A351 CF8M and A182 F316/A182 F316L, NPS 1½-2, Class 150, all fluids			
DIN EN, body, EN-GJL-250, DN 65-200, PN 16, fluids G2, L2 <sup>2)</sup>			
DIN EN, body, EN-GJS-400-18-LT, DN 65-150, PN 16, fluids G2, L2 <sup>2)</sup>			
DIN EN, body, EN-GJS-400-18-LT, DN 65-125, PN 25, fluids G2, L2 <sup>2)</sup>			
---	2331 2337	DIN EN, body, EN-GJS-400-18-LT, DN 65-200, PN 16, fluids G2, L2 <sup>2)</sup>	
		DIN EN, body, EN-GJS-400-18-LT, DN 65-125, PN 16, fluids G2, L2 <sup>2)</sup>	
		DIN EN, body, EN-GJS-400-18-LT, DN 65-125, PN 16, fluids G2, L2 <sup>2)</sup>	
		DIN EN, body, EN-GJL-250, DN 65-125, PN 16, fluids G2, L2, L1 <sup>1)</sup>	
		DIN EN, body, EN-GJS-400-18-LT, DN 65-80, PN 25, fluids G2, L2, L1 <sup>1)</sup>	
---	2333 2335	DIN EN, body, EN-GJS-400-18-LT, DN 65-80, PN 25, fluids G2, L2, L1 <sup>1)</sup>	
		ANSI, body, A126 B, NPS 3-4, Class 125, fluids G2, L2, L1 <sup>1)</sup>	
		DIN EN, body, EN-GJL-250, DN 65-125, PN 16, fluids G2, L2, L1 <sup>1)</sup>	
---	2334	DIN EN, body, EN-GJS-400-18-LT, DN 65-125, PN 16, fluids G2, L2, L1 <sup>1)</sup>	
		DIN EN, body, EN-GJS-400-18-LT, DN 65-80, PN 25, fluids G2, L2, L1 <sup>1)</sup>	
		ANSI, body, A126 B, NPS 3-4, Class 125, fluids G2, L2, L1 <sup>1)</sup>	
---	2404-1	DIN EN, body, EN-GJL-250, DN 65-125, PN16, fluids G2, L2, L1 <sup>1)</sup>	
		ANSI, body, A126 B, NPS 3-4, Class 125, fluids G2, L2, L1 <sup>1)</sup>	
---	2404-2	DIN EN, body, EN-GJL-250, DN 65-125, PN16, fluids G2, L2, L1 <sup>1)</sup>	
		ANSI, body, A216 WCC and A351 CF8M, NPS 1½-2, Class 150, all fluids	

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

<sup>2)</sup> Gases according to Article 4(1)(c.i), second indent  
Liquids according to Article 4(1)(c.ii), second indent

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Page 2 of 3

## EU DECLARATION OF CONFORMITY TRANSLATION



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

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

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

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

Frankfurt am Main, 26. August 2022

A handwritten signature in blue ink, appearing to read "ppa. N. Tollas".

ppa. Norbert Tollas  
Senior Vice President  
Global Operations

A handwritten signature in blue ink, appearing to read "i.v. P. Scheermesser".

i.v. Peter Scheermesser  
Director  
Product Maintenance & Engineered Products

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Page 3 of 3

EU DECLARATION OF CONFORMITY  
TRANSLATION

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

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

Devices	Series	Type	Version
Three-way valve	---	2119	DIN EN, body, EN-GJL-250 and 1.0619, DN 150, PN 16, fluids G2, L2, L1 <sup>1)</sup>
			DIN EN, body, 1.0619, DN 100-150, PN 25, fluids G2, L2, L1 <sup>1)</sup>
			DIN EN, body, 1.0619 and 1.4408, DN 65-150, PN 40, fluids G2, L2, L1 <sup>1)</sup>
			ANSI, body, A216 WCC and A351 CF8M, NPS 6, Class 150, fluids G2, L2, L1 <sup>1)</sup>
			ANSI, body, A216 WCC and A351 CF8M, NPS 2-6, Class 300, fluids G2, L2, L1 <sup>1)</sup>
Self-operated Regulators	---	3222	DIN EN, body, CC499K, DN 50, PN 25, all fluids
Three-way valve	---	3260	DIN EN, body, EN-GJL-250, DN 250-300, PN 16, fluids G2, L2 <sup>1)</sup>
Globe valve Three-way valve	V2001	3531	DIN EN, body, 1.0619 and 1.4408, DN 50-80, PN 25, all fluids
		3535	ANSI, body, A216 WCC and A351 CF8M, NPS 2½-3, Class 150, all fluids
Control valve	---	3214	DIN EN, body, EN-GJL-250, DN 150-400, PN 16, fluids G2, L2, L1 <sup>1)</sup>
			DIN EN, body, EN-GJS-400-18-LT, DN 100-150, PN 25, fluids G2, L2, L1 <sup>1)</sup>
			DIN EN, body, 1.0619, DN 32-400, PN 40, all fluids
			ANSI, body, A126 B, NPS 6-10, Class 125, fluids G2, L2, L1 <sup>1)</sup>
			ANSI, body, A216 WCC, NPS 2½-10, Class 150, all fluids
			ANSI, body, A216 WCC, NPS 1½-10, Class 300, all fluids
			DIN EN, body, EN-GJL-250, DN 150-250, PN 16, fluids G2, L2, L1 <sup>1)</sup>
Self-operated Regulators	42	2423	DIN EN, body, EN-GJS-400-18-LT, DN 150, PN 16, fluids G2, L2, L1 <sup>1)</sup>
			DIN EN, body, EN-GJS-400-18-LT, DN 100-150, PN 25, fluids G2, L2, L1 <sup>1)</sup>
			DIN EN, body, 1.0619 and 1.4408, DN 65-250, PN 16, all fluids
			DIN EN, body, 1.0619 and 1.4408, DN 50-250, PN 25, all fluids
			DIN EN, body, 1.0619 and 1.4408, DN 32-250, PN 40, all fluids
			ANSI, body, A126 B, NPS 6-10, Class 125, fluids G2, L2, L1 <sup>1)</sup>
			ANSI, body, A216 WCC and A351 CF8M, NPS 2½-10, Class 150, all fluids
			ANSI, body, A216 WCC and A351 CF8M, NPS 1½-10, Class 300, all fluids
			DIN EN, body, EN-GJL-250, DN 150-400, PN 16, fluids G2, L2, L1 <sup>1)</sup>
			DIN EN, body, EN-GJS-400-18-LT, DN 100-150, PN 25, fluids G2, L2, L1 <sup>1)</sup>
	42	2422	DIN EN, body, 1.0619 and 1.4408, DN 65-400, PN 16, all fluids
			DIN EN, body, 1.0619 and 1.4408, DN 200-400, PN 25, all fluids
			DIN EN, body, 1.0619 and 1.4408, DN 32-400, PN 40, all fluids
			DIN EN, body, 1.0460, DN 40-50, PN 40, all Fluids
			DIN EN, body, 1.6220+QT, DN 65-250, PN 16, all fluids
			DIN EN, body, 1.6220+QT, DN 200-250, PN 25, all fluids
			DIN EN, body, 1.6220+QT, DN 32-250, PN 40, all fluids
			ANSI, body, A126 B, NPS 6-16, Class 125, fluids G2, L2, L1 <sup>1)</sup>
			ANSI, body, A216 WCC and A351CF8M, NPS 2½-16, Class 150, all fluids
			ANSI, body, A216 WCC and A351CF8M, NPS 1½-16, Class 300, all fluids
42	2421RS	ANSI, body, A105, NPS 1½-2, Class 300, all fluids	
		ANSI, body, A352 LCC, NPS 2½-10, Class 150, all fluids	
		ANSI, body, A352 LCC, NPS 1½-10, Class 300, all fluids	
		DIN EN, body, 1.0619 and 1.4408, DN 65-150, PN 16, all fluids	
		DIN EN, body, 1.0619 and 1.4408, DN 50-150, PN 25, all fluids	
		DIN EN, body, 1.0619 and 1.4408, DN 32-150, PN 40, all fluids	
		DIN EN, body, 1.4571 and 1.4401/1.4404, DN 50, PN 25, all fluids	
		DIN EN, body, 1.4571 and 1.4401/1.4404, DN 32-50, PN 40, all fluids	
ANSI, body, A216 WCC and A351 CF8M, NPS 2½-6, Class 150, all fluids			
ANSI, body, A216 WCC and A351 CF8M, NPS 1½-6, Class 300, all fluids			

Revision 00

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

Page 1 of 3

## EU DECLARATION OF CONFORMITY TRANSLATION



Devices	Series	Type	Version
Self-operated Regulators	40	2405	DIN EN, body, 1.0619, 1.4571, 1.4404, 1.4408, 1.0460, DN 32-50, PN40, all fluids
			ANSI, body, A105, A182 F316L, A351 CF8M, A216 WCC, NPS 1½-2, Class 300, all fluids
			DIN EN, body, EN-GJL-250, DN 150, PN 16, fluids G2, L2, L1 <sup>1)</sup>
			DIN EN, body, 1.0619 and 1.4408, DN 32-150, PN 40, all fluids
			DIN EN, body, 1.0460 and 1.4404, DN 32-50, PN 40, all fluids
			ANSI, body, A126 B, NPS 6, Class 125, fluids G2, L2, L1 <sup>1)</sup>
		2406	ANSI, body, A216 WCC and A351 CF8M, NPS 2½-6, Class 150, all fluids
			ANSI, body, A216 WCC and A351 CF8M, NPS 1½-6, Class 300, all fluids
			ANSI, body, A105 and A182 F316L, NPS 1½-2, Class 300, all fluids
			DIN EN, body, EN-GJS-400-18-LT, DN 100, PN25, fluids G2, L2, L1 <sup>1)</sup>
			DIN EN, body, 1.0619 and 1.4408, DN 32-100, PN 40, all fluids
			DIN EN, body, 1.0460, 1.4571 and 1.4404, DN 32-80, PN 40, all fluids
	41	2412	ANSI, body, A216 WCC and A351 CF8M, NPS 2½-4, Class 150, all fluids
			ANSI, body, A216 WCC and A351 CF8M, NPS 1½-4, Class 300, all fluids
			ANSI, body, A105 and A182 F316L, NPS 1½-3, Class 300, all fluids
		2417	DIN EN, body, EN-GJL-250, DN 150, PN16, fluids G2, L2, L1 <sup>1)</sup>
			DIN EN, body, 1.0619 und 1.4408, DN 32-150, PN 40, all fluids
			DIN EN, body, 1.0619 und 1.4408, DN 32-150, PN 40, all fluids
	---	2404-1	ANSI, body, A126 B, NPS 6, Class 125, fluids G2, L2, L1 <sup>1)</sup>
			ANSI, body, A216 WCC und A351 CF8M, NPS 2½-6, Class 150, all fluids
			ANSI, body, A216 WCC und A351 CF8M, NPS 1½-6, Class 300, all fluids
		2404-2	DIN EN, body, EN-GJL-250, DN 150-400, PN 16, fluids G2, L2, L1 <sup>1)</sup>
			DIN EN, body, 1.0619 und 1.4408, DN 65-400, PN 16, all fluids
			DIN EN, body, 1.0619 und 1.4408, DN 65-400, PN 40, all fluids
	---	2331	ANSI, body, A126 B, NPS 6-16, Class 125, fluids G2, L2, L1 <sup>1)</sup>
			ANSI, body, A216 WCC und A351 CF8M, NPS 2½-16, Class 150, all fluids
			ANSI, body, A216 WCC und A351 CF8M, NPS 2½-10, Class 300, all fluids
		2337	DIN EN, body, EN-GJL-250, DN 250, PN 16, fluids G2, L2 <sup>1)</sup>
			DIN EN, body, 1.0619, DN 250, PN 16, fluids G2, L2 <sup>1)</sup>
			DIN EN, body, 1.0619, DN 200-250, PN 25, fluids G2, L2 <sup>1)</sup>
	---	2333	DIN EN, body, 1.0619, DN 125-250, PN 40, fluids G2, L2 <sup>1)</sup>
			DIN EN, body, EN-GJL-250, DN 150-400, PN 16, fluids G2, L2, L1 <sup>1)</sup>
			DIN EN, body, EN-GJS-400-18-LT, DN 100-150, PN 25, fluids G2, L2, L1 <sup>1)</sup>
		2335	DIN EN, body, 1.0619 und 1.4408, DN 65-400, PN 16, all fluids
			DIN EN, body, 1.0619 und 1.4408, DN 200-400, PN 25, all fluids
			DIN EN, body, 1.0619 und 1.4408, DN 65-400, PN 40, all fluids
	---	2334	ANSI, body, A126 B, NPS 6-16, Class 125, fluids G2, L2, L1 <sup>1)</sup>
			ANSI, body, A216 WCC und A351 CF8M, NPS 2½-16, Class 150, all fluids
			ANSI, body, A216 WCC und A351 CF8M, NPS 2½-16, Class 300, all fluids
		2373	DIN EN, body, EN-GJL-250, DN 150-400, PN 16, fluids G2, L2, L1 <sup>1)</sup>
			DIN EN, body, EN-GJS-400-18-LT, DN 150, PN 16, fluids G2, L2, L1 <sup>1)</sup>
			DIN EN, body, EN-GJS-400-18-LT, DN 100-150, PN 25, fluids G2, L2, L1 <sup>1)</sup>
---	2374	DIN EN, body, 1.0619 und 1.4408, DN 65-400, PN 16, all fluids	
		DIN EN, body, 1.0619 und 1.4408, DN 200-400, PN 25, all fluids	
		DIN EN, body, 1.0619 und 1.4408, DN 65-400, PN 40, all fluids	
	2375	ANSI, body, A126 B, NPS 6-16, Class 125, fluids G2, L2, L1 <sup>1)</sup>	
		ANSI, body, A216 WCC und A351 CF8M, NPS 2½-16, Class 150, all fluids	
		ANSI, body, A216 WCC und A351 CF8M, NPS 2½-16, Class 300, all fluids	
Strainers	2N/2NI	2602	DIN EN, body, EN-GJL-250, DN 150-250, PN 16, fluids G2, L2, L1 <sup>1)</sup>
			DIN EN, body, EN-GJS-400-18-LT, DN 150, PN 16, fluids G2, L2, L1 <sup>1)</sup>
			DIN EN, body, EN-GJS-400-18-LT, DN 100-150, PN 25, fluids G2, L2, L1 <sup>1)</sup>
			DIN EN, body, 1.0619, DN 100-250, PN 16, all fluids
			DIN EN, body, 1.0619, DN 100-250, PN 16, all fluids
			DIN EN, body, 1.0619, DN 100-250, PN 16, all fluids

Revision 00

EU DECLARATION OF CONFORMITY  
TRANSLATION

Devices	Series	Type	Version
Strainers	2N/2NI	2602	DIN EN, body, 1.0619, DN 200-250, PN 25, all fluids
			DIN EN, body, 1.0619, DN 32-250, PN 40, all fluids
			DIN EN, body, 1.4408, DN 65-100, PN 16, all fluids
			DIN EN, body, 1.4408, DN 32-100, PN 40, all fluids

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

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

Directive of the European Parliament and of the Council on the harmonization of the laws of the Member States relating to the making available on the market of pressure equipment	2014/68/EU	of 15. May 2014
Applied conformity assessment procedure for fluids according to Article 4(1)	Module H	by Bureau Veritas 0062

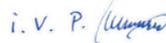
The manufacturer's quality management system is monitored by the following notified body:  
**Bureau Veritas Services SAS, 8 Cours du Triangle, 92800 PUTEAUX – LA DEFENSE, FRANCE**  
Technical standards applied: DIN EN 12516-2, DIN EN 12516-3, ASME B16.34

Manufacturer: SAMSON AG, Weismuellerstrasse 3, 60314 Frankfurt am Main, Germany

Frankfurt am Main, 14. October 2022



pp.a. Norbert Tollas  
Senior Vice President  
Global Operations



i.V. Peter Scheermesser  
Director  
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Revision 00

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Page 3 of 3

**EB 2536 EN**



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