

MOUNTING AND OPERATING INSTRUCTIONS

The SAMSON logo consists of the word "SAMSON" in a bold, white, sans-serif font, centered within a solid black circle. This circle is itself centered within a white square frame.

EB 2557 EN

Translation of original instructions



**Type 2357-1 Pressure Regulator (pressure
build-up regulator or pressure reducing valve)**



**Type 2357-2 Pressure Regulator
(excess pressure valve)**

Type 2357-1 Pressure Regulator · Type 2357-2 Excess Pressure Valve

Self-operated Pressure Regulators for special applications

Edition October 2024

The CE mark consists of the letters "C" and "E" in a stylized, bold, sans-serif font, positioned side-by-side.

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).



The mounting and operating instructions for the devices are included in the scope of delivery. The latest documentation is available on our website at www.samsongroup.com > **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 2357-1 and Type 2357-2 Regulators are pressure regulators.

The self-operated regulators are used as a pressure reducing valve/pressure build-up regulator (Type 2357-1) or as an excess pressure valve (Type 2357-2). Cryogenic gases and liquids as well as other liquids, gases and vapors in industrial plants can be controlled by the regulators.

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 controllers 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 inscription on the device 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 additional fittings 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

Personal protective equipment

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

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

Safety instructions and measures

Qualifications of operating personnel

The regulators 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.

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 regulators 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.

SAMSON also recommends 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 deal 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 'Referenced documents' chapter).

Safety features

The regulators do not have any special safety features. When relieved of pressure, the Type 2357-1 Regulator is opened by the force of the internal valve springs and the Type 2357-2 Regulator is closed by the force of the internal valve 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 regulators comply with the requirements of the European Pressure Equipment Directive 2014/68/EU and the Machinery Directive 2006/42/EC. Regulators with a CE marking have a declaration of conformity which includes information about the applied conformity assessment procedure. The declaration of conformity is included in the 'Certificates' chapter.

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).

Safety instructions and measures

Referenced documents

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

- Data sheets for
 - e.g. **Spare parts and accessories · Self-operated regulators for cryogenic media** ▶ T 2570
- Manuals
 - Oxygen manual** ▶ H 01
- Mounting and operating instructions as well as data sheets for additional fittings (e.g. shut-off valves, pressure gauges etc.).

1.1 Notes on possible severe personal injury

DANGER

Risk of bursting in the regulator.

Regulators and pipelines are pressure equipment. Impermissible pressure or 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 as well as the regulator.
- Drain the process medium from the plant sections affected as well as from the regulator.
- Wear personal protective equipment.

Risk of injury due to incorrect handling of oxygen or cryogenic gases in applications.

The regulator can be used for oxygen service or applications with cryogenic gases. Oxygen is a hazardous substance, which reacts quickly, leading to combustion and explosions. Contact with cryogenic gases causes severe frostbite and cold burns (cryogenic burns). Operating personnel must be trained for these applications. Unqualified operating personnel expose themselves and others to an increased risk of injury.

- Operating personnel must be sufficiently trained and be made aware of the hazards in applications involving oxygen or cryogenic gases.
- Instructions and information on how to safely handle devices for oxygen service can be found in the Manual ► H 01.

1.2 Notes on possible personal injury

WARNING

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

Depending on the process medium, 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 the safe use of the part affected. ► <https://www.samsongroup.com/en/about-samson/environment-social-governance/material-compliance/reach-regulation/>

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 the plant sections affected and from the regulator.
- Wear protective clothing, safety gloves and eye protection.

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.

1.3 Notes on possible property damage

! 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.

Risk of regulator damage due to incorrectly attached slings.

- Do not attach load-bearing slings to the regulator.

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 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.

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

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 the 'Tightening torques' chapter in the Appendix).

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.
When in doubt, consult SAMSON.

1.3 Notes on possible property damage

! NOTICE

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

- Keep the regulator and the tools used free from solvents and grease.
- Make sure that only suitable lubricants are used.

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 internal set point springs.

- 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 (see the 'Installation' chapter).
- In the event that the formation of ice restricts the movement of the springs, we recommend using a heat gun to melt the ice.

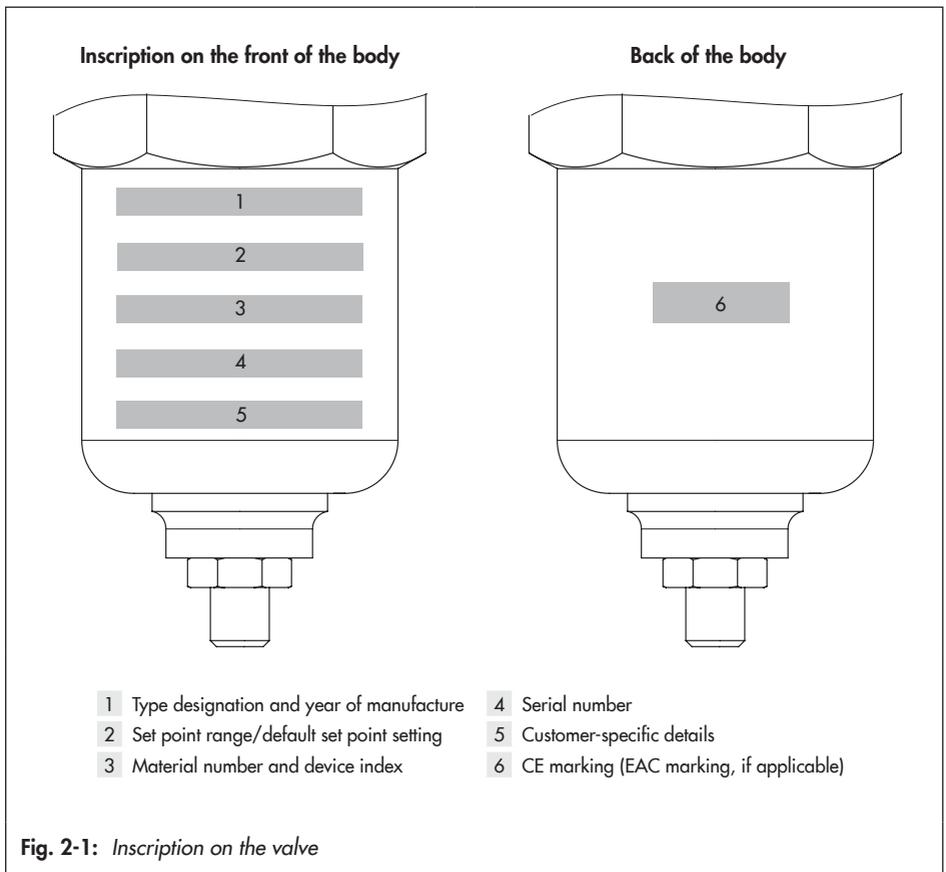
i Note

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

2 Markings on the device

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

2.1 Incriptions on the regulator



2.2 Material identification number

Contact SAMSON specifying the material number to find out which material is used. The material number is included in the inscription ("Material number and device index", 3).

For more details on the inscription, see Chapter 2.1.

3 Design and principle of operation

→ See Fig. 3-1

Type 2357-1

→ Pressure build-up regulator

Direction of flow from port B to port A. The pressure upstream of the valve (port B) is transmitted to the operating diaphragm. The valve closes when the upstream pressure increases and opens when the upstream pressure drops.

The pressure build-up regulator operates as a safety valve and relieves the pressure chamber upstream of the inlet of pressure when the pressure exceeds the set point by 5 bar. After overcoming the spring force of the top springs (16), the valve opens to equalize the pressures.

→ Pressure reducing valve

Direction of flow from port A to port B. The valve is open when no pressure is applied.

The pressure downstream of the valve (port B) is transmitted to the operating diaphragm (3). The positioning force produced moves the valve plug (2.1) depending on the spring force adjustable at the set point adjuster (10). The valve closes when the pressure downstream of the valve (port B) rises.

Type 2357-2

→ Excess pressure valve

Direction of flow always from port A to port B. The valve is closed when no pressure is applied. The pressure at port A is transmitted internally to the operating diaphragm (3). The positioning force produced opposes the adjustable spring force. The valve opens when the pressure increases until the set point is reached.

The regulator can optionally be equipped with a non-return unit (12), which prevents the medium from flowing back through the valve.

EC type examination

An EC type examination according to the Pressure Equipment Directive 2014/68/EU, Module B has been performed on the Type 2357-1 Regulator.

Design and principle of operation

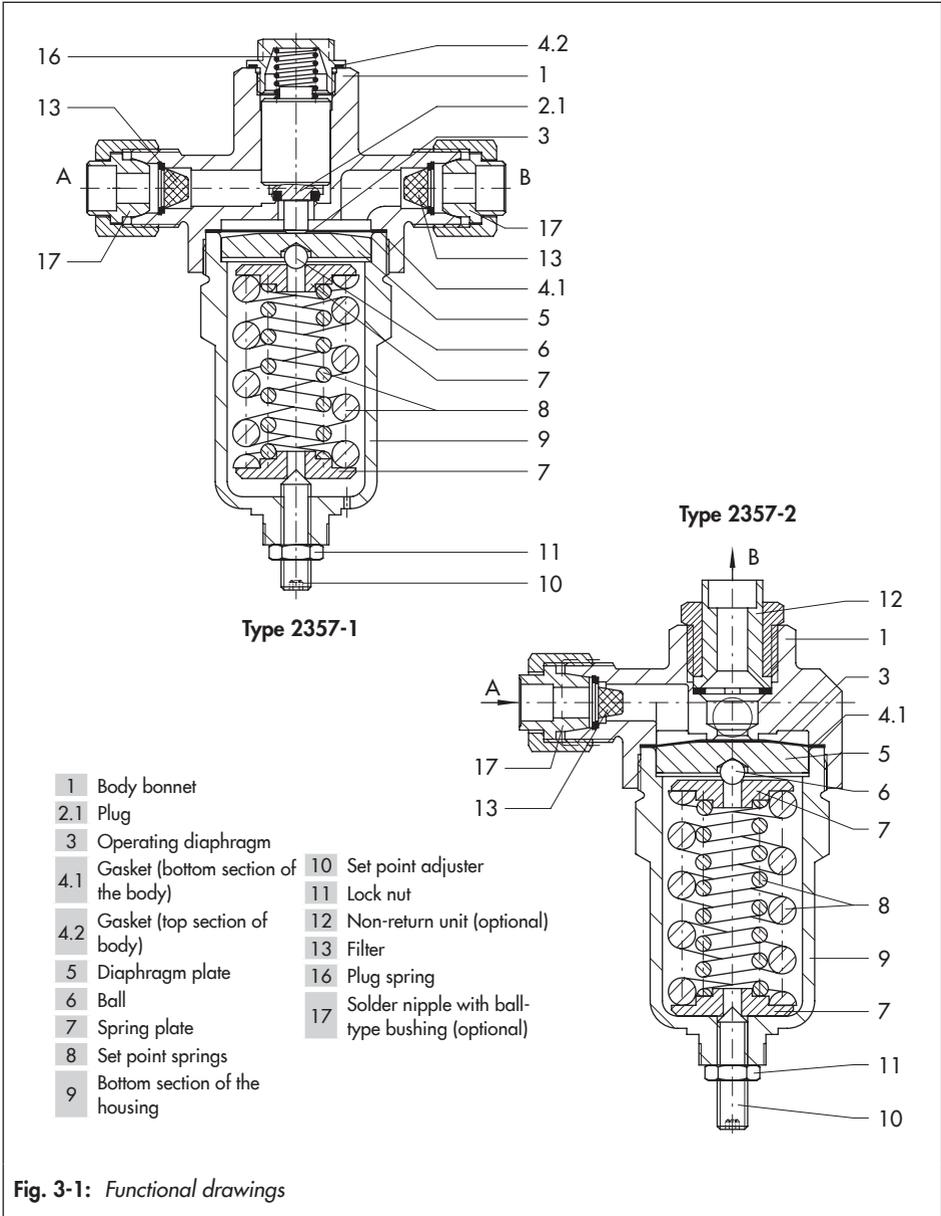


Fig. 3-1: Functional drawings

3.1 Additional fittings

→ See Fig. 3-2

Insulation

Regulators can be insulated to reduce heat energy transfer.

Refer to the instructions in the 'Installation' chapter.

Shut-off valves

We recommend installing shut-off valves (6.1, 6.2, 12). Their installation ensures the plant does not be completely shut down for service and repair work on the regulator or when the plant is not operated for extended periods.

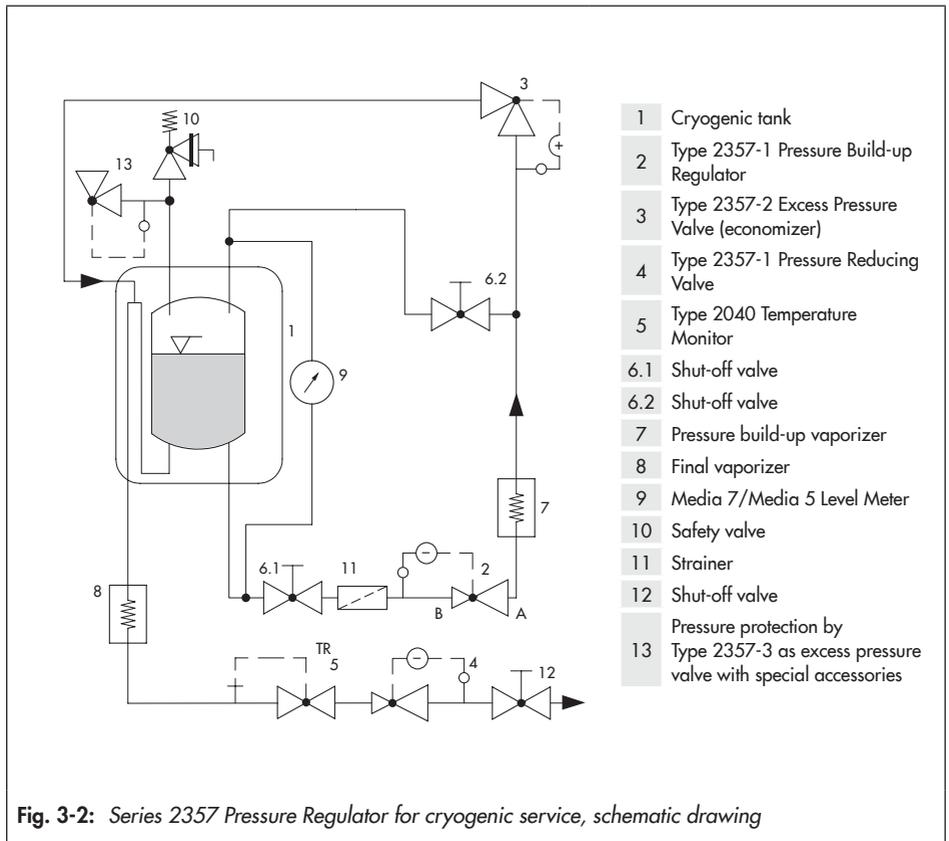


Fig. 3-2: Series 2357 Pressure Regulator for cryogenic service, schematic drawing

3.2 Technical data

The regulator nameplate provides information on the regulator version (see the 'Markings on the device' chapter).

i Note

More information is available in Data Sheet
▶ T 2557.

Process medium and scope of application

The Type 2357-1 and Type 2357-2 Pressure Regulators are designed to keep the pressure constant to an adjusted set point, especially in cryogenic plants.

- Pressure regulators for **cryogenic gases and liquids as well as other liquids, gases and vapors**
- Temperature range from **-196** to **+200 °C**
- Set points from **0.2** to **40 bar**
- Nominal size **G ¾**
- Pressure rating **PN 40** and **50**

Type 2357-1 (pressure reducing valve):

The regulator closes when the downstream pressure rises

Type 2357-1 (pressure build-up regulator):

The regulator opens when the upstream pressure drops

Type 2357-2 Excess Pressure Valve:

The regulator opens when the upstream pressure rises.

Conformity

The Type 2357-1 and Type 2357-2 Regulators bear the CE mark of conformity.



EC type examination

An EC type examination according to the Pressure Equipment Directive 2014/68/EU, Module B has been performed on the Type 2357-1 Regulator.

Serial number

The devices are marked with a serial number on the nameplate. Details on the nameplate are listed in ▶ EB 2557 .

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.

Dimensions and weights

Table 3-4 provides a summary of the dimensions and weights. The lengths and heights in the dimensional drawings are shown on page 3-6.

Table 3-1: Technical data · All pressures in bar (gauge)

Type ... Regulator	2357-1		2357-2	
K_{VS} coefficient	0.25	0.8	1.25	0.4
Set point ranges ¹⁾ in bar	1 to 25 · 10 to 36	1 to 8 · 5 to 25 · 8 to 40		1 to 25 · 10 to 36
Pressure rating	PN 40	PN 50 ²⁾		PN 40
Max. permissible operating pressure	50 bar			
Max. permissible differential pressure Δp	Type 2357-1	Gases: 30 bar · Liquids: 6 bar		
	Type 2357-2	3 bar (>3 bar only with special accessories; K_{VS} coefficient reduced to 0.02)		
Safety function for Type 2357-1	5 bar above the set point			
Temperature range	-196 to +200 °C			
Conformity	CE			

¹⁾ Further set point ranges on request

²⁾ For oxygen $p_{max} = 40$ bar

Table 3-2: Materials · Material numbers according to DIN EN

Type ... Regulator	2357-1	2357-2
Body and cover	CC754S-GM (brass) ¹⁾	
Plug	CW602N (brass) with PTFE soft seal	-
Operating diaphragm	CuBe	
Set point springs	Stainless steel 1.4310	
Body gasket	PTFE	

¹⁾ PN 40: CW617N (brass)

Table 3-3: Valve versions and end connections

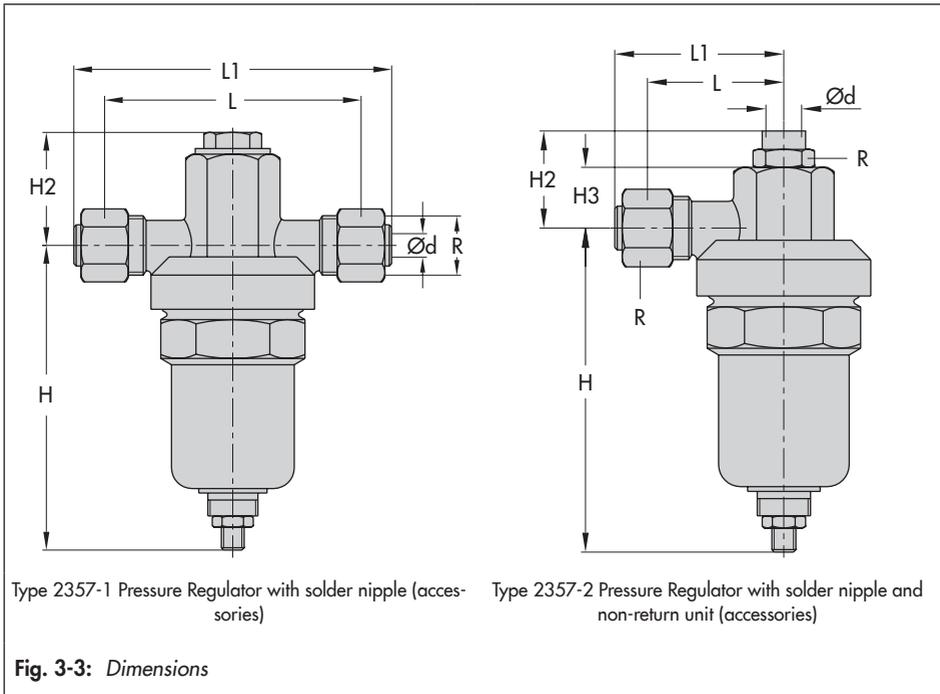
Regulators	Design	Version	Connections	
			Input	Output
Type 2357-1	Pressure build-up regulator/pressure reducing valve	Globe valve	G ¾ A conical joint	
Type 2357-2	Excess pressure valve	Angle valve	G ¾ A conical joint	G ¾ female thread

Design and principle of operation

Table 3-4: Dimensions in mm and weights in kg

Type ... Regulator	2357-1		2357-2	
	PN 40	PN 50	PN 40	PN 50
Length L	110 mm		55 mm	
Length L1	150 mm		75 mm	
Height H	95 mm	140 mm	95 mm	140 mm
Height H2	35 mm	51 mm	40 mm	
Height H3	-		25 mm	
Pipe Ø d	15 or 16 mm			
Connection R	G 3/4			
Weight, approx.	0.9 kg	2.0 kg	0.6 kg	1.7 kg

Dimensional drawings



4 Shipment and on-site transport

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

4.1 Accepting the delivered goods

After receiving the shipment, proceed as follows:

1. Check the scope of delivery. Check that the specifications on the nameplate and on the regulator itself match the specifications in the delivery note. See the 'Markings on the device' chapter for nameplate details.
2. Check the shipment for transportation damage. Report any damage to SAMSON and the forwarding agent (refer to delivery note).
3. Determine the weight and dimensions of the units to be lifted and transported in order to select the appropriate lifting equipment and lifting accessories. Refer to the transport documents and the 'Design and principle of operation' chapter.

4.2 Removing the packaging from the regulator

The regulator is a ready-to-install assembly in the delivered state.

- Do not open or remove the packaging until immediately before lifting to install the regulator into the pipeline.
- Leave the regulator in its transport container or on the pallet to transport it on site.
- Dispose and recycle the packaging in accordance with the local regulations.

4.3 Transporting and lifting the regulator

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).

- 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.
- The permissible ambient temperature of standard regulators is -196 to $+200$ °C.

4.4 Storing the regulator

NOTICE

Risk of regulator damage due to improper storage.

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

Storage instructions

- Protect the regulator against external influences (e.g. impact).
- Secure the regulator in the stored position against slipping or tipping over.
- Do not damage the corrosion protection (paint, surface coatings). Repair any damage immediately.
- Protect the regulator against moisture and dirt. Store it at a relative humidity of less than 75 %. In damp spaces, prevent condensation. If necessary, use a drying agent or heating.
- Make sure that the ambient air is free of acids or other corrosive media.
- The permissible storage temperature of standard regulators is -20 to $+65$ °C/ -4 to $+150$ °F.
- Do not place any objects on the regulator.

Note

SAMSON recommends to regularly check the regulator and the prevailing storage conditions during long storage periods.

Special storage instructions for elastomers

Elastomer, e.g. O-rings

- SAMSON recommends a storage temperature of 15 °C/ 60 °F for elastomers.
- Store elastomers away from lubricants, chemicals, solutions and fuels.

Tip

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

5 Installation

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

5.1 Installation conditions

Work position

The work position for the regulator is the front view onto all operating controls on the regulator (including any additional fittings) seen from the position of operating personnel.

Plant operators must ensure that, after installation of the device, the operating personnel can perform all necessary work safely and easily access the device from the work position.

Pipeline routing

The inlet and outlet lengths vary depending on several variables and process conditions and are intended as recommendations. Contact SAMSON if the lengths are significantly shorter than the recommended lengths.

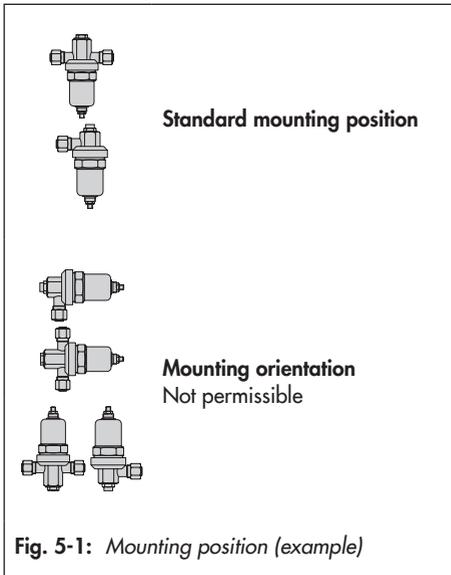
To ensure that the regulator functions properly, proceed as follows:

- Observe the inlet and outlet lengths (see Table 5-1). 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. Read information under "Mounting position" in this chapter.
- Install the regulator allowing sufficient space to remove it or to perform service work on it.

Mounting position

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

- Install horizontally with the spring housing suspended downward (see Fig. 5-1).
- Build-up pressure regulator (Type 2357-1) with safety function: direction of flow from port B to port **A**
- Pressure reducing valve (Type 2357-1): direction of flow from port **A** to port **B**
- Type 2357-2 Excess Pressure Valve with non-return unit: the center axis of the regulator must be vertical and port **B** must point upward.
- The ports are marked.
- Contact SAMSON if the mounting position is not as specified above.



5.2 Preparation for installation

Before installation, make sure the following conditions are met:

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

Proceed as follows:

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

Support or suspension

i Note

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

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

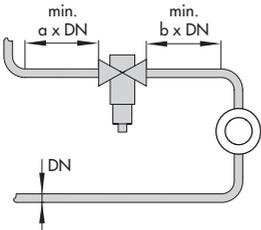
! NOTICE

Do not attach supports directly to the regulator.

i Note

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

Table 5-1: Inlet and outlet lengths



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

a Inlet length
b Outlet length

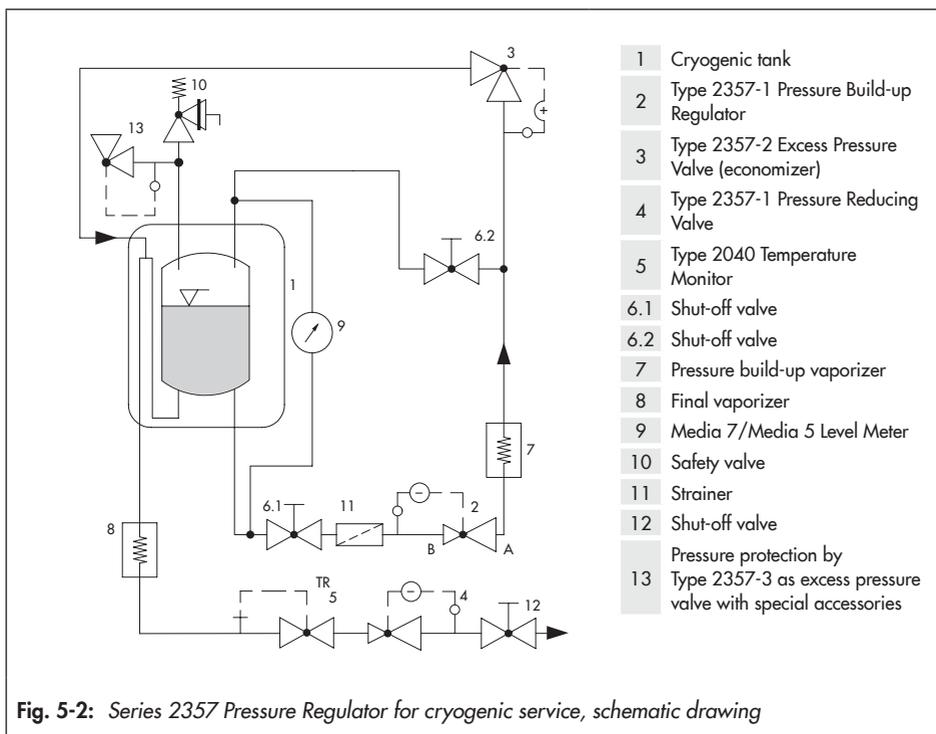


Fig. 5-2: Series 2357 Pressure Regulator for cryogenic service, schematic drawing

5.3 Installation

In the delivered state, the regulators are packed to be free of oil and grease for oxygen service as ready-to-install assemblies. The activities listed below are necessary for installation and before start-up of the regulators.

WARNING

Use of oil and grease in oxygen atmospheres!

Risk of explosion!

- *Make sure that the regulator is absolutely clean and free of oil and grease on installing it.*

NOTICE

Risk of regulator damage due to over- or under-torquing.

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 the 'Tightening torques' chapter in the Appendix).*

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.*

NOTICE

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

- *Only use tools approved by SAMSON (see the 'Tools' chapter in the Appendix).*

NOTICE

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

- *Only use lubricants approved by SAMSON (see the 'Lubricants' chapter in the Appendix).*
-

5.3.1 Installing the regulator

1. Close the shut-off valves upstream and downstream of the regulator while the regulator is being installed.

Allow pipelines to reach ambient temperature.

2. Observe the flow direction through the regulator.
3. Bolt the pipe to the valve free of stress.
4. Slowly open the shut-off valves in the pipeline after the regulator has been installed.

5.3.2 Cleaning the pipeline

SAMSON recommends additionally flushing the pipeline without the installed regulator before start-up. In this case, install a suitable length of pipe into the pipeline in place of the regulator.

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

⚠ 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:

5.4.1 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. Slowly open the shut-off valve installed upstream of the regulator.
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.

5.4.2 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 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 regulator body.
- ➔ The regulator must remain open.
- ➔ Make sure that the pressure rises simultaneously upstream and downstream of the regulator to avoid damaging the plug.

6 Start-up

The work described in this chapter is to be performed only 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.

📢 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 valve or control thermostat.

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

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

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. 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.
3. Check the regulator to ensure it functions properly.

6.2 Starting up the plant when gases and liquids are controlled

1. Open the shut-off valves slowly preferably starting from the upstream pressure side. Open all shut-off valves upstream of the tank.
2. Fill the plant **slowly** with the process medium. Avoid pressure surges.
3. Make sure that the pressure rises simultaneously upstream and downstream of the regulator to avoid damaging the plug.
4. To start up the regulator, open shut-off valves **slowly**.
5. Check the adjusted pressure set point at the pressure gauge installed near the regulator.

7 Operation

Immediately after completing start-up or placing the regulator back into service (see the 'Start-up' chapter), the regulator is ready for use.

⚠ 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.*

7.1 Adjusting the set point

Every pressure regulator is delivered with the set point listed in Fig. 7-1 already adjusted.

Turn the set point adjuster (10) using an Allen key (width across flats 5) to change the default set point.

Set point adjuster

- Turn the set point adjuster clockwise (↻) to increase the pressure set point.
- Turn the set point adjuster counterclockwise (↺) to reduce the pressure set point.

Provided a pressure gauge has been installed at a suitable point in the plant, the required set point can be directly adjusted while monitoring the pressure reading at the gauge.

When a pressure gauge is not installed, adjust the set point using the adjustment diagram Fig. 7-1.

⚠ NOTICE

Set point adjuster screwed too tight!

The regulator is blocked and the medium flow through it is restricted. Pressure regulation is no longer possible.

- *Only screw the set point adjuster up to the point where the spring tension can still be felt.*

How to proceed:

6. Undo the lock nut (11, width across flats 17) to allow the set point adjuster to move freely.
7. Determine the difference between the preadjusted set point (Fig. 7-1) and the required set point. Turn the set point adjuster (10) the required amount of turns as specified in Fig. 7-1.

Any subsequent change to the set point can be also be made by determining the required number of turns using the specifications listed in Fig. 7-1.

Operation

8. Lock the setting with the lock nut (11).

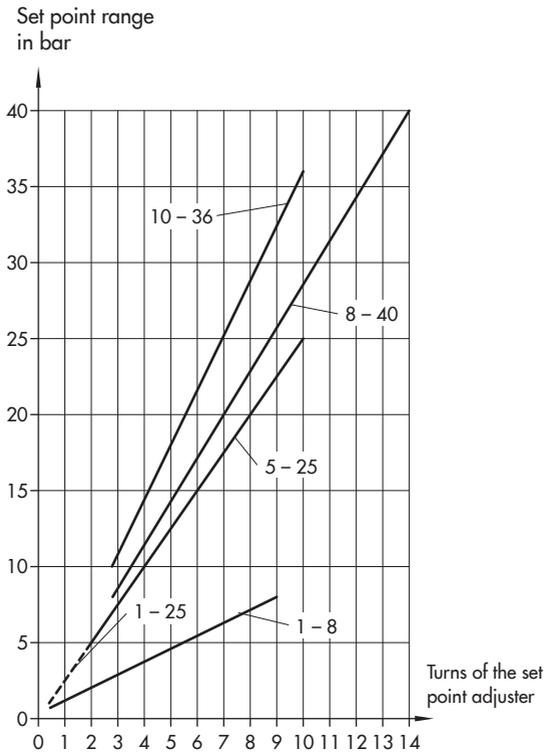


Fig. 7-1: Adjustment diagram

Table 7-1: Set point adjustment

Pressure rating	PN 40			PN 50				
	0.2 to 3 bar	1 to 25 bar	10 to 36 bar	0.2 to 2.5 bar	1 to 8 bar	5 to 25 bar	8 to 40 bar	
Set point range								
Set point adjusted at the factory (approx.)	2357-1	1 bar	12 bar	20 bar	1 bar	3 bar	12 bar	25 bar
	2357-2	1 bar	13 bar	21 bar	1 bar	4 bar	13 bar	26 bar
Set point change per turn	0.4 bar	2.5 bar	3.5 bar	0.4 bar	1 bar	2.5 bar	3.5 bar	

8 Malfunctions

8.1 Troubleshooting

8.1.1 Type 2357-1 as pressure reducing valve

Malfunction	Possible reasons	Recommended action
Pressure exceeds the adjusted set point.	Seat and plug are worn or leak.	<ul style="list-style-type: none"> → Clean the seat and plug. → Replace the damaged plug. → Contact SAMSON's After-sales Service.
	Foreign particles blocking the plug	<ul style="list-style-type: none"> → Remove foreign particles. → Replace damaged parts. → Contact SAMSON's After-sales Service.
	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. → Contact SAMSON's After-sales Service.
	Spring frozen due to condensate collecting in the spring housing.	<ul style="list-style-type: none"> → Allow the regulator to thaw or use a heat to melt the ice. → Contact SAMSON's After-sales Service.
Pressure drops below the adjusted set point.	Valve installed against the flow.	<ul style="list-style-type: none"> → Install the valve so that the direction of flow matches the direction indicated by the arrow on the body.
	Strainer blocked.	<ul style="list-style-type: none"> → Clean the strainer.
	A safety device has been triggered.	<ul style="list-style-type: none"> → Check plant. Unlock safety device (where necessary).
	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. → Contact SAMSON's After-sales Service.
	Foreign particles blocking the plug	<ul style="list-style-type: none"> → Remove foreign particles. → Replace damaged parts. → Contact SAMSON's After-sales Service.
Pressure fluctuates.	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. → Contact SAMSON's After-sales Service.
Jerky control response	Increased friction, e.g. due to foreign particles between seat and plug.	<ul style="list-style-type: none"> → Remove foreign particles. → Replace damaged parts. → Contact SAMSON's After-sales Service.

Malfunctions

Malfunction	Possible reasons	Recommended action
Loud flow-induced noise	High flow velocity, cavitation.	<ul style="list-style-type: none"> → Check the sizing. → Install larger regulator, if necessary.

8.1.2 Type 2357-1 as pressure build-up regulator

Malfunction	Possible reasons	Recommended action
Pressure exceeds the adjusted set point.	Seat and plug are worn or leak.	<ul style="list-style-type: none"> → Clean the seat and plug. → Replace the damaged plug. → Contact SAMSON's After-sales Service.
	Foreign particles blocking the plug	<ul style="list-style-type: none"> → Remove foreign particles. → Replace damaged parts. → Contact SAMSON's After-sales Service.
	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. → Contact SAMSON's After-sales Service.
	A safety device has been triggered.	<ul style="list-style-type: none"> → Check plant. Unlock safety device (where necessary).
	Spring frozen due to condensate collecting in the spring housing.	<ul style="list-style-type: none"> → Allow the regulator to thaw or use a heat to melt the ice. → Contact SAMSON's After-sales Service.
Pressure drops below the adjusted set point.	Valve installed against the flow.	<ul style="list-style-type: none"> → Install the valve so that the direction of flow matches the direction indicated by the arrow on the body.
	Strainer blocked.	<ul style="list-style-type: none"> → Clean the strainer.
	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. → Contact SAMSON's After-sales Service.
	Foreign particles blocking the plug	<ul style="list-style-type: none"> → Remove foreign particles. → Replace damaged parts. → Contact SAMSON's After-sales Service.
Pressure fluctuates.	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. → Contact SAMSON's After-sales Service.

Malfunction	Possible reasons	Recommended action
Jerky control response	Increased friction, e.g. due to foreign particles between seat and plug.	<ul style="list-style-type: none"> → Remove foreign particles. → Replace damaged parts. → Contact SAMSON's After-sales Service.
Loud flow-induced noise	High flow velocity, cavitation.	<ul style="list-style-type: none"> → Check the sizing. → Install larger regulator, if necessary.

8.1.3 Type 2357-2 as excess pressure valve

Malfunction	Possible reasons	Recommended action
Pressure exceeds the adjusted set point.	Seat and ball are worn or leak.	<ul style="list-style-type: none"> → Clean the seat and ball. → Contact SAMSON's After-sales Service.
	Foreign particles blocking the plug	<ul style="list-style-type: none"> → Remove foreign particles. → Replace damaged parts. → Contact SAMSON's After-sales Service.
	A safety device has been triggered.	<ul style="list-style-type: none"> → Check plant. Unlock safety device (where necessary).
	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. → Contact SAMSON's After-sales Service.
	Spring frozen due to condensate collecting in the spring housing.	<ul style="list-style-type: none"> → Allow the regulator to thaw or use a heat to melt the ice. → Contact SAMSON's After-sales Service.
Pressure drops below the adjusted set point.	Strainer blocked.	<ul style="list-style-type: none"> → Clean the strainer.
	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. → Contact SAMSON's After-sales Service.
	Foreign particles blocking the plug	<ul style="list-style-type: none"> → Remove foreign particles. → Replace damaged parts. → Contact SAMSON's After-sales Service.
Upstream pressure fluctuates	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. → Contact SAMSON's After-sales Service.

Malfunctions

Malfunction	Possible reasons	Recommended action
Jerky control response	Increased friction, e.g. due to foreign particles between seat and plug.	→ Remove foreign particles. → Replace damaged parts. → Contact SAMSON's After-sales Service.
Loud flow-induced noise	High flow velocity, cavitation.	→ Check the sizing. → Install larger regulator, if necessary.

i Note

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

The malfunctions listed in Chapter 8.1 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 to rectify the fault.

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.

Tip

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

8.2 Emergency action

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

SAMSON recommends removing the regulator from the pipeline before repairing it.

In the event of a regulator malfunction:

1. Close the shut-off valves upstream and downstream of the regulator to stop the process medium from flowing through the regulator.
2. Perform troubleshooting (see Chapter 8.1).
3. Rectify those malfunctions that can be remedied following the information given in this document. Contact SAMSON's After-sales Service in all other cases.

Putting the device back into operation after a malfunction

See the 'Start-up' chapter.

9 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 the 'Malfunctions' chapter.

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

SAMSON recommends removing the regulator from the pipeline before performing any maintenance or service work.

⚠ 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 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.*

⚠ NOTICE

Risk of regulator damage due to over- or under-torquing.

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 the 'Tightening torques' chapter in the Appendix).*

⚠ NOTICE

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

- ➔ *Only use tools approved by SAMSON (see the 'Tools' chapter in the Appendix).*

⚠ NOTICE

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

- ➔ *Only use lubricants approved by SAMSON (see the 'Lubricants' chapter in the Appendix).*

Note

The regulator was checked by SAMSON before it left the factory.

- 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.
-

Note

Check the filters in ports A and B for dirt and, if necessary, clean them.

Tip

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

Legend for Fig. 9-1

1	Body bonnet
2.1	Plug
3	Operating diaphragm
4.1	Gasket (bottom section of the body)
4.2	Gasket (top section of body)
5	Diaphragm plate
6	Ball
7	Spring plate
8	Set point springs
9	Bottom section of the housing
10	Set point adjuster
11	Lock nut
12	Non-return unit (optional)
13	Filter
16	Plug spring
17	Solder nipple with ball-type bushing (optional)

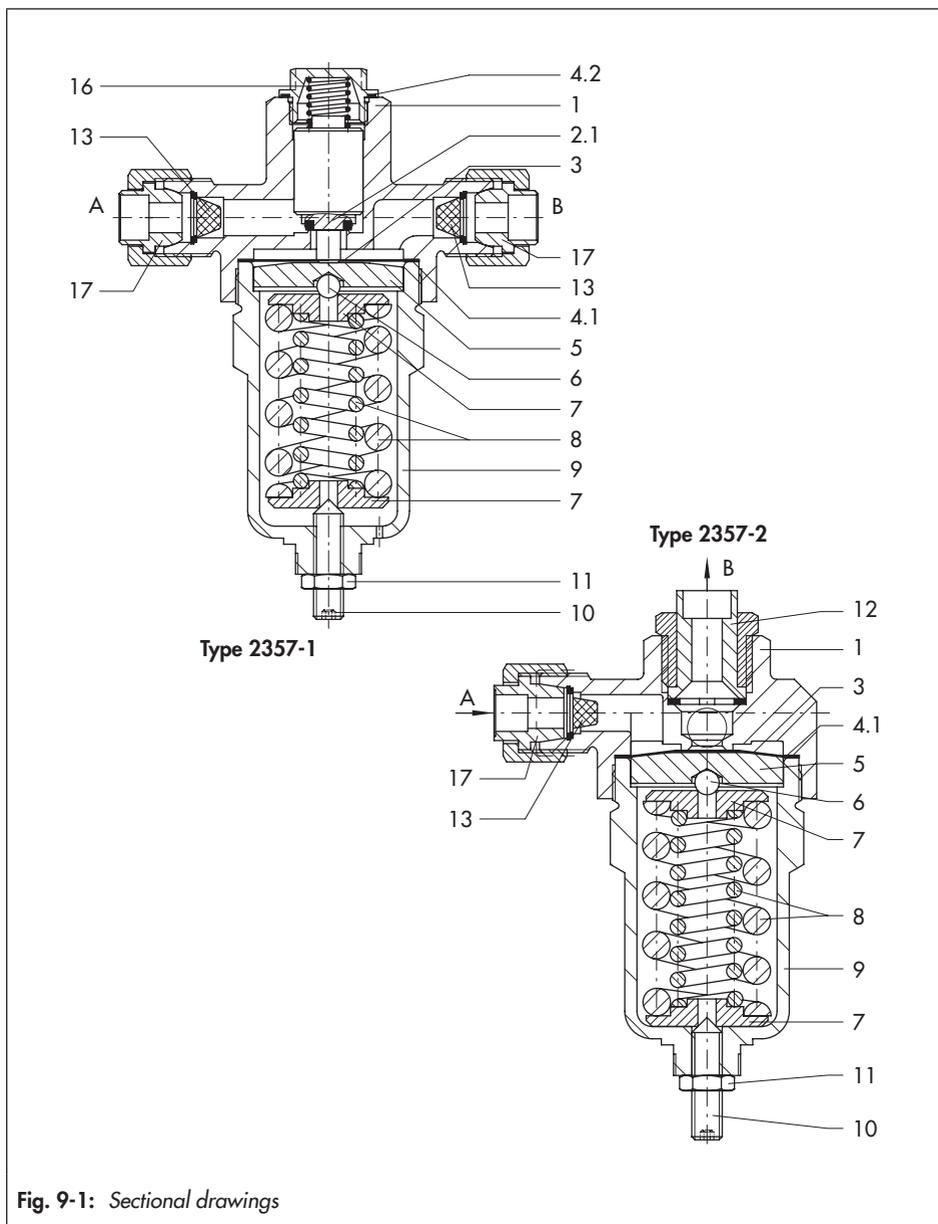


Fig. 9-1: Sectional drawings

9.1 Service work preparations

1. Lay out the necessary material and tools to have them ready for the service work.
2. Put the regulator out of operation (see the 'Decommissioning' chapter).



Tip

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

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

- Change set point range (see Chapter 9.4)
- Clean and exchange the seat and plug (see Chapter 9.5)

9.2 Installing the regulator after service work

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

9.3 Service work

- Before performing any service work, preparations must be made to the regulator (see Chapter 9.1).
- After all service work is completed, check the regulator before putting it back into operation (see section 'Testing the regulator' in the 'Installation' chapter).

9.4 Changing the set point range

The set point ranges adjusted in the factory can be changed by changing the set point springs (8) and operating diaphragm (3) (► T 2570).

Removing the set point springs

1. Put the regulator out of operation (see the 'Decommissioning' chapter).
2. Loosen lock nut (11) and relieve the tension from the set point springs (8) by turning the set point adjuster (10) counterclockwise (↺) as far as it will go.
3. Place the bottom section of the body (9) into a vise, but do not clamp it. Preferably use a box wrench (size 55 mm). Unscrew the body (1) using an open-end wrench (size 36 mm).
4. Remove the operating diaphragm (3), ball (6), diaphragm plate (5) and spring plate (7). Do not damage the operating diaphragm (3).
5. Remove the set point springs (8).

Mounting the set point springs

6. Insert the set point springs (8) for the required set point range.
7. Place spring plates (7), ball (6) and diaphragm plate (5) onto the set point springs (8) and insert into the bottom section of the body (9).
8. Place the required number of diaphragms onto the diaphragm plate (depending on the set point).
9. Renew the PTFE gasket (4.1) in the top section of the body (1).
10. Place on the top section of the body (1) and fasten it with the bottom section (9). Observe the specified tightening torques (see 'Tightening torques' in the Appendix).
11. Put the regulator back into operation (see the 'Start-up' chapter).

9.5 Cleaning and exchanging the seat and plug

Contact SAMSON's After-sales Service for more information on cleaning and exchanging the seat and plug.

9.6 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 Appendix and Data Sheet (▶ T 2570) for details on spare parts.

Lubricant

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

Tools

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

11 Removal

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

⚠ WARNING

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

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 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.*
-

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

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

11.1 Removing the regulator from the pipeline

1. Support the regulator to hold it in place when separated from the pipeline (see the 'Shipment and on-site transport' chapter).
2. Undo the pipe connections.
3. Remove the regulator from the pipeline (see the 'Shipment and on-site transport' chapter).

12 Repairs

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

! NOTICE

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

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

12.1 Returning devices to SAMSON

Defective devices can be returned to SAMSON for repair.

Proceed as follows to return devices:

4. Exceptions apply concerning some special device models
 - ▶ www.samsongroup.com > Service > After-sales Service.

5. Send an e-mail ▶ retouren@samsongroup.com to register the return shipment including the following information:
 - Type
 - Article no.
 - Material number
 - Original order
 - Completed Declaration on Contamination, which can be downloaded from our website at
 - ▶ www.samsongroup.com > Service > After-sales Service.

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

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

i Note

Further information on returned devices and how they are handled can be found at

- ▶ www.samsongroup.com > Service > After-sales Service.

13 Disposal



SAMSON is a producer registered at the following European institution ► <https://www.samsongroup.com/en/about-samson/environment-social-governance/material-compliance/waste-electrical-and-electronic-equipment-veee-and-its-safe-disposal/>.
WEEE reg. no.: DE 62194439

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

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

i Note

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

💡 Tip

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

14 Certificates

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

- EU declaration of conformity in compliance with Pressure Equipment Directive 2014/68/EU on page 14-2.
- EC-type examination according to Directive 2014/68/EC, see page 14-3.
- EU declaration of conformity in compliance with Machinery Directive 2006/42/EC for Type 2357-1 and Type 2357-2 Regulators on page 14-4.

EU DECLARATION OF CONFORMITY
TRANSLATION



Module D, No. / N° CE-0062-PED-D-SAM 001-22-DEU-Rev-B

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

Pressure Regulator PR 2357-1, -11, -3

the conformity with the following requirement.

Directive of the European Parliament and of the Council on 2014/68/EU of 15 May 2014
the harmonization of the laws of the Member States relating
of the making available on the market of pressure equipment.

EC Type Examination Certificate Module B Certificate no.
01 202 969/B-22-0002-01

Conformity assessment procedure applied Module D Certificate no.
CE-0062-PED-D-SAM-001-22-
DEU-Rev-B

The design is based on the procedures specified in the following standards:
DIN EN 12516-3 or ASME B16.24

The manufacturer's quality management system is monitored by the following notified body:

Bureau Veritas Services SAS, 4 place des Saisons, 92400 Courbevoie, France
Manufacturer: SAMSON AG, Weismüllerstraße 3, 60314 Frankfurt am Main, Germany

Frankfurt am Main, 06. September 2024



Norbert Tollas
Senior Vice President
Global Operations



Peter Scheermesser
Director
Product Maintenance & Engineered Products

Revision 06

Classification: Public · SAMSON AKTIENGESELLSCHAFT · Weismüllerstraße 3 · 60314 Frankfurt am Main, Germany Seite 1 von 1

Zertifikat

EU-Baumusterprüfung (Baumuster) nach Richtlinie 2014/68/EU

Zertifikat-Nr.: 01 202 969/B-22-0002-01

Name und Anschrift des Herstellers: Samson AG
Weismüllerstraße 3
60315 Frankfurt

Hiermit wird bescheinigt, dass das unten genannte EU-Baumuster die Anforderungen der Richtlinie 2014/68/EU erfüllt.

Geprüft nach Richtlinie 2014/68/EU:

**Modul B
EU-Baumusterprüfung (Baumuster)**

Prüfbericht-Nr.: 968/FSP 2402.02/24

Beschreibung des Baumusters: Sicherheitsdruckregler ohne Hilfsenergie als Ausrüstungsteil mit Sicherheitsfunktion

Typ: 2357-1, 2357-3, 2357-11

Fertigungsstätte/Lieferer: Samson AG
Weismüllerstraße 3
60315 Frankfurt

Gültig bis: 03/2032
Dieses Zertifikat verliert seine Gültigkeit, wenn das Produkt in irgendeiner Weise geändert oder modifiziert wird.

Das CE-Zeichen darf erst am Produkt angebracht und die Konformitätserklärung erst ausgestellt werden, wenn ein korrespondierendes Konformitätsbewertungsverfahren der Richtlinie 2014/68/EU bezogen auf die Produktion/das Produkt vollständig erfüllt ist.



Köln, 16.04.2024

Wolf Rückwart
Wolf Rückwart

TÜV Rheinland Industrie Service GmbH
Notifizierte Stelle für Druckgeräte, Kennnummer 0035
Am Grauen Stein, D-51105 Köln, DEUTSCHLAND

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Genau. Richtig.

EU DECLARATION OF CONFORMITY
TRANSLATION



Declaration of Conformity of Final Machinery

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

For the following products:

Type 2357-1 Pressure Reducing Valve

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

For product descriptions refer to:

- Type 2357-1 Pressure Reducing Valve: Mounting and Operating Instructions EB 2557

Referenced technical standards and/or specifications:

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

Comment:

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

Persons authorized to compile the technical file:

SAMSON AG, Weismüllerstraße 3, 60314 Frankfurt am Main, Germany
Frankfurt am Main, 22 August 2022

Norbert Tollas
Senior Vice President
Global Operations

Peter Scheermesser
Director
Product Maintenance and Engineered Products

Revision no. 00

EU DECLARATION OF CONFORMITY
TRANSLATION



Declaration of Conformity of Final Machinery

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

For the following products:

Type 2357-2 Excess Pressure Valve

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

For product descriptions refer to:

- Type 2357-2 Excess Pressure Valve: Mounting and Operating Instructions EB 2557

Referenced technical standards and/or specifications:

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

Comment:

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

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15 Appendix

15.1 Tightening torques

Table 15-1: *Tightening torque*

Component	Width across flats	Nominal size	Tightening torque in Nm
Body (1 with 8)	–	PN 40	180
	–	PN 50	250
Bottom section of the body (8)	A/F 55	–	
Top section of the body (1)	A/F 36	–	

15.2 Tools

SAMSON's After-sales Service can support you concerning tools approved by SAMSON.

15.3 Lubricants

SAMSON's After-sales Service can support you concerning lubricants and sealants approved by SAMSON.

15.4 Spare parts and accessories

Refer to ► T 2570 details on spare parts and accessories.

15.5 After-sales service

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

E-mail

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.

Required specifications

Please submit the following details:

- Type and nominal size of the regulator
- Model number or material number
- Upstream and downstream pressure
- Temperature and process medium
- Min. and max. flow rate in m³/h
- 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.)

EB 2557 EN



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