MOUNTING AND OPERATING INSTRUCTIONS

EB 8084 EN

Translation of original instructions

Series 3381 · Type 3381 Silencer

DIN and ANSI versions

Edition April 2021

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 (aftersalesservice@samsongroup.com).

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

Definition of signal words

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

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

NOTICE
Property damage message or malfunction

Note
Additional information

Tip
Recommended action

1 Safety instructions and measures

Intended use

The Type 3381 Silencer acts as a fixed restriction to reduce the sound pressure level. It is designed for mounting on SAMSON Series 240 and Series 250 Control Valves. The silencer is used to reduce the noise of liquids, gases and vapors as they flow through the valve and to reduce the velocity of compressible media (e.g. gases and vapors) at the valve outlet.

The silencer is designed to operate under exactly defined conditions (e.g. operating pressure, process medium, temperature). Therefore, operators must ensure that the silencer is only used in operating conditions that meet the specifications used for sizing at the ordering stage. In case operators intend to use the silencer in other applications or conditions than 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 silencer is not suitable for the following applications:

– Velocity reduction of incompressible media
– Use outside the limits defined during sizing and by the technical data

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

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

Qualifications of operating personnel

The silencer 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.

Welding operations must only be performed by personnel who has the necessary qualification to perform the applied welding procedure and handle the materials used.

Explosion-protected versions of this device must be operated only by personnel who has undergone special training or instructions or who is authorized to work on explosion-protected devices in hazardous areas.

The operating personnel must be specially trained for the correct and safe handling of oxygen when valves are used for oxygen service.

Personal protective equipment

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

- Protective clothing, gloves, eye protection and respiratory protection in applications with hot, cold and/or corrosive media
- Wear hearing protection when working near the valve
- Hard hat
- Safety harness when working at height
- Safety footwear, ESD (electrostatic discharge) footwear, if necessary

➔ Check with the plant operator for details on further protective equipment.

Revisions and other modifications

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

Safety features

The Type 3381 Silencer does not have any special safety features.

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 silencer by the process medium, the operating pressure, the signal pressure or by moving parts by taking appropriate precautions. Plant operators and operating personnel must observe all hazard statements, warning and caution notes in these mounting and operating instructions.

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

Responsibilities of the operator

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

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

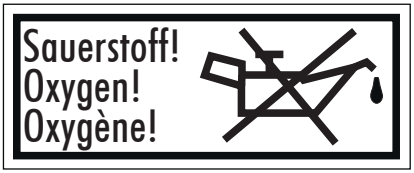
The silencers comply with the requirements of the European Pressure Equipment Directive 2014/68/EU. The 'Certificates' section contains this declaration of conformity, which includes information about the applied conformity assessment procedure.

Referenced documentation

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

- Mounting and operating instructions for the valve on which it is mounted
- For oxygen service: Manual ▶ H 01

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



- When a substance is used in the device, which is listed as being a substance of very high concern on the candidate list of the REACH regulation:
  Information on safe use of the part affected
  ▶ www.samsongroup.com > About SAMSON > Material Compliance > REACH

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

1.1 Notes on possible severe personal injury

⚠ DANGER

Risk of bursting in pressure equipment.

Valves and pipelines are pressure equipment. Impermissible pressure or improper opening can lead to valve components bursting.

➔ Observe the maximum permissible pressure for valve and plant.

➔ Before starting any work on the control valve, depressurize all plant sections affected as well as the valve.

➔ Drain the process medium from all the plant sections concerned as well as the valve.

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

Special versions of the silencer 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, valve 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.

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

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

➔ If possible, drain the process medium from all the plant sections affected and the silencer.

➔ Wear protective clothing, safety gloves, respiratory protection and eye protection.

Exposure to hazardous substances poses a serious risk to health.

Certain lubricants and cleaning agents are classified as hazardous substances. These substances have a special label and a material safety data sheet (MSDS) issued by the manufacturer.

➔ Make sure that an MSDS is available for any hazardous substance used. If necessary, contact the manufacturer to obtain an MSDS.

➔ Inform yourself about the hazardous substances and their correct handling.

1.3 Notes on possible property damage

NOTICE

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

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

➔ Observe the usual tightening torques for the corresponding bolt diameters.

NOTICE

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

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

➔ Only use lubricants approved by SAMSON.

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

➔ If necessary (e.g. for oxygen service), keep the silencer and the tools used free from solvents and grease.

➔ Make sure that only suitable lubricants are used.

2 Markings on the device

2.1 Nameplate

Depending on the version, the Type 3381 Silencer has a single or a two-piece nameplate:

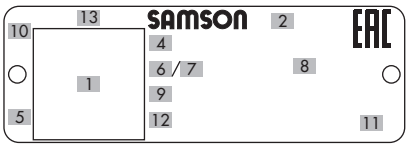


Fig. 2-1: *Single nameplate on the valve*

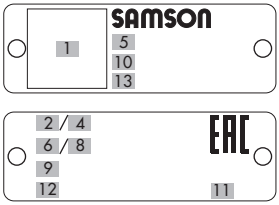


Fig. 2-2: *Two-piece nameplate · Inscriptions*

Item	Inscription meaning
1	Data Matrix code
2	Type designation
4	Material
5	Month and year of manufacture
6	Nominal size at inlet: DIN: **DN** · ANSI: **NPS** · JIS: **DN**
7	Nominal size at outlet: DIN: **DN** · ANSI: **NPS** · JIS: **DN**
8	Pressure rating: DIN: **PN** · ANSI: **CL** · JIS: **K**
9	Order number/item
10	Country of origin
11	CE marking
12	ID of the notified body
	PED: Pressure Equipment Directive
	G1/G2: gases and vapors Fluid group 1 = hazardous Fluid group 2 = other
	L1: liquids Fluid group 1 = hazardous Fluid group 2 = other
	I/II/III: Category 1 to 3
13	Serial number

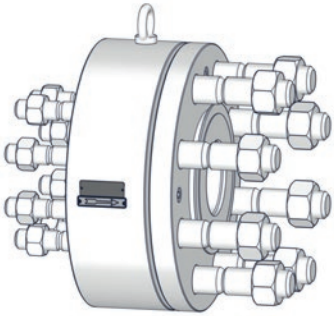


Fig. 2-3: *Nameplate and directional arrow on the silencer*

2.2 Direction of flow

The directional arrow on the Type 3381 Silencer indicates the direction of flow (2).

3 Design and principle of operation

3.1 Design

Type 3381-1:

– Single attenuation plates mounted between the valve or a pipe expander and the pipe flange (see Fig. 3-1).

Type 3381-R:

– Reduced construction using less material: single attenuation plates with reduced diameter and possibly reduced thickness, clamped between the valve or a pipe expander and the pipe flange (see Fig. 3-2).

Type 3381-3-X:

– Silencer with two to five attenuation plates located in one housing. An additional pipe expander is not required (see Fig. 3-3).

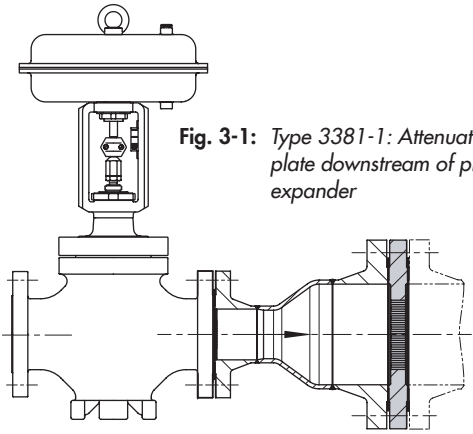


Fig. 3-1: *Type 3381-1: Attenuation plate downstream of pipe expander*

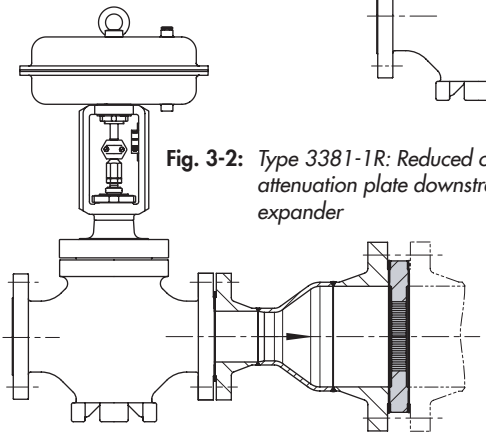


Fig. 3-2: *Type 3381-1R: Reduced construction with attenuation plate downstream of the pipe expander*

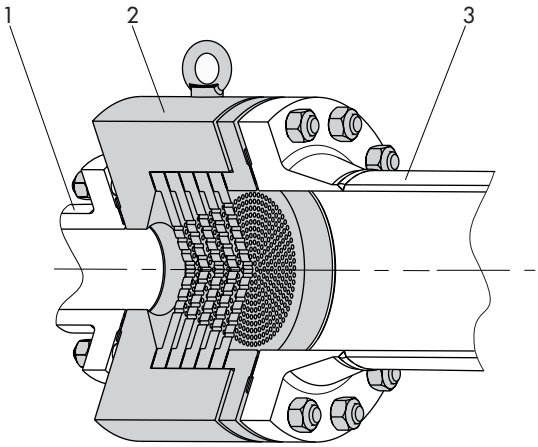
– A graphite gasket with metal core (1.4301) is used in the standard version as a seal between the housing and clamping flange.

Type 3381-4-X:

– System with two to five attenuation plates installed as a wafer-type version. Usually downstream of a pipe expander (see Fig. 3-4).

Note

Additional installation examples of various versions can be found in the Data Sheet ▶ T 8084.



Legend

1 Valve outlet
2 Silencer
3 Pipeline
4 Pipe expander

Fig. 3-3: *Type 3381-3-5: Five attenuation plates in a housing (top)*

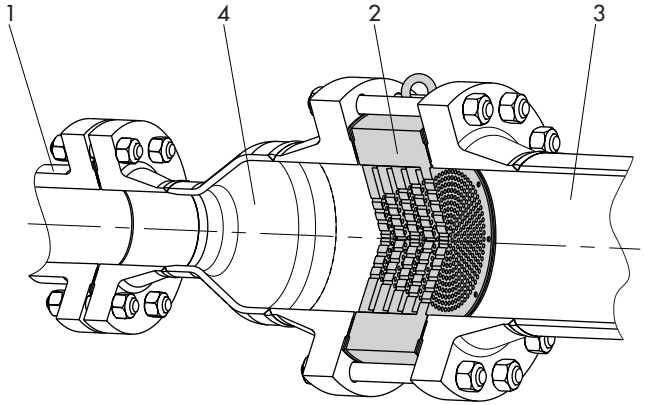


Fig. 3-4: *Type 3381-4-5: Five attenuation plates clamped between the pipe expander and pipeline (wafer-type version) (right)*

3.2 Principle of operation

The Type 3381 Silencer provides noise attenuation by acting as a fixed restriction. The silencer raises the pressure of the medium flow at the valve outlet and reduces the pressure downstream of the silencer to the required downstream pressure p2. As a result, the sound pressure level is reduced. In applications using compressible media, it additionally lowers the flow velocity at the valve outlet.

The pressure reduction per attenuation plate (Δp) depends on the flow rate and the prevailing operating temperature. Generally, the pressure reduction is between 1 and 7 bar.

A five-stage silencer (Type 3381-3-5) normally provides a maximum pressure drop of 35 bar.

3.3 Technical data

Noise emissions

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

Dimensions and weights

Details on dimensions and weights are available on request.

i ***Note***

More information is available in Data Sheet ▶ T 8084.

Table 3-1: *Technical data*

Type 3381-1, Type 3381-1R, Type 3381-3-X or Type 3381-4-X Silencer				
Version according to	**DIN**		**ANSI**	
Material [1]	Forged steel P250GH · 1.0460	Forged stainless steel 1.4401	Forged steel A105	Forged stainless steel A182 F316
Nominal size	DN 40 to 800		NPS 1½ to 32	
Pressure rating [2] [3]	PN 10 to 400		Class 150 to 2500	
Type of connection	All DIN EN versions		All ANSI versions	
Temperature range [4]	–50 to +400 °C		–58 to +750 °F	

1) Other materials on request
2) Only nominal sizes possible according to the standard
3) Varying pressure ratings for the inlet and outlet cannot be implemented
4) Other temperature ranges on request

Table 3-2: *Possible wafer-type versions for Type 3381-1R as well as for combinations of Type 3381-1 and Type 3381-1R*

Note:

– Wafer-type version only for standard materials according to Table 3-1

– Only nominal sizes possible according to the standard and depending on the pressure rating

DIN EN versions		ANSI versions	
Nominal size	**Pressure rating (min.)**	**Nominal size**	**Pressure rating (min.)**
DN 200	PN 400 and higher	NPS 8	Class 2500 and higher
DN 250	PN 250 and higher	NPS 10	Class 1500 and higher
DN 300	PN 100 and higher	NPS 12	Class 600 and higher
DN 350	PN 63 and higher	–	–
DN 450	PN 40 and higher	NPS 16 and larger	All pressure ratings
DN 600 and larger	All pressure ratings	–	–

4 Shipment and on-site transport

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

4.1 Accepting the delivered goods

After receiving the shipment, proceed as follows:

1. Check the scope of delivery. Check that the specifications on the silencer match the specifications in the delivery note. See the 'Markings on the device' section for the inscriptions on the device.
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, if required (see transport documents).

4.2 Removing the packaging from the silencer

Observe the following sequence:

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

➔ Leave the silencer 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 silencer

⚠ DANGER

Danger due to suspended loads falling.

➔ *Stay clear of suspended or moving loads.*

➔ *Close off and secure the transport paths.*

⚠ WARNING

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

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

⚠ WARNING

Risk of personal injury due to incorrect attachment of slings and their slipping as a result.

➔ *Use the lifting eyelet/eyebolt to attach the sling to the silencer.*

➔ *Use a hook with safety latch (see Fig. 4-1) to secure the slings from slipping off the hook during lifting and transporting.*

⚠ WARNING

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

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

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

Tip

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

4.3.1 Transporting the silencer

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

➔ Leave the silencer in its transport container or on the pallet to transport it.

➔ Observe the transport instructions.

Transport instructions

– Protect the silencer against external influences (e.g. impact).

– Do not damage the corrosion protection (paint, surface coatings). Repair any damage immediately.

– Protect the silencer against moisture and dirt.

– The permissible transportation temperature of standard silencers is –20 to +65 °C.

Note

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

4.3.2 Lifting the silencer

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

Lifting instructions

- Use a hook with safety latch (see Fig. 4-1) to secure the slings from slipping off the hook during lifting and transporting.
- Secure slings against slipping.
- Make sure the slings can be removed after installation.
- Prevent the load from tilting or tipping.
- Do not leave loads suspended when interrupting work for longer periods of time.

a) Type 3381, Type 3381-1R, Type 3381-4-X and Type 3381-3-X without valve

1. Attach a sling to the lifting eyelet/eyebolt on the silencer and to the rigging equipment (e.g. hook) of the crane or forklift (see Fig. 4-1).
2. Carefully lift the silencer. Check whether the lifting equipment and accessories can bear the weight.
3. Move the silencer at an even pace to the site of installation.
4. Install the silencer into the pipeline between the outlet flange of the valve body or the flange of the pipe expander and the pipeline flange (see the 'Installation' section).
5. After installation in the pipeline, check whether the flanges are bolted tight or the welding joints hold and the valve including the silencer in the pipeline holds.
6. Remove slings.

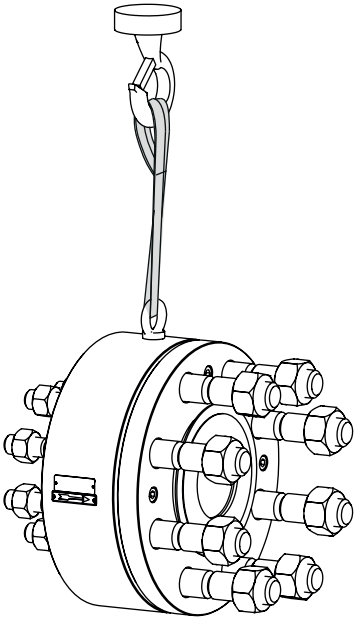


Fig. 4-1: *Type 3381-3-X without valve*

b) Type 3381-3-X with valve

See Fig. 4-2

NOTICE

Incorrect lifting will damage the valve.

The valve bonnet (yoke) may become damaged through the introduction of a bending moment.

➔ *Attach the slings in such a way that the mid-axis of the valve and the mounted silencer is always in the horizontal position and that the axis of the plug/actuator stem remains in the vertical position during lifting.*

NOTICE

Incorrect mounting before lifting will damage the valve.

➔ *The valve and silencer must be bolted together with the full tightening torque as specified before lifting (see the 'Installation' section).*

The Type 3381-3-X Silencer is bolted to the control valve before they are both installed into the pipeline (see the 'Installation' section).

1. Attach one sling to the flange on the valve body and to the rigging equipment (e.g. hook) of the crane or forklift.
2. Attach a sling to the lifting eyelet/eyebolt on the silencer and to the rigging equipment (e.g. hook) of the crane or forklift.
3. For actuator versions with lifting eyelet, attach an additional sling to the lifting eyelet of the actuator and to the rigging equipment of the crane or forklift.

   NOTICE! This sling must not bear any load. It only protects it from tilting while being lifted. Before lifting the control valve, tighten the sling.
4. Carefully lift the control valve with mounted silencer. Make sure that the mid-axis of the valve and the mounted silencer is always in the horizontal position and that the axis of the plug/actuator stem is in the vertical position during lifting.

   NOTICE! The valve bonnet (yoke) may become damaged through the introduction of a bending moment.

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

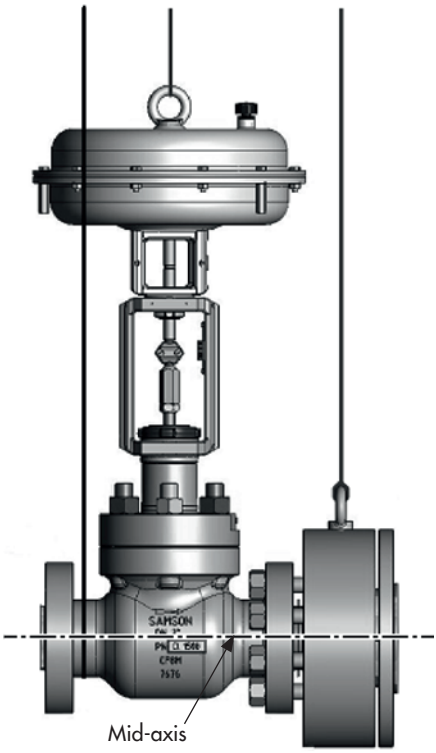


Fig. 4-2: *Type 3381-3-X with valve*

4.4 Storing the silencer

NOTICE

Risk of silencer 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 regularly checking the silencer and the prevailing storage conditions during long storage periods.

Storage instructions

– Protect the silencer against external influences (e.g. impact).

– Secure the silencer in the stored position against slipping or tipping over.

– Do not damage the corrosion protection (paint, surface coatings). Repair any damage immediately.

– Protect the silencer 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 silencers is –20 to +65 °C. Contact our after-sales service for the storage temperatures of other valve versions.

– Do not place any objects on the silencer.

Tip

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

5 Installation

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

The following documents are also required for mounting the silencer:

– Mounting and operating instructions for the associated valve

5.1 Installation conditions

5.1.1 Depending on the version

Type 3381

The single attenuation plate is mounted between the valve or a pipe expander and the pipe flange using suitable gaskets.

Type 3381-1R

The single attenuation plate with reduced diameter and possibly reduced thickness is clamped between the valve or a pipe expander and the pipe flange using suitable gaskets.

Type 3381-3-X

Two to five attenuation plates are installed one after the other in a housing. The nominal sizes of the inlet and outlet can vary: the nominal inlet size of the housing corresponds to the nominal valve size. The nominal outlet size corresponds to the downstream nominal pipe size. A pipe expander is already integrated into the housing.

The Type 3381-3-X Silencer is bolted to the control valve using a suitable gasket before they are both installed into the pipeline using suitable gaskets.

Type 3381-4-X

Two to five attenuation plates are clamped between the valve outlet or pipe expander and the pipeline (wafer-type version) using suitable gaskets.

A pipe expander must be installed if the nominal size of the attenuation plates is larger than that of the valve.

5.1.2 Support and suspension

i ***Note***

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

5.1.3 Use of the Type 3381 Silencer together with self-operated regulators

Excess pressure valves

Excess pressure valves regulate the upstream pressure. Therefore, the excess pressure valve can be installed and the control lines connected as normal.

Pressure reducing valves and differential pressure regulators

If a Type 3381 Silencer is installed downstream of a pressure reducing valve or differential pressure regulator, the control lines cannot be connected to the pipeline upstream of the silencer. As a result, control line kits cannot be used for pressure reducing valves in such cases.

The high pressure can be tapped at the valve body in differential pressure regulators in which the valve opens or closes as the differential pressure rises and are installed in the return flow pipe.

Both control lines must be connected externally in differential pressure regulators in which the valve closes as the differential pressure rises and are installed in the flow pipe.

Fig. 5-1 to Fig. 5-4 show the resulting installation situations.

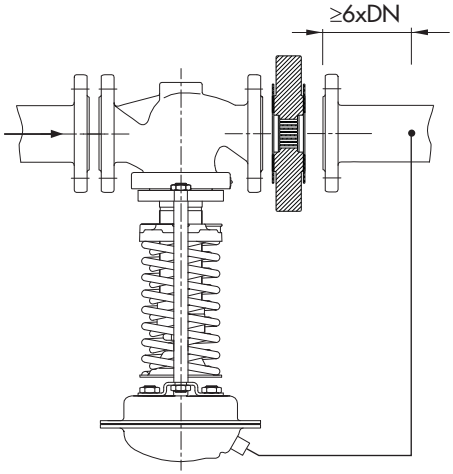


Fig. 5-1: *Pressure reducing valve*

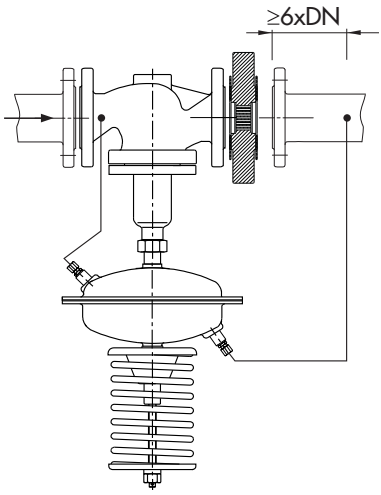


Fig. 5-2: *Differential pressure regulator (opening)*

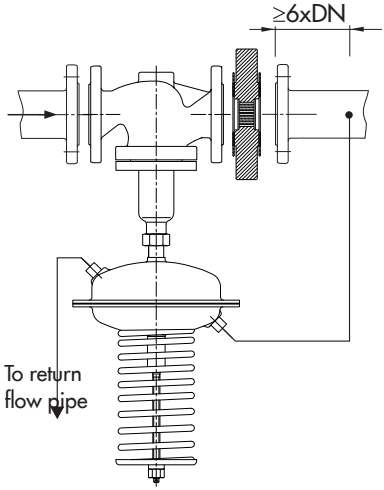


Fig. 5-3: *Differential pressure regulator (closing) in the flow pipe*

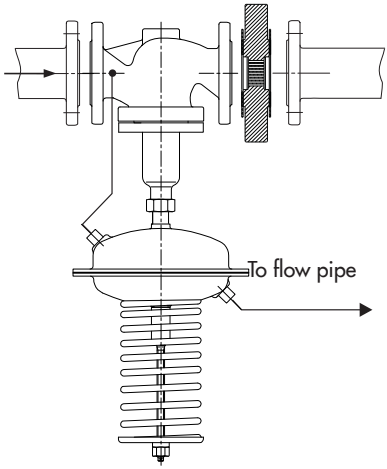


Fig. 5-4: *Differential pressure regulator (closing) in the return flow pipe*

5.2 Preparation for installation

Before installation, make sure the following conditions are met:

– Valve and silencer are clean.
– The valve and silencer data (type designation, nominal size, material, pressure rating and temperature range) match the plant conditions (size and pressure rating of the pipeline, medium temperature etc.).

Proceed as follows:

➔ Lay out the necessary material to have them ready during installation work. This includes:
  – Suitable gaskets (not included in the scope of delivery of the silencer)
  – Pipe expander, if applicable (not included in the scope of delivery of the silencer)
  – **Type 3381-1, Type 3381-1R and Type 3381-4-X:**
    Nuts and bolts for flanged joints (not included in the scope of delivery of the silencer)
  – **Type 3381-3-X:**
    Studs and nuts for flanged joint on the silencer (included in the scope of delivery of the silencer)
    Nuts and bolts for flanged joint on the valve (not included in the scope of delivery of the silencer)

5.3 Mounting the silencer

NOTICE

Risk of damage to components due to work being carried out by personnel not qualified for such tasks.

The plant operator or specialist company performing the welding is responsible for the selection of the welding procedure and the actual welding operations on the valve and silencer. This also applies to any required heat treatment to be performed.

➔ *Only allow qualified welding personnel to carry out welding operations.*

NOTICE

Premature wear and leakage due to insufficient support or suspension.

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

NOTICE

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

Observe the specified torques when tightening bolted joints.

➔ *Observe the usual tightening torques for the corresponding bolt diameters.*

a) Type 3381-1, Type 3381-1R and Type 3381-4-X

See Fig. 5-5

1. Close the shut-off valves in the pipeline at the inlet and outlet of the plant section while the valve is being installed.
2. Prepare the relevant section of the pipeline for installing the components.
3. Remove any protective caps before installing the components.
4. Lift the silencer using suitable lifting equipment to the site of installation (see information under 'Lifting the silencer' in the 'Shipment and on-site transport' section). Pay attention to the directions of flow for the silencer and valve before lifting. Both directional arrows must point in the same direction.
5. Use the correct flange gaskets.
6. Install the valve and silencer free of stress. Observe specified tightening torques.
   Versions with welding ends: weld the valve and silencer free of stress into the pipeline.
7. Attach a support or suspension on the valve, if necessary.

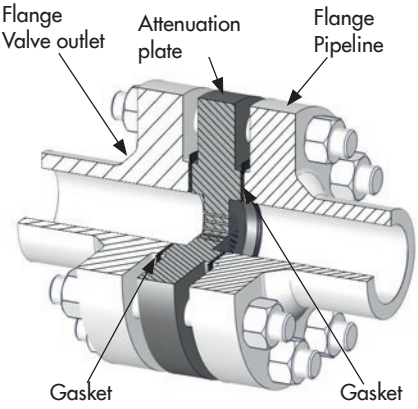


Fig. 5-5: *Valve flange and pipe flange, with Type 3381-1 Silencer inbetween*

b) Type 3381-3-X

See Fig. 5-6

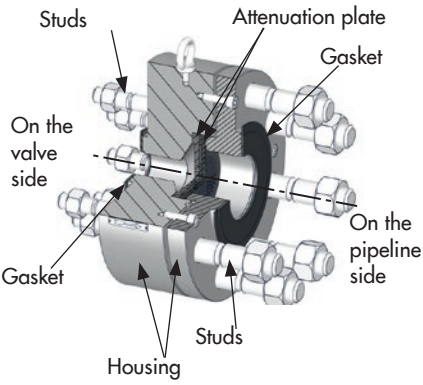


Fig. 5-6: *Type 3381-3-2 Silencer before installation*

Removing the studs

➔ Before mounting the silencer onto the valve and installing it into the pipeline,

remove the studs inserted in the delivered state. To proceed, lock the nut on the stud with another nut. Use this nut to loosen the stud. Unthread the stud.

Bolting the valve and silencer together

See Fig. 5-7 to Fig. 5-9

1. Lift the silencer using suitable lifting equipment onto the valve (see information under 'Lifting the silencer' in the 'Shipment and on-site transport' section). Pay attention to the directions of flow for the silencer and valve before lifting. Both directional arrows must point in the same direction.
2. Use the correct flange gasket.
3. Use the supplied studs and nuts to bolt the silencer and valve together.
   The number of studs and nuts varies depending on the number of holes in the valve and silencer flanges.
   Observe the usual tightening torque for the corresponding bolt diameters. Apply the full tightening torque gradually in a crisscross pattern.

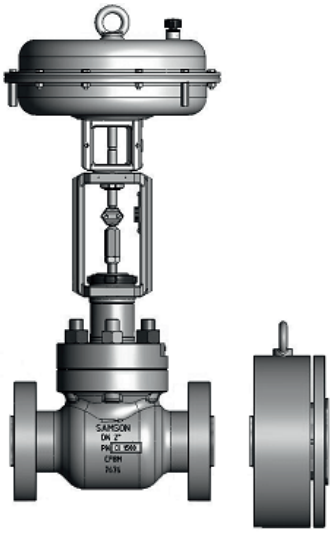


Fig. 5-7: *Valve and silencer not mounted together, lifting eyelet on top*

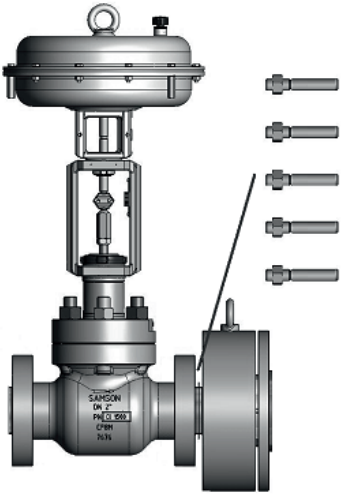


Fig. 5-8: *Valve, silencer, studs and nuts*

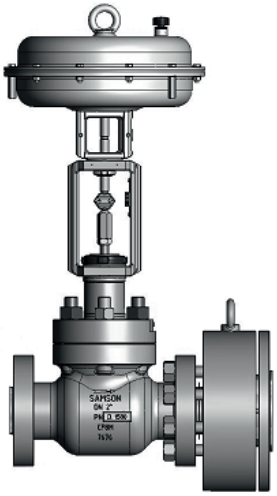


Fig. 5-9: *Valve and silencer bolted together*

Installing the valve including silencer in the pipeline

See Fig. 5-10 to Fig. 5-15

NOTICE

Incorrect mounting before lifting will damage the valve.

➔ *The valve and silencer must be bolted together with the full tightening torque as specified before lifting.*

NOTICE

Incorrect lifting will damage the valve.

The valve bonnet (yoke) may become damaged through the introduction of a bending moment.

➔ Attach the slings in such a way that the mid-axis of the valve and the mounted silencer is always in the horizontal position and that the axis of the plug/actuator stem remains in the vertical position during lifting.

1. Close the shut-off valves in the pipeline at the inlet and outlet of the plant section while the valve is being installed.
2. Prepare the relevant section of the pipeline for installing the valve and silencer.
3. Remove any protective caps before installing the components.
4. Lift the valve including silencer using suitable lifting equipment to the site of installation (see information under 'Lifting the silencer' in the 'Shipment and on-site transport' section). Observe the flow direction through the valve. The arrow on the valve indicates the direction of flow.
5. Use the correct flange gaskets.
6. Bolt the silencer side to the pipeline free of stress using the supplied studs and nuts. Observe the usual tightening torque for the corresponding bolt diameters.
7. Bolt the valve side to the pipeline free of stress using its nuts and bolts. Observe specified tightening torques.
8. Attach a support or suspension on the valve, if necessary.

Fig. 5-10: *Pipe flanges*

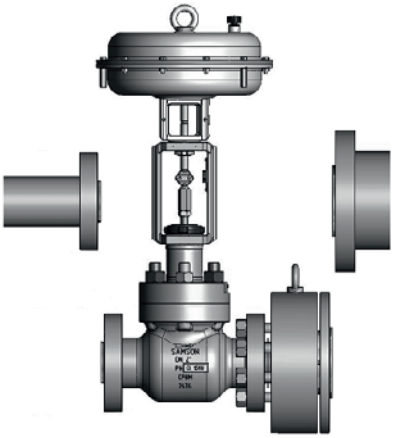


Fig. 5-11: *Position valve and silencer properly before lifting*

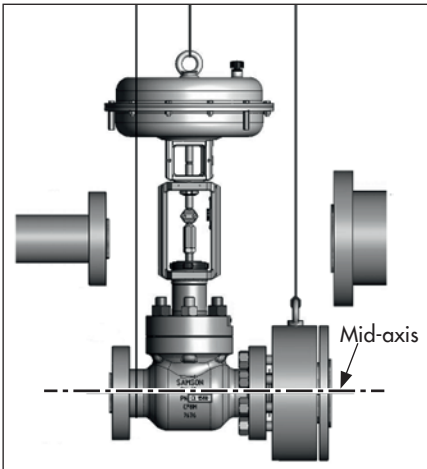


Fig. 5-12: *Lifting*

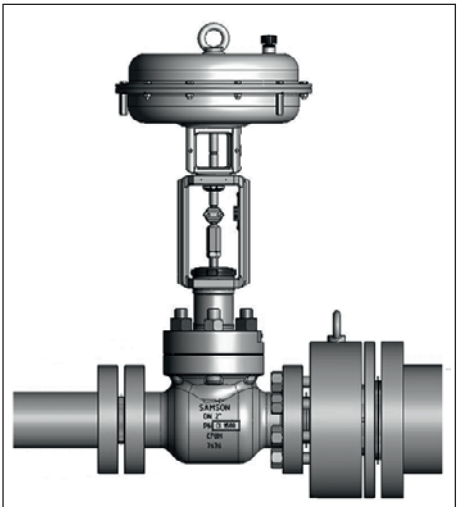


Fig. 5-13: *Valve and silencer in the pipeline, ready to be bolted*

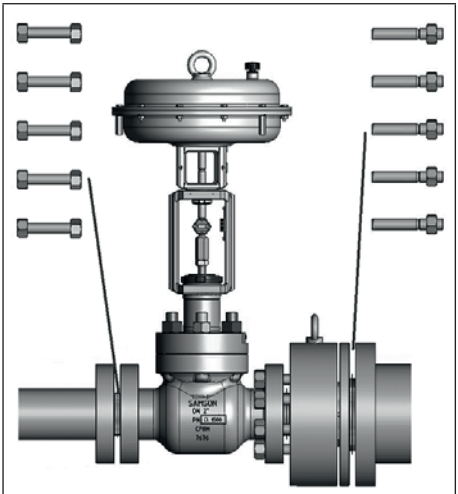


Fig. 5-14: *Valve and silencer in the pipeline*

i *Note*

Studs and nuts: number of studs and nuts varies depending on the number of holes in the valve's inlet flange and the silencer's outlet flange.

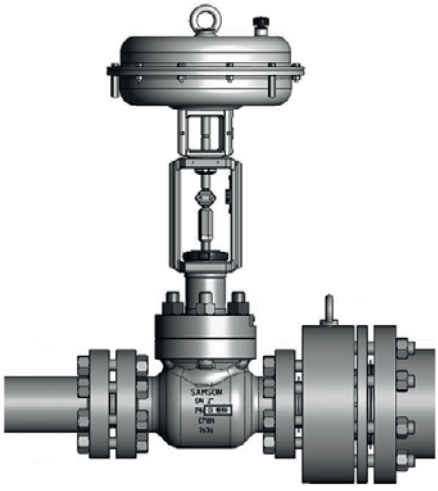


Fig. 5-15: *Valve and silencer installed in the pipeline*

5.4 Testing the installed components

See associated control valve documentation for the tests to be performed before start-up.

6 Start-up, operation, decommissioning, servicing

Details on start-up, decommissioning, operation and servicing are described in the associated valve documentation.

7 Removal

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

⚠ WARNING

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

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

➔ *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 silencer.

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

➔ *Wear protective clothing, safety gloves, respiratory protection and eye protection.*

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

– The control valve is put out of operation (see associated control valve documentation).

7.1 Removing the silencer from the pipeline

a) Version with flanges

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

b) Version with welding ends

1. Support the silencer to hold it in place when separated from the pipeline (see the 'Shipment and on-site transport' section).
2. Cut the pipeline in front of the weld seam.
3. Remove the silencer from the pipeline (see the 'Shipment and on-site transport' section).

8 Repairs

NOTICE

Risk of damage due to incorrect service or repair work.

➔ *Do not perform any repair work on your own.*

➔ *Contact SAMSON's After-sales Service for repair work.*

8.1 Returning devices to SAMSON

Defective devices can be returned to SAMSON for repair.

Proceed as follows to return devices:

1. Exceptions apply concerning some special device models
   ▶ *www.samsongroup.com > Service & Support > After-sales Service.*
2. Send an e-mail
   ▶ retouren@samsongroup.com to register the return shipment including the following information:
   – Type
   – Article no.
   – Configuration ID
   – Original order
   – Completed Declaration on Contamination, which can be downloaded from our website at
   ▶ *www.samsongroup.com > Service & Support > After-sales Service.*

   After checking your registration, we will send you a return merchandise authorization (RMA).
3. Attach the RMA (together with the Declaration on Decontamination) to the outside of your shipment so that the documents are clearly visible.
4. Send the shipment to the address given on the RMA.

Note

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

9 Disposal

➔ Observe local, national and international refuse regulations.

➔ Do not dispose of components, lubricants and hazardous substances together with your household waste.

10 Certificates

The declaration is provided on the next page:

– Declaration of conformity in compliance with Pressure Equipment Directive 2014/68/EU

The certificate shown was up to date at the time of publishing. Other optional or updated certificates are available on request.

EU DECLARATION OF CONFORMITY
TRANSLATION

Module H / N° CE-0062-PED-H-SAM 001-20-DEU-rev-A

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

Devices	Series	Type	Version
Globe valve	240	3241	DIN, body of cast iron from DN 150, body of spheroidal-graphite iron, from DN 100, fluids G2, L1, L2[1)]
			DIN/ANSI, body of steel, etc., all fluids
Three-way valve	240	3244	DIN, body of cast iron from DN 150, body of spheroidal-graphite iron, from DN 100, fluids G2, L1, L2[1)]
			DIN/ANSI, body of steel, etc., all fluids
Cryogenic valve	240	3248	DIN/ANSI, all fluids
Globe valve	250	3251	DIN/ANSI, all fluids
Globe valve	250	3251-E	DIN/ANSI, all fluids
Three-way valve	250	3253	DIN/ANSI, body of steel, etc., all fluids
Globe valve	250	3254	DIN/ANSI, all fluids
Angle valve	250	3256	DIN/ANSI, all fluids
Split-body valve	250	3258	DIN, all fluids
Angle valve (IG standards)	250	3259	DIN, all fluids
Steam-converting valve	280	3281	DIN/ANSI, all fluids
		3284	DIN/ANSI, all fluids
		3286	DIN/ANSI, all fluids
		3288	DIN, all fluids
Globe valve	V2001	3321	DIN, body of steel, etc., all fluids
			ANSI, all fluids
Three-way valve	V2001	3323	DIN, body of steel, etc., all fluids
			ANSI, all fluids
Angle seat valve	—	3353	DIN, body of steel, etc., all fluids
Silencer	3381	3381-1	DIN/ANSI, single attenuation plate with welding ends, all fluids
		3381-3	DIN/ANSI, all fluids
		3381-4	DIN/ANSI, single attenuation plate multi-stage with welding ends, all fluids
Globe valve	240	3241	ANSI, body of cast iron, Class 125, from NPS 5, fluids G2, L1, L2[1)]
Cryogenic valve	240	3248	DIN/ANSI, all fluids
Three-way valve	250	3253	DIN, body of cast iron from DN200 PN16, fluids G2, L1, L2[1)]
Globe valve	290	3291	ANSI, all fluids
Angle valve	290	3296	ANSI, all fluids
Globe valve	590	3591	ANSI, all fluids
Angle valve	590	3596	ANSI, all fluids
Cryogenic valve	590	3598	ANSI, NPS 3 to NPS 8, Class 900, all fluids
Control valve	—	3595	ANSI, all fluids

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

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

Directive of the European Parliament and of the Council on the harmonization of the laws of the Member States relating to the making available on the market of pressure equipment	**2014/68/EU**	**of 15 May 2014**
Applied conformity assessment procedure for fluids according to Article 4(1)	**Module H**	**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
Technical standards applied: DIN EN12516-2, DIN EN12516-3, ASME B16.34

Manufacturer: SAMSON AG, Weismuellerstrasse 3, 60314 Frankfurt am Main, Germany
Frankfurt am Main, 7 April 2021

Dr. Andreas Widl
Chief Executive Officer (CEO)

Dr. Thomas Steckenreiter
Chief Technology Officer (CTO)

Revision 08

11 Annex

11.1 Tightening torques, lubricants and tools

See associated control valve documentation.

11.2 After-sales service

Contact our after-sales service for support concerning service or repair work or when malfunctions or defects arise.

E-mail address

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

Addresses of SAMSON AG and its subsidiaries

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

Required specifications

Please submit the following details:

- Order number and position number in the order
- Type, model number, nominal size and version of the valve and silencer
- Pressure and temperature of the process medium
- Flow rate in m^3/h
- Direction of flow
- Bench range of the actuator (e.g. 0.2 to 1 bar)
- Is a strainer installed?
- Installation drawing

EB 8084 EN

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