MOUNTING AND OPERATING INSTRUCTIONS

EB 5866 EN

Translation of original instructions

Type 3222/5827

Type 3222/5857
Type 3222/5757-3
Type 3222/5757-7

Type 3222/2780-1

Type 3222/2780-2
With Type 3760 Positioner

Type 3222/... Electric and Pneumatic Control Valves

Edition June 2024

Note on these mounting and operating instructions

These mounting and operating instructions (EB) assist you in mounting and operating the device safely. The instructions are binding for handling SAMSON devices. The images shown in this document 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 additional questions not related to the contents of this document, 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:
▶ https://www.samsongroup.com/en/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 SAMSON Type 3222 Valve is designed for use in temperature control circuits in HVAC plants (e.g. for DHW heating). The valve is primarily combined with the following SAMSON actuators:

- As an electric control valve: Type 3222/5857, Type 3222/5827, Type 3222/5757-3, Type 3222/5757-7, Type 3222/5724-3, Type 3222/5724-8, Type 3222/5725-3 and Type 3222/5725-8
- As a pneumatic control valve: Type 3222/2780

The valve with its actuator is designed to operate under exactly defined conditions (e.g. operating pressure, process medium, temperature). Therefore, operators must ensure that the control valve is only used in operating conditions that meet the specifications used for sizing the valve at the ordering stage. In case operators intend to use the control valve in applications or conditions other than those specified, contact SAMSON. SAMSON does not assume any liability for damage resulting from the failure to use the device for its intended purpose or for damage caused by external forces or any other external factors.

⇨ Refer to the technical data and nameplate for limits and fields of application as well as possible uses.

Reasonably foreseeable misuse

The control valve is not suitable for the following applications:

- Use outside the limits defined during sizing and by the technical data
- Type 3222/2780 Control Valve: Use outside the limits defined by the valve accessories connected to the control valve

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

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

Qualifications of operating personnel

The control valve must be mounted, started up, serviced and repaired by fully trained and qualified personnel only; the accepted industry codes and practices 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 are to be performed only by personnel who has the necessary qualification to perform the applied welding procedure and handle the materials used.

Work on electrical installations is to be performed only by certified electricians and in compliance with all safety requirements.

Explosion-protected versions of this device are to 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.

Personal protective equipment

SAMSON recommends wearing the following protective equipment:

- Protective clothing, safety gloves and eye protection in applications with hot or cold media

⇨ 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 fail-safe position of the control valve upon air supply or control signal failure depends on the actuator used (see associated actuator documentation). When the valve is combined with one of the following SAMSON pneumatic actuators, the control valve moves to a certain fail-safe position upon supply air or control signal failure (see Chapter 3.1). The fail-safe action of the actuator is the same as its direction of action and is specified on the nameplate of SAMSON actuators.

SAMSON pneumatic actuators with fail-safe action:

- Type 2780

SAMSON electric actuators with fail-safe action:

- Type 5827-Axx/-Exx

SAMSON electric actuators with process controllers with fail-safe action:

- TROVIS 5725-3
- TROVIS 5725-8

Warning against residual hazards

To avoid personal injury or property damage, plant operators and operating personnel must prevent hazards that could be caused in the control valve by the process medium, the operating pressure, the signal pressure or by moving parts by taking appropriate precautions. 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 valve must be identified in a risk assessment and prevented through the corresponding standard operating procedures 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.

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 control valves comply with the requirements of the European Pressure Equipment Directive 2014/68/EU and the European Machinery Directive 2006/42/EC. Valves with a CE marking have a declaration of conformity, which includes information about the applied conformity assessment procedure. Chapter 14 contains this declaration of conformity.

The electric actuators are designed for use in low voltage installations. For wiring, maintenance and repair, observe the relevant safety regulations.

Referenced documents

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

- Mounting and operating instructions for the mounted actuator, for example:
  - ▶ EB 5857 for Type 5857 Electric Actuators
  - ▶ EB 5827-1 and ▶ EB 5827-2 for Type 5827
  - ▶ EB 5757 for TROVIS 5757-3 Electric Actuators with Process Controller
  - ▶ EB 5757-7 for TROVIS 5757-7 Electric Actuators with Process Controller
  - ▶ EB 5724 for TROVIS 5724-3 and TROVIS 5725-3 Electric Actuators with Process Controller
  - ▶ EB 5724-8 for TROVIS 5724-8 and TROVIS 5725-8 Electric Actuators with Process Controller
  - ▶ EB 5840 for Type 2780 Pneumatic Actuators
- Type 3222/2780 Control Valve: Mounting and operating instructions for mounted valve accessories (positioner, solenoid valve etc.)
- If a device contains a substance listed as a substance of very high concern (SVHC) on the candidate list of the REACH regulation, the document “Additional Information on Your Inquiry/Order” is added to the SAMSON order documents. This document includes the SCIP number assigned to the devices concerned. This number 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 contained in the device.
  More information on material compliance at SAMSON can be found at ▶ www.sam-

songroup.com > About SAMSON > Environment, Social & Governance > Material Compliance

1.1 Notes on possible severe personal injury

⚠ DANGER

Risk of bursting in pressure equipment.

Control valves and pipelines are pressure equipment. Excessive pressurization or improper opening can lead to valve components bursting.

⇨ Observe the maximum permissible pressure for valve and plant.

⇨ Before starting any work on pressure-bearing or pressure-retaining parts belonging to the valve assembly, depressurize all plant sections affected as well as the valve.

⇨ Drain the process medium from the plant sections affected as well as from the valve.

⚠ DANGER

Risk of fatal injury due to electric shock from electrically powered components.

⇨ While working on electric devices or before opening the device, disconnect the supply voltage and protect it against unintentional reconnection.

⇨ Do not remove any covers to perform adjustment work on live parts.

⇨ Only use protective equipment that can be protected against unintentional reconnection of the power supply.

⇨ SAMSON electric actuators are protected against spray water. Avoid jets of water.

⇨ Observe all other safety instructions in the associated documentation of the electric device (e.g. electric actuator).

1.2 Notes on possible personal injury

⚠ WARNING

Risk of burn injuries due to hot components and pipelines.

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

⇨ Follow the standard operating procedures provided by the plant operator.

In the event of a potential risk:

⇨ Allow components and pipelines to cool down.

⇨ Wear protective clothing and safety gloves.

⚠ WARNING

Risk of personal injury due to exhaust air being vented or compressed air escaping from pneumatically operated components.

When the valve is operated with a pneumatic actuator or pneumatic valve accessories, exhaust air is vented from the actuator, for example, while the valve is operating and when the valve opens or closes.

⇨ Install the control valve in such a way that vent openings are not located at eye level and the actuator does not vent at eye level in the work position.

⇨ Use suitable mufflers and vent plugs.

⇨ Wear eye protection when working in close proximity to pneumatic fittings and in the danger zone of the vent openings.

⚠ WARNING

Crush hazard arising from moving parts.

The pneumatic control valve (Type 3222/2780) contains moving parts (actuator and plug stems), which can injure hands or fingers if inserted into the valve.

⇨ Do not insert hands or finger into the yoke while the air supply is connected to the actuator.

⇨ Before working on the pneumatic control valve, disconnect and lock the pneumatic air supply as well as the control signal.

⇨ Do not impede the movement of the actuator and plug stem by inserting objects into the yoke.

⇨ Before unblocking the actuator and plug stem after they have become blocked (e.g. due to seizing up after remaining in the same position for a long time), release any stored energy in the actuator (e.g. spring compression). See associated actuator documentation.

⚠ WARNING

Risk of personal injury due to preloaded springs in pneumatic actuators.

Pneumatic control valves (Type 3222/2780) using an actuator with preloaded springs are under tension. These control valves with SAMSON pneumatic actuators can be identified by the long bolts protruding from the bottom of the actuator.

⇨ Before starting any work on the actuator, which requires the actuator to be opened, or when the actuator stem has become blocked, relieve the compression from the preloaded springs (see associated actuator documentation).

⚠ WARNING

Risk of hearing loss or deafness due to loud noise.

The noise emissions depend on the valve version, plant facilities and process medium.

⇨ Follow the standard operating procedures provided by the plant operator.

In the event of a potential risk:

⇨ Wear hearing protection when working near the valve.

⚠ WARNING

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

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

⇨ Follow the standard operating procedures provided by the plant operator.

In the event of a potential risk:

⇨ If possible, drain the process medium from the plant sections affected and from the valve.

⇨ Wear protective clothing, safety gloves and eye protection.

⚠ WARNING

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

Over time, markings, labels and nameplates on the control valve 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 damage to the electric control valve due to the supply voltage exceeding the permissible tolerances.

The electric control valves are designed for use according to regulations for low-voltage installations.

⇨ Observe the permissible tolerances of the supply voltage. See associated actuator documentation.

NOTICE

Risk of valve damage due to contamination (e.g. solid particles) in the pipeline.

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

⇨ Flush the pipelines before start-up.

NOTICE

Risk of valve damage due to unsuitable medium properties.

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

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

NOTICE

Risk of valve damage 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. This also applies to any required heat treatment to be performed on the valve.

⇨ Only allow qualified welding personnel to carry out welding operations.

⇨ Before welding painted valves into the pipeline and/or subject them to heat in any way, observe the temperature resistance of the paint coating system. The number of the coating system used can be found in the order documentation. The temperature resistance of all of our coating systems is specified in the Brochure ▶ WA 268.

2 Markings on the device

2.1 Valve nameplate

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

The nameplate is affixed to the valve body.

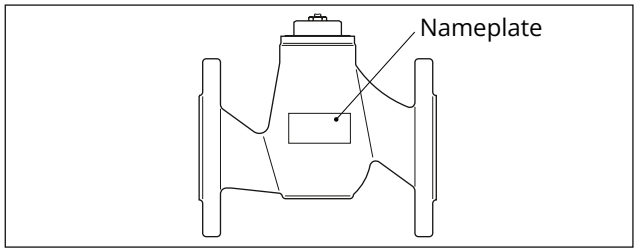


Fig. 1: *Location of the nameplate on the valve (example shown)*

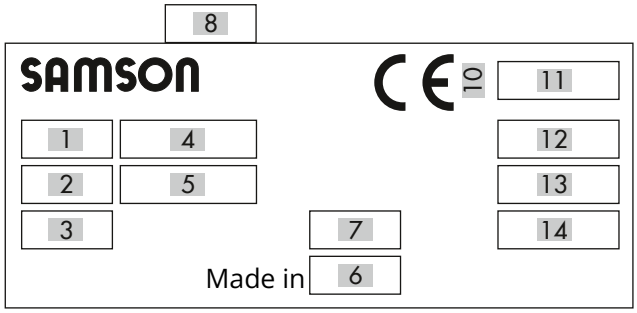


Fig. 2: *Inscriptions on the valve nameplate*

Item	Inscription meaning
1	Model number
2	Type designation
3	Flow coefficient
4	Material number
5	Serial number
6	Country of origin
7	Direction of flow symbol (DN 15)
8	Direction of flow symbol (DN 20 to 50)
10	CE marking: ID of the notified body (EU)
11	Other marks of conformity
12	Month and year of manufacture
13	Perm. temperature
14	Perm. differential pressure

Note

Fig. 2 and the inscription table list all possible characteristics and options that may appear on a valve nameplate. Only the inscriptions relevant to the ordered Type 3222 Valve actually appear on the nameplate.

Tip

SAMSON recommends to include the device's serial number (item 5 on the nameplate) and/or its material number (as specified in the order confirmation) in the plant documentation for the associated tag number.

The serial number enables you to view the device's current technical data as configured by SAMSON. The material number enables you to view the device's technical data as configured by SAMSON upon delivery of the device. To view these data, go to our website at:

▶ *www.samsongroup.com > Products > Electronic nameplate*

For example, you can also use the associated information to order a new nameplate from our after-sales service, if required.

2.2 Actuator nameplate

See associated actuator documentation.

3 Design and principle of operation

The medium flows through the single-seated globe valve in the direction indicated by the arrow. The position of the plug determines the flow rate across the area released between plug and valve seat.

The valve is opened by the valve spring when the actuator stem retracts. A special version is required for water with temperatures above 150 °C and for steam. The plug is moved by changing the control signal applied to the actuator.

The valve and actuator have a force-locking connection.

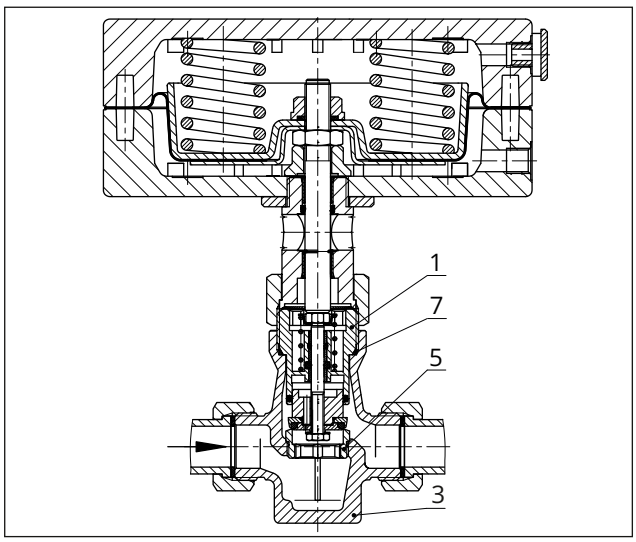


Fig. 3: *Type 3222/2780-1*

1	Plug	5	Seat
3	Body	7	O-ring

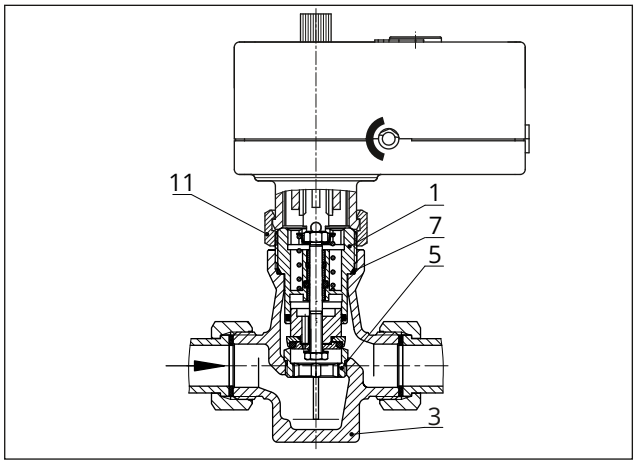


Fig. 4: *Type 3222/5857 · Type 3222/5757-3 · Type 3222/5757-7*

1	Plug	7	O-ring
3	Body	11	Guide nipple
5	Seat		

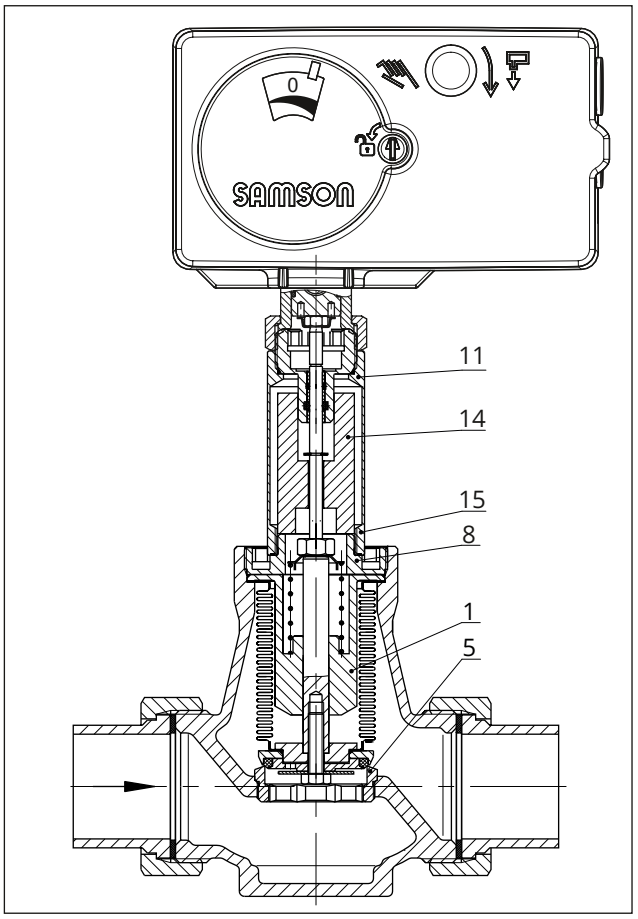


Fig. 5: *Type 3222/5827 · Type 3222/5724-3 · Type 3222/5724-8*
Versions for water above 150 °C and steam

1	Plug	11	Guide nipple
5	Seat	14	Insulating section
8	Connecting piece	15	Insulating pipe

3.1 Fail-safe action

When the Type 3222 Valve is combined with one of the following actuators, the valve moves to the fail-safe position upon failure of the air supply or supply voltage:

- Type 5827-A and Type 5827-E Electric Actuators
- TROVIS 5725-3 and TROVIS 5725-8 Electric Actuators with Process Controller
- Type 2780 Pneumatic Actuators

One of two different fail-safe positions can be assumed by the control valve:

- **Actuator stem extends (FA):**
  Upon supply voltage or air supply failure, the actuator stem extends.

i Note

The TROVIS 5725-3 and TROVIS 5725-8 Electric Actuators with Process Controller in the version with force-locking attachment and the Type 5827-A Electric Actuator with "actuator stem extends" fail-safe action are tested by the German technical surveillance association TÜV according to DIN EN 14597 in combination with the SAMSON Type 3222 Valve. The registration number is available on request.

– **Actuator stem retracts (FE):**
  Upon supply voltage or air supply failure, the actuator stem retracts.

i Note

The fail-safe action of pneumatic actuators can be reversed (see associated actuator documentation).

The fail-safe action of electric actuators (with process controller) is already determined at the ordering stage.

3.2 Versions

Electric actuators

The electric actuators can be controlled either using a three-step signal or, in the version with positioner, with continuous signals adjustable in the range from 0 to 20 mA or from 0 to 10 V. Various electrical accessories can be optionally installed.

Type 5827-A and Type 5827-E Actuators are able to perform a fail-safe action.

Electric actuators with process controllers

Electric actuators with process controllers are a combination of an electric actuator and a digital process controller. The TROVIS 5757-3, TROVIS 5724-3 and TROVIS 5725-3 Electric Actuators with Process Controller are suitable for DHW applications. TROVIS 5757-7 is suitable for heating and cooling applications.

TROVIS 5724-8 and TROVIS 5725-8 have two PID control modules and are ready-wired for heating and cooling applications.

TROVIS 5725-3 and TROVIS 5725-8 Actuators are able to perform a fail-safe action.

Pneumatic actuators

The Type 2780-1 Pneumatic Actuator uses a control signal from 0.4 to 1 bar and Type 2780-2 uses a control signal from 0.4 to 2 bar which is applied to the signal pressure connection.

The pneumatic actuators require a supply pressure of at least 0.2 bar above the maximum bench range. All actuators are available with "Actuator stem extends (FA)" or "Actuator stem retracts (FE)" fail-safe action.

Table 1: *Available versions and possible combinations (valve/actuator)*

Type 3222 Globe Valve/actuator												
	Fail-safe action: actuator stem			Nominal size DN						Thread size G		
Type/TROVIS	extends	retracts	Details in	15	20	25	32	40	50	½	¾	1
Electric actuators												
5857	–	–	▶ T 5857	•	•	•	–	–	–	•	•	•
5827-N1	–	–	▶ T 5827	•	•	•	–	–	–	•	•	•
5827-A1	•	–	▶ T 5827	•	•	•	–	–	–	•	•	•
5827-E1	–	•	▶ T 5857	•	•	•	–	–	–	•	•	•
5827-N2	–	–	▶ T 5827	–	–	–	•	•	•	–	–	–
5827-A2	•	–	▶ T 5827	–	–	–	•	•	•	–	–	–
5827-E2	–	•	▶ T 5827	–	–	–	•	•	•	–	–	–
Electric actuators with process controllers for domestic hot water heating												
5757-3	–	–	▶ T 5757	•	•	•	–	–	–	•	•	•
5724-310	–	–	▶ T 5724	•	•	•	–	–	–	•	•	•
5725-310	•	–	▶ T 5724	•	•	•	–	–	–	•	•	•
5724-320	–	–	▶ T 5724	–	–	–	•	•	•	–	–	–
5725-320	•	–	▶ T 5724	–	–	–	•	•	•	–	–	–
Electric actuators with process controller for heating and cooling applications												
5757-7	–	–	▶ T 5757-7	•	•	•	–	–	–	•	•	•
5724-810	–	–	▶ T 5724-8	•	•	•	–	–	–	•	•	•
5724-820	–	–	▶ T 5724-8	–	–	–	•	•	•	–	–	–
5725-810	•	–	▶ T 5724-8	•	•	•	–	–	–	•	•	•
5725-820	•	–	▶ T 5724-8	–	–	–	•	•	•	–	–	–
Pneumatic actuators												
2780-1	•	•	▶ T 5840	•	•	•	•	•	•	•	•	•
2780-2	•	•	▶ T 5840	•	•	•	•	•	•	•	•	•

Intermediate insulating piece

An intermediate insulating piece (1990-1712) must be used under the following conditions:

- For medium temperatures from -15 °C (red brass) or -10 °C (EN-GJS-400-18-LT) to +5 °C (actuators according to Table 1)
- In networks with a constant medium temperature >135 °C (TROVIS 5724-3, TROVIS 5724-8, TROVIS 5725-3, TROVIS 5725-8 and Type 5827 Actuators)
- For liquids >120 °C (TROVIS 5757-3, TROVIS 5757-7 and Type 5857 Actuators)

⇨ Read instructions in Chapter 5.

3.3 Additional fittings

Strainer

SAMSON recommends installing a SAMSON Type 2 NI Strainer upstream of the valve. It prevents solid particles in the process medium from damaging the control valve.

⇨ Read instructions in Chapter 5.

Bypass and shut-off valves

SAMSON recommends installing a shut-off valve both upstream of the strainer and downstream of the control valve and installing a bypass line. The bypass ensures that the plant does not need to be shut down for service and repair work on the valve.

3.4 Technical data

The nameplates on the valve and actuator provide information on the control valve version (see Chapter 2).

Note

More information on Type 3222 Valve is available in the following data sheet:

– ▶ *T 5866*

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.

Table 2: *Technical data*

Type 3222 Globe Valve								
Nominal size	**Globe valve with male thread connection or with flanged body**	**DN**	**15**	**20**	**25**	**32**	**40**	**50**
Connection size	**Globe valve with female thread**	**G**	**½**	**¾**	**1**	**–**	**–**	**–**
Pressure rating		PN	25					
Seat-plug seal			Metal seal for K_{VS} ≤2.5 · Soft seal for K_{VS} ≥3.6					
Rated travel		mm	6			12		
Rangeability			50 : 1					
Leakage class according to DIN EN 60534-4			Class I (≤0.05 % of K_{VS})					
Conformity			CE					
Version for water, oil and other liquids								
Max. permissible temperature			150 °C[1]					
Max. permissible differential pressure Δp								
	Type 5827, TROVIS 5724-3/ 5724-8/5725-3/5725-8, Type 2780	bar	20	20	20	12/16[4]	12	12
	Type 5857, TROVIS 5757-3/ 5757-7	bar	20	20	20	–	–	–
Version for water above 150 °C and steam								
Max. permissible temperature			200 °C					
Max. permissible differential pressure Δp								
	Type 5827, TROVIS 5724-3/ 5724-8/5725-3/5725-8, Type 2780	bar	20 with 0.1 ≤ K_{VS} ≤ 2.5 10 with 3.6 ≤ K_{VS} ≤ 8			8	8	8
	Type 5857, TROVIS 5757-3/ 5757-7	bar	20[2] · 5[3]	5	5	–	–	–

1) Use an intermediate insulating piece (1990-1712).
   - For medium temperatures from -15 °C (red brass) or -10 °C (EN-GJS-400-18-LT) to +5 °C (actuators according to Table 1)
   - In networks with a constant medium temperature >135 °C (TROVIS 5724-3, TROVIS 5724-8, TROVIS 5725-3 and TROVIS 5725-8 Actuators)
   - For liquids >120 °C (TROVIS 5757-3, TROVIS 5757-7 and Type 5857 Actuators)

2) Differential pressure with K_{VS} = 1 and 1.6

3) Differential pressure with K_{VS} = 2.5 and 4

4) Applies to K_{VS} = 10

Table 3: *Materials · Material numbers according to DIN EN*

Type 3222 Globe Valve		
Valve body	Version with male/female thread	CC499K (CuSn5Zn5Pb2-C)
	Version with flanged body	EN-GJS-400-18-LT (GGG-40.3)
Seat		Stainless steel 1.4305
Plug		1.4305/CW602N with soft seal · 1.4305 when 0.1 ≤ K_{VS} ≤ 2.5
Valve spring		Stainless steel 1.4310
Seal		EPDM/FKM · Oil-resistant version: FKM
Welding ends		1.0460
Threaded ends		CW617N
Screwed-on flanges		1.0460/1.0038

Table 4: *Nominal sizes and K_{VS} coefficients*

Type 3222 Globe Valve								
Nominal size	**Globe valve with male thread connection or with flanged body**	**DN**	**15**	**20**	**25**	**32**	**40**	**50**
Connection size	**Globe valve with female thread**	**G**	**½**	**¾**	**1**	**–**	**–**	**–**
K_{VS} coefficients			4[1] · 3.6[2]	6.3[1] · 5.7[2]	8[1] · 7.2[2]	16[1]	20[1]	25[1]
Reduced K_{VS} coefficients			0.1 · 0.16 · 0.25 · 0.4 · 0.63 · 1.0 · 1.6 · 2.5	1.0 · 1.6 · 2.5 · 4[1] · 3.6[2]	1.0 · 1.6 · 2.5 · 4[1] · 3.6[2]	10[3]	–	–
Rated travel		mm	6	6	6	12	12	12

[1] Version with male thread connection or with flanged body

[2] Version with female thread

[3] 6 mm rated travel

Table 5: *Dimensions and weights*

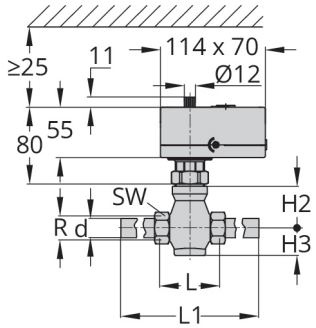
Valves with male thread connection							
Nominal size	DN	15	20	25	32	40	50
Length L	mm	65	70	75	100	110	130
Height H2	mm	45.5	45.5	45.5	94	94	94
Version for water above 150 °C and steam or version with intermediate insulating piece (1990-1712)		125.5	125.5	125.5	174	174	174
Height H3	mm	30.5	30.5	30.5	43	43	43
... with welding ends							
Thread size R	G	¾	1	1¼	1¾	2	2½
Pipe Ød	mm	21.3	26.8	33.7	42	48	60
Width across flats (A/F)		30	37	46	60	65	82
Length L1	mm	210	234	244	268	294	330
Weight without actuator	kg (approx.)	0.9	1.1	1.4	3.5	3.9	5
Version for water above 150 °C and steam or version with intermediate insulating piece (1990-1712)		1.3	1.5	1.8	3.9	4.3	5.4

... with threaded ends							
Length L1	mm	129	144	159	192	206	228
Male thread A	G	½	¾	1	1¼	1½	2
Width across flats (A/F)		30	37	46	60	65	82
Weight without actuator	kg (approx.)	0.8	1.0	1.3	3.4	3.7	4.6
Version for water above 150 °C and steam or version with intermediate insulating piece (1990-1712)		1.2	1.4	1.7	3.8	4.1	5.0
... with flanges							
Width across flats (A/F)		30	37	46	60	65	82
Length L1	mm	130	150	160	180	200	230
Weight without actuator	kg (approx.)	2.2	2.7	3.5	6.5	7.3	9.2
Version for water above 150 °C and steam or version with intermediate insulating piece (1990-1712)		2.6	3.1	3.9	6.9	7.7	9.6
Valves with female thread							
Connection size	G	½	¾	1	–	–	–
Width across flats (A/F)		27	34	46	–	–	–
Length L	mm	65	75	90	–	–	–
Female thread	G	½	¾	1	–	–	–
Weight without actuator	kg (approx.)	0.6	0.7	0.9	–	–	–
Version for water above 150 °C and steam or version with intermediate insulating piece (1990-1712)		1.0	1.1	1.3	–	–	–
Valves with flanged body							
Nominal size	DN	15	20	25	32	40	50
Height H2	mm	46	46	46	94	94	94
Length L3	mm	130	150	160	180	200	230
Weight without actuator	kg (approx.)	2.3	2.9	3.4	6.6	7.8	8.6
Version for water above 150 °C and steam or version with intermediate insulating piece (1990-1712)		2.7	3.3	3.8	7.0	8.2	9.0

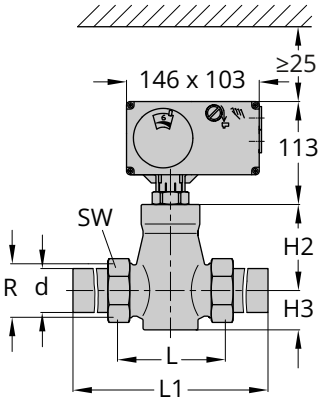
Table 6: *Actuator specifications*

Electric actuators	**Type**	**5857**		**5827**	
Weight	kg (approx.)	0.7		1.25	
Electric actuators with process controllers	**TROVIS**	**5757-3, 5757-7**	**5724-3, 5724-8**		**5725-3, 5725-8**
Weight	kg (approx.)	0.7	1.1		1.3
Pneumatic actuators	**Type**	**2780-1**		**2780-2**	
Actuator area	cm²	120			
Signal pressure connection a		G ⅛			
Weight	kg (approx.)	2		3.2	

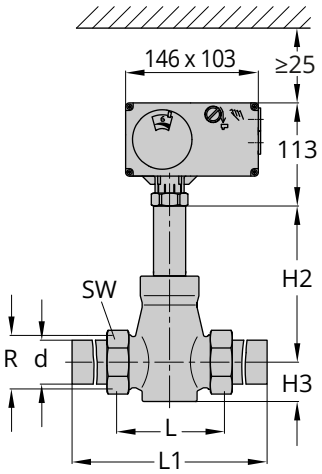
Electric control valves
Type 3222 Globe Valve with male thread connection and welding ends



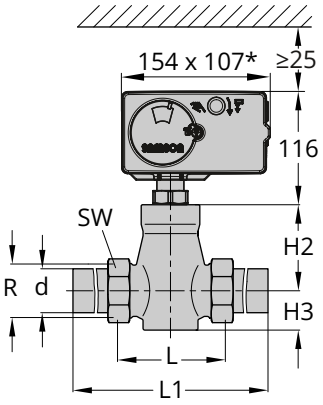
Type 3222/5857: DN 15 to 25
Type 3222/5757-3: DN 15 to 25
Type 3222/5757-7: DN 15 to 25



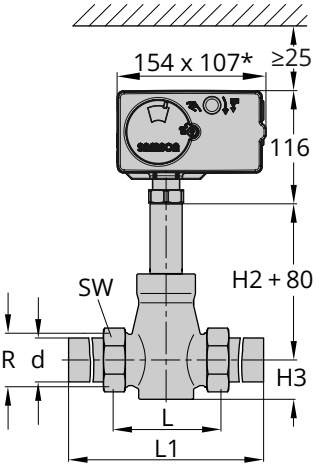
Type 3222/5724-3: DN 15 to 50
Type 3222/5724-8: DN 15 to 50
Type 3222/5725-3: DN 15 to 50
Type 3222/5725-8: DN 15 to 50



Version for water above 150 °C and steam
Type 3222/5724-3: DN 15 to 50
Type 3222/5724-8: DN 15 to 50
Type 3222/5725-3: DN 15 to 50
Type 3222/5725-8: DN 15 to 50



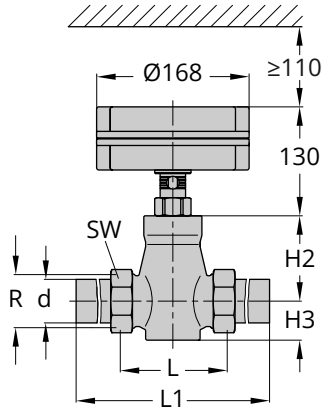
Type 3222/5827: DN 15 to 50
*** Dimensions for actuators with double stroking speed:** 154x140



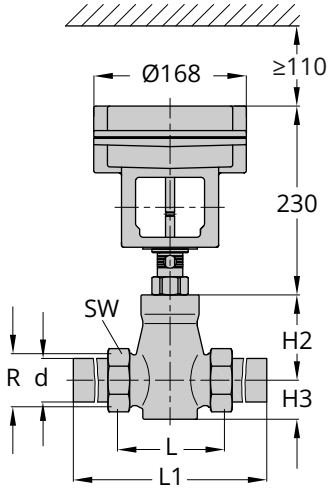
Version for water above 150 °C and steam
Type 3222/5827: DN 15 to 50
*** Dimensions for actuators with double stroking speed:** 154x140

Pneumatic control valves

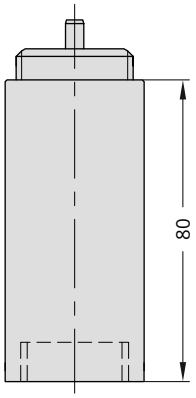
Type 3222 Globe Valve with male thread connection and welding ends



Type 3222/2780-1: DN 15 to 50

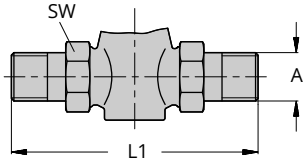


Type 3222/2780-2: DN 15 to 50

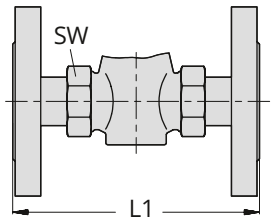


Intermediate insulating piece (1990-1712)

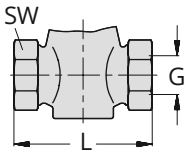
Other versions for Type 3222 Globe Valve



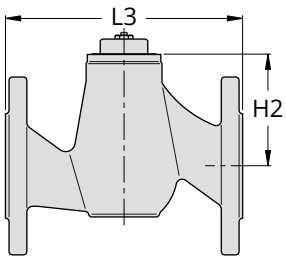
Version with male thread connection and threaded ends



Version with male thread connection and flanges



Version with female thread



Version with flanged body

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

4.2 Removing the packaging from the valve

Observe the following sequence:

⇨ Do not open or remove the packaging until immediately before lifting the control valve to install it into the pipeline.

⇨ Dispose and recycle the packaging in accordance with the local regulations.

4.3 Transporting and lifting the valve

Tip

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

4.3.1 Transporting the valve

Transport instructions

– Protect the control valve against external influences (e.g. impact).
– Protect the control valve against moisture and dirt.
– Observe the permissible transportation temperature range of -20 to +65 °C (-4 to +149 °F).

Note

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

4.3.2 Lifting the valve

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

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

4.4 Storing the valve

NOTICE

Risk of valve 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.*

Note

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

Storage instructions

– The control valves can be stored horizontally. Secure the control valve assembly in the stored position against slipping or tipping over.
– Protect the control valve against external influences (e.g. impact).
– Protect the control valve against moisture and dirt. Store it at a relative humidity of less than 75 %. In damp spaces, prevent condensation. If necessary, use a drying agent or heating.
– Make sure that the ambient air is free of acids or other corrosive media.
– Observe the permissible storage temperature from -20 to +65 °C (-4 to +149 °F).
– Do not place any objects on the control valve.

Special storage instructions for elastomers

Elastomer, e.g. actuator diaphragm (Type 2780 Pneumatic Actuator)

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

Tip

Our 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 control valve is the front view looking onto the operating controls (including valve accessories).

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

To ensure that the control valve functions properly, proceed as follows:

⇨ Do not exceed the maximum permissible flow velocity.

i *Note*

The plant operator is responsible for determining the maximum permissible flow velocity. Our after-sales service can support you to determine the flow velocity for your plant.

⇨ Install the control valve free of stress and with the least amount of vibrations as possible. Read sections 'Mounting position' and 'Support and suspension' in this chapter.

⇨ Install the control valve allowing sufficient space to remove the actuator and valve or to perform service and repair work on them.

Mounting position

Generally, SAMSON recommends installing the valve with the actuator upright and on top of the valve.

For versions suitable for water, oil and other liquids, the actuator must not be suspended downwards.

In the following versions, the valve must be installed with the actuator on top in a horizontal pipeline:

– Version for water above 150 °C and steam

⇨ Contact SAMSON if the mounting position is not as specified above.

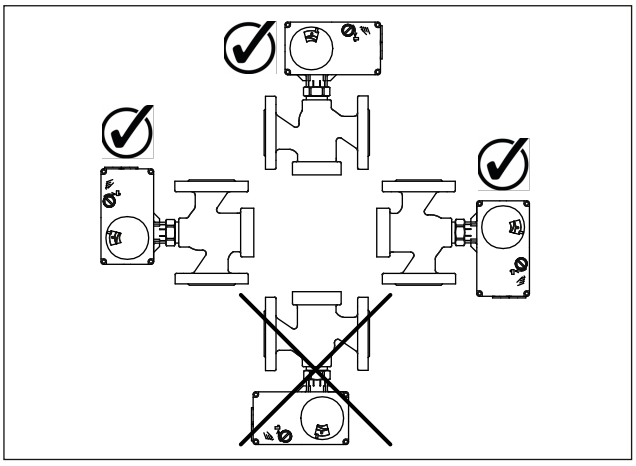


Fig. 6: *Mounting position*

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 and the pipeline.

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

Valves, which are not installed in the pipeline in the upright position with the actuator on top, must be supported or suspended.

Vent plug (Type 3222/2780 only)

Vent plugs are screwed into the exhaust air ports of pneumatic and electropneumatic devices. They ensure that any exhaust air that forms can be vented to the atmosphere (to avoid excess pressure in the device). Furthermore, the vent plugs allow air intake to prevent a vacuum from forming in the device.

⇨ Locate the vent plug on the opposite side to the work position of operating personnel.

Valve accessories

⇨ During connection of valve accessories, make sure that they are easily accessible and can be operated safely from the work position.

5.2 Preparation for installation

Before installation, make sure the following conditions are met:

– The valve is clean.
– The valve and all valve accessories (including piping) are not damaged.

- The valve data on the nameplate (type designation, nominal size, material, pressure rating and temperature range) match the plant conditions (nominal size and pressure rating of the pipeline, medium temperature etc.). See Chapter 2 for more details on the nameplate.
- The requested or required additional pipe fittings (see Chapter 3.3) have been installed or prepared as necessary before installing the valve.

Intermediate insulating piece

When using an intermediate insulating piece, observe the following points:

- Do not insulate the actuator and the coupling nut as well.
- Only insulate the intermediate insulating piece up to 25 mm at the maximum.

Strainer

When using a strainer, make sure the following conditions are met:

- The direction of flow of the strainer and valve are the same.
- Install the strainer with the filter element facing downwards.
- Sufficient space exists to remove the filter.

Proceed as follows:

⇨ Lay out the necessary material and tools to have them ready during installation work.

⇨ Flush the pipelines.

i Note

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

⇨ For steam applications, dry the pipelines. Moisture will damage the inside of the valve.

⇨ Check any mounted pressure gauges to make sure they function properly.

⇨ When the valve and actuator are already assembled, check the tightening torques of the bolted joints. Components may loosen during transport.

5.3 Mounting the device

The activities listed below are necessary to install the valve and before it can be started up.

! NOTICE

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

Observe the specified torques when tightening control valve components. Over-torquing leads to parts wearing out more quickly. Under-torquing may cause leakage.

⇨ *Observe tightening torques.*

SAMSON recommends first installing the valve into the pipeline and mounting the actuator afterwards.

Procedure to insulate cold systems

To insulate cold systems, SAMSON recommends to proceed as follows:

1. Fill the plant and carefully rinse it.
2. Shut down the plant and let it heat up until all the condensation water has dried off.
3. Mount and insulate the intermediate insulating piece (1990-1712).

Observe the following on installing the control valve:

⇨ Make sure that the electric actuator remains accessible after installation.

⇨ Make sure that the plug stem can move freely and does not touch the insulation.

⇨ Make sure that the actuator stem does not touch the insulation.

i Note

The insulation thickness depends on the medium temperature and the ambient conditions. 50 mm is a typical thickness.

5.3.1 Installing the valve into the pipeline

! NOTICE

Risk of valve damage 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. This also applies to any required heat treatment to be performed on the valve.

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

⇨ *Before welding painted valves into the pipeline and/or subject them to heat in any way, observe the temperature resistance of the paint coating system. The number of the coating system used can be found in the order documentation. The temperature resistance of all of our coating systems is specified in the Brochure ▶ WA 268.*

NOTICE

Premature wear and leakage due to insufficient support or suspension.

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

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.
3. Remove any protective caps from the valve ports before installing the valve.
4. Lift the valve to the site of installation (see Chapter 4.3.2). Observe the flow direction through the valve. The arrow on the valve indicates the direction of flow.
5. Connect the valve free of stress into the pipeline according to the type of end connections.

   With flanges: make sure that the correct flange gaskets are used.

   Version with welding ends: completely retract the actuator stem to protect the plug from sparks during welding.
6. Attach a support or suspension on the valve, if necessary.

5.3.2 Mounting the actuator onto the valve

WARNING

Risk of personal injury due to preloaded springs in pneumatic actuators.

Pneumatic control valves (Type 3222/2780) using an actuator with preloaded springs are under tension. These control valves with SAMSON pneumatic actuators can be identified by the long bolts protruding from the bottom of the actuator.

⇨ *Before starting any work on the actuator, which requires the actuator to be opened, or when the actuator stem has become blocked, relieve the compression from the preloaded springs (see associated actuator documentation).*

Depending on the version, SAMSON control valves are either delivered with the actuator already mounted on the valve or the valve and actuator are delivered separately. When delivered separately, the valve and actuator must be assembled together on site.

Mounting the actuator

⇨ To mount the actuator, proceed as described in the associated actuator documentation.

⇨ See 'Referenced documents' section in Chapter 1 for associated actuator documentation.

Note

Remove the mounted actuator before mounting the other actuator (see associated actuator documentation).

5.3.3 Connecting the actuator

DANGER

Risk of fatal injury due to electric shock from electrically powered components.

⇨ *While working on electric devices or before opening the device, disconnect the supply voltage and protect it against unintentional reconnection.*

⇨ *Do not remove any covers to perform adjustment work on live parts.*

⇨ *Only use protective equipment that can be protected against unintentional reconnection of the power supply.*

⇨ *SAMSON electric actuators are protected against spray water. Avoid jets of water.*

⇨ *Observe all other safety instructions in the associated documentation of the electric device (e.g. electric actuator).*

Perform the electrical or pneumatic connection of the actuator as described in the associated actuator documentation.

5.3.4 Configuring the actuator

The electric actuator versions with positioner as well as electric actuators with process controller can be adapted to the control task. Configure the actuator as described in the associated actuator documentation.

i Note

For electric control valves with positioner, an initialization needs to be performed after the initial start-up (see associated documentation).

5.4 Testing the installed valve

⚠ DANGER

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

Control valves 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 starting any work on pressure-bearing or pressure-retaining parts belonging to the valve assembly:

- ⇨ *Depressurize all plant sections affected and the valve (including the actuator). Release any stored energy.*
- ⇨ *Drain the process medium from the plant sections affected as well as from the valve.*

⚠ DANGER

Risk of fatal injury due to electric shock from electrically powered components.

- ⇨ *While working on electric devices or before opening the device, disconnect the supply voltage and protect it against unintentional reconnection.*
- ⇨ *Do not remove any covers to perform adjustment work on live parts.*
- ⇨ *Only use protective equipment that can be protected against unintentional reconnection of the power supply.*
- ⇨ *SAMSON electric actuators are protected against spray water. Avoid jets of water.*
- ⇨ *Observe all other safety instructions in the associated documentation of the electric device (e.g. electric actuator).*

⚠ 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. Additionally, a loud noise may briefly occur through the sudden venting of the pneumatic actuator or pneumatic valve accessories not fitted with noise-reducing elements. Both can damage hearing.

- ⇨ *Follow the standard operating procedures provided by the plant operator.*

  In the event of a potential risk:

  - ⇨ *Wear hearing protection when working near the valve.*

⚠ WARNING

Crush hazard arising from moving parts.

The pneumatic control valve (Type 3222/2780) contains moving parts (actuator and plug stems), which can injure hands or fingers if inserted into the valve.

- ⇨ *Do not insert hands or finger into the yoke while the air supply is connected to the actuator.*
- ⇨ *Before working on the pneumatic control valve, disconnect and lock the pneumatic air supply as well as the control signal.*
- ⇨ *Do not impede the movement of the actuator and plug stem by inserting objects into the yoke.*
- ⇨ *Before unblocking the actuator and plug stem after they have become blocked (e.g. due to seizing up after remaining in the same position for a long time), release any stored energy in the actuator (e.g. spring compression). See associated actuator documentation.*

⚠ WARNING

Risk of personal injury due to exhaust air being vented or compressed air escaping from pneumatically operated components.

When the valve is operated with a pneumatic actuator or pneumatic valve accessories, exhaust air is vented from the actuator, for example, while the valve is operating and when the valve opens or closes.

- ⇨ *Wear eye protection when working in close proximity to pneumatic fittings and in the danger zone of the vent openings.*

⚠ WARNING

Risk of personal injury due to preloaded springs in pneumatic actuators.

Pneumatic control valves (Type 3222/2780) using an actuator with preloaded springs are under tension. These control valves with SAMSON pneumatic actuators can be identified by the long bolts protruding from the bottom of the actuator.

⇨ *Before starting any work on the actuator, which requires the actuator to be opened, or when the actuator stem has become blocked, relieve the compression from the preloaded springs (see associated actuator documentation).*

To test the valve functioning before start-up or putting back the valve into operation, perform the following tests:

5.4.1 Leak test

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

Our after-sales service can support you to plan and perform a leak test for your plant.

1. Close the valve.
2. Slowly apply the test medium to the inlet space upstream of the valve. A sudden surge in pressure and resulting high flow velocities can damage the valve.
3. Open the valve.
4. Apply the required test pressure.
5. Check the valve for leakage to the atmosphere.
6. Depressurize the pipeline section and valve.
7. Rework any parts that leak and repeat the leak test.

5.4.2 Travel motion

The movement of the actuator stem must be linear and smooth.

⇨ Apply the maximum and minimum control signals to check the end positions of the valve. Check the movement of the actuator stem.

⇨ Type 3222/2780 Pneumatic Control Valve: check the travel reading at the travel indicator scale.

5.4.3 Fail-safe action

The fail-safe position of a valve can only be checked when the valve is combined with an actuator that moves to the fail-safe position upon air supply or control signal failure.

Fail-safe position with pneumatic actuators with integrated springs

⇨ Shut off the signal pressure line.

⇨ Check whether the valve moves to the fail-safe position (see Chapter 3.1).

Fail-safe position for electric actuators with fail-safe action

⇨ Disconnect the supply voltage from the actuator.

⇨ Check whether the valve moves to the fail-safe position (see Chapter 3.1).

5.4.4 Pressure test

The plant operator is responsible for performing the pressure test.

Tip

Our after-sales service can support you to plan and perform a pressure test for your plant.

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

– Retract the plug stem to open the valve.
– Observe the maximum permissible pressure for both the valve and plant.

6 Start-up

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 components and pipelines.

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

⇨ *Follow the standard operating procedures provided by the plant operator.*

In the event of a potential risk:

⇨ *Allow components and pipelines to cool down.*

⇨ *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. Additionally, a loud noise may briefly occur through the sudden venting of the pneumatic actuator or pneumatic valve accessories not fitted with noise-reducing elements. Both can damage hearing.

⇨ *Follow the standard operating procedures provided by the plant operator.*

In the event of a potential risk:

⇨ *Wear hearing protection when working near the valve.*

⚠ WARNING

Crush hazard arising from moving parts.

The pneumatic control valve (Type 3222/2780) contains moving parts (actuator and plug stems), which can injure hands or fingers if inserted into the valve.

⇨ *Do not insert hands or finger into the yoke while the air supply is connected to the actuator.*

⇨ *Before working on the pneumatic control valve, disconnect and lock the pneumatic air supply as well as the control signal.*

⇨ *Do not impede the movement of the actuator and plug stem by inserting objects into the yoke.*

⇨ *Before unblocking the actuator and plug stem after they have become blocked (e.g. due to seizing up after remaining in the same position for a long time), release any stored energy in the actuator (e.g. spring compression). See associated actuator documentation.*

⚠ WARNING

Risk of personal injury due to exhaust air being vented or compressed air escaping from pneumatically operated components.

When the valve is operated with a pneumatic actuator or pneumatic valve accessories, exhaust air is vented from the actuator, for example, while the valve is operating and when the valve opens or closes.

⇨ *Wear eye protection when working in close proximity to pneumatic fittings and in the danger zone of the vent openings.*

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

- The control valve is properly installed into the pipeline (see Chapter 5).
- The leak and function tests have been completed successfully (see Chapter 5.4).
- The prevailing conditions in the plant section affected meet the valve sizing requirements (see section 'Intended use' in Chapter 1).

Start-up/putting the device back into operation

1. Allow the valve to cool down or warm up to reach ambient temperature before start-up when the ambient temperature and process medium temperature differ greatly or the medium properties require such a measure.
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 may damage the valve.
3. Check the valve to ensure it functions properly.

7 Operation

Immediately after completing start-up or putting the valve back into operation, the valve is ready for use.

⚠ WARNING

Risk of burn injuries due to hot components and pipelines.

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

⇨ *Follow the standard operating procedures provided by the plant operator.*

In the event of a potential risk:

⇨ *Allow components and pipelines to cool down.*

⇨ *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. Additionally, a loud noise may briefly occur through the sudden venting of the pneumatic actuator or pneumatic valve accessories not fitted with noise-reducing elements. Both can damage hearing.

⇨ *Follow the standard operating procedures provided by the plant operator.*

In the event of a potential risk:

⇨ *Wear hearing protection when working near the valve.*

⚠ WARNING

Crush hazard arising from moving parts.

The pneumatic control valve (Type 3222/2780) contains moving parts (actuator and plug stems), which can injure hands or fingers if inserted into the valve.

⇨ *Do not insert hands or finger into the yoke while the air supply is connected to the actuator.*

⇨ *Before working on the pneumatic control valve, disconnect and lock the pneumatic air supply as well as the control signal.*

⇨ *Do not impede the movement of the actuator and plug stem by inserting objects into the yoke.*

⇨ *Before unblocking the actuator and plug stem after they have become blocked (e.g. due to seizing up after remaining in the same position for a long time), release any stored energy in the actuator (e.g. spring compression). See associated actuator documentation.*

⚠ WARNING

Risk of personal injury due to exhaust air being vented or compressed air escaping from pneumatically operated components.

When the valve is operated with a pneumatic actuator or pneumatic valve accessories, exhaust air is vented from the actuator, for example, while the valve is operating and when the valve opens or closes.

⇨ *Wear eye protection when working in close proximity to pneumatic fittings and in the danger zone of the vent openings.*

8 Malfunctions

Read hazard statements, warnings and caution notes in Chapter 1.

8.1 Troubleshooting

Malfunction	Possible reasons	Recommended action
Actuator and plug stem does not move on demand.	Actuator is blocked.	Put the control valve out of operation (see Chapter 10) and remove the blockage. **WARNING!** A blocked actuator or plug stem (e.g. due to seizing up after remaining in the same position for a long time) can suddenly start to move uncontrollably. Injury to hands or fingers is possible if they are inserted into the actuator or valve. Before trying to unblock the actuator or plug stem, disconnect and lock the pneumatic air supply as well as the control signal or disconnect the supply voltage and protect it against unintentional reconnection. Before unblocking the actuator, release any stored energy in the actuator (e.g. spring compression). See associated actuator documentation.
	Pneumatic actuators: Diaphragm in the actuator defective	See associated actuator documentation.
	Pneumatic actuator: Signal pressure too low	Check the signal pressure. Check the signal pressure line for leakage.
	Electric actuator: No or incorrect supply voltage connected.	Check the supply voltage and connections.
Actuator and plug stem do not stroke through the full range.	Electric actuator: No or incorrect supply voltage connected.	Check the supply voltage and connections.
	Pneumatic actuator: Signal pressure too low	Check the signal pressure. Check the signal pressure line for leakage.
	Incorrect setting of valve accessories	Check the settings of the valve accessories.
Increased flow through closed valve (seat leakage)	Dirt or other foreign particles deposited between the seat and plug.	Shut off the section of the pipeline and flush the valve.
	Valve trim is worn out.	Contact our after-sales service.
The valve leaks to the atmosphere (fugitive emissions).	The joint between the valve and pipeline has loosened or is damaged.	Put the control valve out of operation (see Chapter 10) and rework the parts that leak depending on the type of end connections.
	Plug stem seal defective	Contact our after-sales service.

i ***Note***

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

8.2 Emergency action

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

In the event of a valve malfunction:

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

Putting the device back into operation after a malfunction

See Chapter 6.

9 Servicing

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

⚠ DANGER

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

Control valves 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 starting any work on pressure-bearing or pressure-retaining parts belonging to the valve assembly:

- ⇨ *Depressurize all plant sections affected and the valve (including the actuator). Release any stored energy.*
- ⇨ *Drain the process medium from the plant sections affected as well as from the valve.*

⚠ WARNING

Risk of burn injuries due to hot components and pipelines.

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

- ⇨ *Follow the standard operating procedures provided by the plant operator.*

  In the event of a potential risk:

  - ⇨ *Allow components and pipelines to cool down.*
  - ⇨ *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. Additionally, a loud noise may briefly occur through the sudden venting of the pneumatic actuator or pneumatic valve accessories not fitted with noise-reducing elements. Both can damage hearing.

- ⇨ *Follow the standard operating procedures provided by the plant operator.*

  In the event of a potential risk:

  - ⇨ *Wear hearing protection when working near the valve.*

⚠ WARNING

Crush hazard arising from moving parts.

The pneumatic control valve (Type 3222/2780) contains moving parts (actuator and plug stems), which can injure hands or fingers if inserted into the valve.

- ⇨ *Do not insert hands or finger into the yoke while the air supply is connected to the actuator.*
- ⇨ *Before working on the pneumatic control valve, disconnect and lock the pneumatic air supply as well as the control signal.*
- ⇨ *Do not impede the movement of the actuator and plug stem by inserting objects into the yoke.*
- ⇨ *Before unblocking the actuator and plug stem after they have become blocked (e.g. due to seizing up after remaining in the same position for a long time), release any stored energy in the actuator (e.g. spring compression). See associated actuator documentation.*

⚠ WARNING

Risk of personal injury due to exhaust air being vented or compressed air escaping from pneumatically operated components.

When the valve is operated with a pneumatic actuator or pneumatic valve accessories, exhaust air is vented from the actuator, for example, while the valve is operating and when the valve opens or closes.

- ⇨ *Wear eye protection when working in close proximity to pneumatic fittings and in the danger zone of the vent openings.*

⚠ WARNING

Risk of personal injury due to preloaded springs in pneumatic actuators.

Pneumatic control valves (Type 3222/2780) using an actuator with preloaded springs are under tension. These control valves with SAMSON pneumatic actuators can be identified by the long bolts protruding from the bottom of the actuator.

⇨ *Before starting any work on the actuator, which requires the actuator to be opened, or when the actuator stem has become blocked, relieve the compression from the preloaded springs (see associated actuator documentation).*

⚠ WARNING

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

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

⇨ *Follow the standard operating procedures provided by the plant operator.*

In the event of a potential risk:

⇨ *If possible, drain the process medium from the plant sections affected and from the valve.*

⇨ *Wear protective clothing, safety gloves and eye protection.*

NOTICE

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

Observe the specified torques when tightening control valve components. Over-torquing leads to parts wearing out more quickly. Under-torquing may cause leakage.

⇨ *Observe tightening torques.*

Note

The control valve was checked by SAMSON before delivery.

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

9.1 Periodic testing

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

Tip

Our after-sales service can support you in drawing up an inspection and test plan for your plant.

SAMSON recommends the following inspections and tests:

Inspection and testing	Recommended action to be taken in the event of a negative result
Check the markings, labels and nameplates on the control valve for their readability and completeness.	Immediately renew damaged, missing or incorrect nameplates or labels.
	Clean any inscriptions that are covered with dirt and are illegible.
External leakage: Inspect the control valve at the possible points of leakage to ensure there is no leakage.	Check the joint between valve and pipeline/valve and actuator. Rework parts, if necessary. To do so, put the control valve out of operation (see Chapter 10).
Seat leakage	Shut off the section of the pipeline and flush the valve to remove any dirt and/or deposited foreign particles between the seat and plug.
Check the control valve for external damage that could impair the proper functioning of the control valve or even its safe operation.	Repair any damage immediately. If necessary, put the control valve out of operation to do so (see Chapter 10).
Check the valve accessories to ensure they are firmly mounted.	Tighten the connections of the valve accessories.
Check to ensure that the actuator and plug stems move smoothly.	If the actuator stem or plug stem is blocked, put the control valve out of operation (see Chapter 10) and remove the blockage. **WARNING!** A blocked actuator or plug stem (e.g. due to seizing up after remaining in the same position for a long time) can suddenly start to move uncontrollably. Injury to hands or fingers is possible if they are inserted into the actuator or valve. Before trying to unblock the actuator or plug stem, disconnect and lock the pneumatic air supply as well as the control signal or disconnect the supply voltage and protect it against unintentional reconnection. Before unblocking the actuator, release any stored energy in the actuator (e.g. spring compression). See associated actuator documentation.
	SAMSON recommends the use of positioners with integrated diagnostic firmware for control valves used for on/off service. The partial stroke test included in this software helps prevent a shut-off valve normally in its end position from seizing up or getting jammed.
If possible, check the valve's fail-safe position by briefly interrupting the air supply.	Put the control valve out of operation (see Chapter 10). Identify the cause for the malfunction and rectify it (see Chapter 8).

10 Decommissioning

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

⚠ DANGER

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

Control valves 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 starting any work on pressure-bearing or pressure-retaining parts belonging to the valve assembly:

- ⇨ *Depressurize all plant sections affected and the valve (including the actuator). Release any stored energy.*
- ⇨ *Drain the process medium from the plant sections affected as well as from the valve.*

⚠ DANGER

Risk of fatal injury due to electric shock from electrically powered components.

- ⇨ *While working on electric devices or before opening the device, disconnect the supply voltage and protect it against unintentional reconnection.*
- ⇨ *Do not remove any covers to perform adjustment work on live parts.*
- ⇨ *Only use protective equipment that can be protected against unintentional reconnection of the power supply.*
- ⇨ *SAMSON electric actuators are protected against spray water. Avoid jets of water.*
- ⇨ *Observe all other safety instructions in the associated documentation of the electric device (e.g. electric actuator).*

⚠ WARNING

Risk of burn injuries due to hot components and pipelines.

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

- ⇨ *Follow the standard operating procedures provided by the plant operator.*

  In the event of a potential risk:

  - ⇨ *Allow components and pipelines to cool down.*
  - ⇨ *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. Additionally, a loud noise may briefly occur through the sudden venting of the pneumatic actuator or pneumatic valve accessories not fitted with noise-reducing elements. Both can damage hearing.

- ⇨ *Follow the standard operating procedures provided by the plant operator.*

  In the event of a potential risk:

  - ⇨ *Wear hearing protection when working near the valve.*

⚠ WARNING

Crush hazard arising from moving parts.

The pneumatic control valve (Type 3222/2780) contains moving parts (actuator and plug stems), which can injure hands or fingers if inserted into the valve.

- ⇨ *Do not insert hands or finger into the yoke while the air supply is connected to the actuator.*
- ⇨ *Before working on the pneumatic control valve, disconnect and lock the pneumatic air supply as well as the control signal.*
- ⇨ *Do not impede the movement of the actuator and plug stem by inserting objects into the yoke.*
- ⇨ *Before unblocking the actuator and plug stem after they have become blocked (e.g. due to seizing up after remaining in the same position for a long time), release any stored energy in the actuator (e.g. spring compression). See associated actuator documentation.*

⚠ WARNING

Risk of personal injury due to exhaust air being vented or compressed air escaping from pneumatically operated components.

When the valve is operated with a pneumatic actuator or pneumatic valve accessories, exhaust air is vented from the actuator, for example, while the valve is operating and when the valve opens or closes.

⇨ *Wear eye protection when working in close proximity to pneumatic fittings and in the danger zone of the vent openings.*

⚠ WARNING

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

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

⇨ *Follow the standard operating procedures provided by the plant operator.*

In the event of a potential risk:

⇨ *If possible, drain the process medium from the plant sections affected and from the valve.*

⇨ *Wear protective clothing, safety gloves and eye protection.*

To put the control valve out of operation for service work or to remove it from the pipeline, proceed as follows:

1. Close the shut-off valves upstream and downstream of the control valve to stop the process medium from flowing through the valve.
2. Completely drain the pipelines and valve.
3. **Pneumatic control valve:** disconnect and lock the pneumatic air supply to depressurize the actuator.

   Electric control valve: disconnect and lock the control signal or disconnect the supply voltage and protect it against unintentional reconnection.
4. Release any stored energy.
5. If necessary, allow the pipeline and valve components to cool down or warm up to the ambient temperature.

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 components and pipelines.

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

⇨ *Follow the standard operating procedures provided by the plant operator.*

In the event of a potential risk:

⇨ *Allow components and pipelines to cool down.*

⇨ *Wear protective clothing and safety gloves.*

⚠ WARNING

Crush hazard arising from moving parts.

The pneumatic control valve (Type 3222/2780) contains moving parts (actuator and plug stems), which can injure hands or fingers if inserted into the valve.

⇨ *Do not insert hands or finger into the yoke while the air supply is connected to the actuator.*

⇨ *Before working on the pneumatic control valve, disconnect and lock the pneumatic air supply as well as the control signal.*

⇨ *Do not impede the movement of the actuator and plug stem by inserting objects into the yoke.*

⇨ *Before unblocking the actuator and plug stem after they have become blocked (e.g. due to seizing up after remaining in the same position for a long time), release any stored energy in the actuator (e.g. spring compression). See associated actuator documentation.*

⚠ WARNING

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

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

⇨ *Follow the standard operating procedures provided by the plant operator.*

In the event of a potential risk:

⇨ *If possible, drain the process medium from the plant sections affected and from the valve.*

⇨ *Wear protective clothing, safety gloves and eye protection.*

⚠ WARNING

Risk of personal injury due to preloaded springs in pneumatic actuators.

Pneumatic control valves (Type 3222/2780) using an actuator with preloaded springs are under tension. These control valves with SAMSON pneumatic actuators can be identified by the long bolts protruding from the bottom of the actuator.

⇨ *Before starting any work on the actuator, which requires the actuator to be opened, or when the actuator stem has become blocked, relieve the compression from the preloaded springs (see associated actuator documentation).*

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

– The control valve is put out of operation (see Chapter 10).

11.1 Removing the valve from the pipeline

1. Support the control valve to hold it in place when separated from the pipeline (see Chapter 4).
2. Depending on the type of end connection, undo the joint between the valve and pipeline (cut the weld seam, unbolt the flanged joint, undo the threaded joint).
3. Remove the valve from the pipeline (see Chapter 4).

11.2 Removing the actuator from the valve

See associated actuator documentation.

12 Repairs

If the control valve 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 valve 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:

1. Exceptions apply concerning some special device models ▶ www.samsongroup.com > SERVICE > After-sales Service > Returning goods.
2. Register the return shipment and include the following information by e-mail returns-de@samsongroup.com:
   - Type
   - Article no.
   - Configuration ID
   - Original order
   - Completed Declaration on Contamination, which can be downloaded from the Internet at: ▶ www.samsongroup.com > SERVICE > After-sales Service > Returning goods

   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 > After-sales Service*

13 Disposal

SAMSON is a producer registered in Europe, agency in charge
▶ www.samsongroup.com > About SAMSON > Environment, Social & Governance > Material Compliance > Waste electrical and electronic equipment (WEEE)
WEEE reg. no.: DE 62194439

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 SCIP number assigned to the devices concerned. This number 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 contained in the device.

Note

SAMSON can provide you with a recycling passport on request. Simply e-mail us at aftersalesservice@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.

⇨ Observe local, national and international refuse regulations.

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

14 Certificates

The certificates shown were up to date at the time of publishing. The latest certificates can be found on our website: ▶ www.samsongroup.com > Products > Valves > 3222

Other optional certificates are available on request.

These declarations are included on the next pages:

- Declaration of conformity in compliance with Pressure Equipment Directive 2014/68/EU:
- Declaration of conformity in compliance with Machinery Directive 2006/42/EC for Type 3222/2780 Control Valve consisting of Type 3222 Valve and Type 2780-1 or Type 2780-2 Actuator
- Declaration of conformity in compliance with Machinery Directive 2006/42/EC for Type 3222/XXXX-X Control Valve consisting of Type 3222 Valve and Type 5857, Type 5827, TROVIS 5757-X, TROVIS 5724-X or TROVIS 5725-X Actuator
- Declaration of incorporation in compliance with Machinery Directive 2006/42/EC for Type 3222 Valve with other actuators other than the above listed actuators

EU DECLARATION OF CONFORMITY
TRANSLATION

Module A

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

Devices	Series	Type	Version
Self-operated Regulators	43	2432	DIN EN, body, CC499K and EN-GJS-400-18-LT, DN 50, PN 25, fluids G2, L2, L1[1)]
	43	2436	DIN EN, body, CC499K and EN-GJS-400-18-LT, DN 50, PN 25, fluids G2, L2, L1[1)]
	43	2437	DIN EN, body, CC499K and EN-GJS-400-18-LT, DN 50, PN 25, fluids G2, L2, L1[1)]
	---	2111	DIN EN, body, EN-GJS-400-18-LT, DN 50, PN 25, fluids G2, L2, L1[1)]
			DIN EN, body, 1.0619 and 1.4408, DN 40-50, PN 40, fluids G2, L2, L1[1)]
			ANSI, body, A216 WCC and A351 CF8M, NPS 1½-2, Class 300, fluids G2, L2, L1[1)]
Three-way valve	---	2119	DIN EN, body, EN-GJL-250 and 1.0619, DN 65-125, PN 16, fluids G2, L2, L1[1)]
			DIN EN, body, 1.0619, DN 50-80, PN 25, fluids G2, L2, L1[1)]
			DIN EN, body, 1.0619 and 1.4408, DN 40-50, PN 40, fluids G2, L2, L1[1)]
			ANSI, body, A216 WCC and A351 CF8M, NPS 2½-4, Class 150, fluids G2, L2, L1[1)]
			ANSI, body, A216 WCC and A351 CF8M, NPS 1½, Class 300, fluids G2, L2, L1[1)]
Control valve	---	3222	DIN EN, body, EN-GJS-400-18-LT, DN 50, PN 25, fluids G2, L2, L1[1)]
			DIN EN, body, CC499K, DN 32-40, PN 25, all fluids
Three-way valve	---	3226	DIN EN, body, CC499K, DN 50, PN 25, fluids G2, L2[2)]
Three-way valve	---	3260	DIN EN, body, EN-GJL-250, DN 65-200, PN 16, fluids G2, L2[2)]
Globe valve Three-way valve	V2001	3531 3535	DIN EN, body, EN-GJS-400-18-LT, DN 50-80, PN 25, fluids G2, L2, L1[1)]
			DIN EN, body, 1.0619 and 1.4408, DN 32-40, PN 25, all fluids
			ANSI, body, A216 WCC and A351 CF8M, NPS 1½-2, Class 150, all fluids
Control valve	---	3214	DIN EN, body, EN-GJL-250, DN 65-125, PN 16, fluids G2, L2, L1[1)]
			DIN EN, body, EN-GJS-400-18-LT, DN 50-80, PN 25, fluids G2, L2, L1[1)]
			ANSI, body, A126 B, NPS 3-4, Class 125, fluids G2, L2, L1[1)]
			ANSI, body, A216 WCC and A351 CF8M, NPS 1½-2, Class 150, all fluids
Self-operated Regulators	42	2423	DIN EN, body, EN-GJL-250 and EN-GJS-400-18-LT, DN 65-125, PN 16, fluids G2, L2, L1[1)]
			DIN EN, body, EN-GJS-418-LT, DN 50-80, PN 25, fluids G2, L2, L1[1)]
			DIN EN, body, 1.0619 and 1.4408, DN 32-50, PN 16, all fluids
			DIN EN, body, 1.0619 and 1.4408, DN 32-40, PN 25, all fluids
			ANSI, body, A126 B, NPS 3-4, Class 125, fluids G2, L2, L1[1)]
			ANSI, body, A216 WCC and A351 CF8M, NPS 1½-2, Class 150, all fluids
	42	2422	DIN EN, body, EN-GJL-250 and EN-GJS-400-18-LT, DN 65-125, PN 16, fluids G2, L2, L1[1)]
			DIN EN, body, EN-GJS-400-18-LT, DN 50-80, PN 25, fluids G2, L2, L1[1)]
			DIN EN, body, 1.0619, 1.4408 and 1.6220+QT, DN 32-50, PN 16, all fluids
			ANSI, body, A126 B, NPS 3-4, Class 125, fluids G2, L2, L1[1)]
			ANSI, body, A216 WCC, A351 CF8M and A352 LCC, NPS 1½-2, Class 150, all fluids
Strainers	1N/1NI	2601	DIN EN, body, CB752S, G 2 (DN50), PN25, fluids G2, L2[2)]
Strainers	2N/2NI	2602	DIN EN, body, EN-GJL-250, DN 200-250, PN 10, fluids G2, L2, L1[1)]
			DIN EN, body, EN-GJL-250, DN 65-125, PN 16, fluids G2, L2, L1[1)]
			DIN EN, body, EN-GJS-400-18-LT, DN 100-125, PN 16, fluids G2, L2, L1[1)]
			DIN EN, body, EN-GJS-400-18-LT, DN 50-80, PN 25, fluids G2, L2, L1[1)]
			DIN EN, body, 1.4408, DN 32-50, PN 16, all fluids
Self-operated Regulators	---	2373/2375	ANSI, body, A995 4A and A995 5A, NPS 1½-2, Class 150, all fluids
	44	2440 (44-0B) 2441 (44-1B) 2446 (44-6B)	DIN EN, body, EN-GJS-400-18-LT, DN 50, PN 25, fluids G2, L2, L1[1)]
		2442 (44-2) 2443 (44-3) 2444 (44-4) 2447 (44-7) 2449 (44-9)	DIN EN, body, EN-GJS-400-18-LT and CC499K, DN 50, PN 25, fluids G2, L2, L1[1)]

EU DECLARATION OF CONFORMITY
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Devices	Series	Type	Version
Self-operated Regulators	45	2451 (45-1) 2452 (45-2) 2453 (45-3) 2454 (45-4) 2456 (45-6) 2459 (45-9)	DIN EN, body, EN-GJS-400-18-LT and CC499K, DN 50, PN 25, fluids G2, L2, L1[1)]
	46	2465 (46-5) 2466 (46-6) 2467 (46-7) 2469 (46-9)	DIN EN, body, EN-GJS-400-18-LT and CC499K, DN 50, PN 25, fluids G2, L2, L1[1)]
	47	2471 (47-1) 2474 (47-4) 2475 (47-5) 2479 (47-9)	DIN EN, body, EN-GJS-400-18-LT and CC499K, DN 50, PN 25, fluids G2, L2, L1[1)]
	48	2488 2489	DIN EN, body, EN-GJS-400-18-LT and CC499K, DN 50, PN 25, fluids G2, L2, L1[1)]
	40	2405	DIN EN, body, EN-GJS-400-18-LT, DN 50, PN 25, fluids G2, L2, L1[1)]
			ANSI, body, A216 WCC and A351 CF8M, NPS 1½-2, Class 150, all fluids
		2406	DIN EN, body, EN-GJL-250, DN 65-125, PN 16, fluids G2, L2, L1[1)]
			DIN EN, body, EN-GJS-400-18-LT, DN 50, PN 25, fluids G2, L2, L1[1)]
			ANSI, body, A126 B, NPS 3-4, Class 125, fluids G2, L2, L1[1)]
			ANSI, body, A216 WCC and A351 CF8M, NPS 1½-2, Class 150, all fluids
	41	2412 2417	DIN EN, body, EN-GJL-250, DN 65-100, PN 16, fluids G2, L2, L1[1)]
			DIN EN, body, EN-GJS-400-18-LT, DN 50-80, PN 25, fluids G2, L2, L1[1)]
			ANSI body, A126 B, NPS 3-4, Class 125, fluids G2, L2, L1[1)]
			ANSI, body, A216 WCC and A351 CF8M, NPS 1½-2, Class 150, all fluids
	42	2421 RS	DIN EN, body, 1.0619, 1.4408, 1.4571 and 1.4401/1.4404, DN 32-50, PN 16, all fluids
			DIN EN, body, 1.0619, 1.4408, 1.4571 and 1.4401/1.4404, DN 32-40, PN 25, all fluids
			ANSI, body, A216 WCC, A351 CF8M and A182 F316/A182 F316L, NPS 1½-2, Class 150, all fluids
	---	2331	DIN EN, body, EN-GJL-250, DN 65-200, PN 16, fluids G2, L2[2)]
			DIN EN, body, EN-GJS-400-18-LT, DN 65-150, PN 16, fluids G2, L2[2)]
			DIN EN, body, EN-GJS-400-18-LT, DN 65-125, PN 25, fluids G2, L2[2)]
			DIN EN, body 1.0619, DN 65-200, PN 16, fluids G2, L2[2)]
			DIN EN, body 1.0619, DN 65-100, PN 40, fluids G2, L2[2)]
	---	2337	DIN EN, body 1.0619, DN 250, PN 25, fluids L1[1)]
			DIN EN, body 1.0619, DN 250, PN 40, fluids L1[1)]
	---	2333 2335	DIN EN, body, EN-GJL-250, DN 65-125, PN 16, fluids G2, L2, L1[1)]
			DIN EN, body, EN-GJS-400-18-LT, DN 65-80, PN 25, fluids G2, L2, L1[1)]
			ANSI body, A126 B, NPS 3-4, Class 125, fluids G2, L2, L1[1)]
	---	2334	DIN EN, body, EN-GJL-250, DN 65-125, PN 16, fluids G2, L2, L1[1)]
			DIN EN, body, EN-GJS-400-18-LT, DN 65-125, PN 16, fluids G2, L2, L1[1)]
			DIN EN, body, EN-GJS-400-18-LT, DN 65-80, PN 25, fluids G2, L2, L1[1)]
			ANSI, body, A126 B, NPS 3-4, Class 125, fluids G2, L2, L1[1)]
	---	2404-1	DIN EN, body, EN-GJL-250, DN 65-125, PN16, fluids G2, L2, L1[1)]
			ANSI body, A126 B, NPS 3-4, Class 125, fluids G2, L2, L1[1)]
			ANSI, body, A216 WCC und A351 CF8M, NPS 1½-2, Class 150, all fluids
	---	2404-2	DIN EN, body, EN-GJL-250, DN 65-125, PN 16, fluids G2, L2, L1[1)]
			ANSI, body, A126 B, NPS 3-4, Class 125, fluids G2, L2, L1[1)]

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

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

EU DECLARATION OF CONFORMITY
TRANSLATION

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

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

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

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

Frankfurt am Main, 05. June 2024

ppa. Norbert Tollas
Senior Vice President
Global Operations

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

EU DECLARATION OF CONFORMITY
TRANSLATION

Module D / N° CE-0062-PED-D-SAM 001-22-DEU-rev-D

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

Devices	Series	Type	Version
Control valve for hot water and steam with fail-safe action in heating systems	Actuator 3374-25/-27 (Force 1800 N / 3000 N)		3374-25 with Type 3241, 42-36 E (2423E), 3374-27 with Type 3241, 3214 (2814), Certificate no.: 01 202 969/B-24-0010, type-tested according to standard DIN EN 14597:2015
Control valve for hot water and steam with fail-safe action in heating systems	Actuator 3374-21/-26 (Force 2000 N)		with Type 3241, 2811, 2814, 2823, 3321 EU-Type examination (production type), Module B, Certificate no.: 01 202 931/B-15-0030-01, type-tested according to standard DIN EN 14597:2015
Control valve for water and water-steam with fail-safe action in heating systems	Actuator 5725-310/-313/-320/-323 Actuator 5725-810/-820 Actuator 5825-10/-13/-20/-23 (Force 500 N) (Product number 2770)		with Type 3214 (2814), 2423 (2823), 3213 (2710), 3222 (2710), 2488 (2730), 2489 (2730) EU-Type examination (production type), Module B, Certificate no.: 01 202 641/B-19-0017-01 type-tested according to standard DIN EN 14597:2015, appendix DX
Control valve for water and water-steam with fail-safe action in heating systems	Actuator 5827-A11 5827-A12 5827-A14 5827-A15 5827-A21 5827-A22 5827-A24 5827-A25		with Type 3214 (2814), 2423 (2823), 3213 (2710), 3222 (2710), 2488 (2730), 2489 (2730) EU-Type examination (production type), Module B, Certificate no.: 01 202 641/B-19-0017-01 type-tested according to standard DIN EN 14597:2015, appendix DX
Safety shut-off device for gas burners and gas equipment	240	3241-G	Equipment for gas and pressure devices Shut-off valve, automatic, valve class D Type 3241-1-Gas and 3241-7-Gas, Material 1.0619 or 1.4408, soft-sealing with bellows, DN15 to DN150, PN40 Actuator 3271 or 3277 with 3/2-way solenoid valve, EU type examination (type), Module B, Certificate No.: CE-0062-PED-B3.1-SAM 001-24-DEU

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 D**	**Certificate-No.: N°CE-0062-PED-D-SAM 001-22-DEU-rev-D by Bureau Veritas 0062**

The manufacturer's quality management system is monitored by the following notified body:
Bureau Veritas Services SAS, 4 place des Saisons, 92400 Courbevoie, France

Applied harmonised standards and technical specifications: EN 12516-2, EN 12516-3, EN 12266-1, ASME B16.34, EN 60534-4, DIN EN 161:2013-04 (3241-G), DIN EN 16678:2016-02 (3241-G)

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

Frankfurt am Main, February 17, 2025

Dr. Andreas Widl
Chief Executive Officer (CEO)

Sebastian Krause
Vice President Product Development

Revision 13

EU DECLARATION OF CONFORMITY
TRANSLATION

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

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

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

EU DECLARATION OF CONFORMITY
TRANSLATION

Devices	Series	Type	Version
Self-operated Regulators	40	2405	DIN EN, body, 1.0619, 1.4571, 1.4404, 1.4408, 1.0460, DN 32-50, PN40, all fluids
			ANSI, body, A105, A182 F316L, A351 CF8M, A216 WCC, NPS 1½-2, Class 300, all fluids
		2406	DIN EN, body, EN-GJL-250, DN 150, PN 16, fluids G2, L2, L1[1)]
			DIN EN, body, 1.0619 and 1.4408, DN 32-150, PN 40, all fluids
			DIN EN, body, 1.0460 and 1.4404, DN 32-50, PN 40, all fluids
			ANSI, body, A126 B, NPS 6, Class 125, fluids G2, L2, L1[1)]
			ANSI, body, A216 WCC and A351 CF8M, NPS 2½-6, Class 150, all fluids
			ANSI, body, A216 WCC and A351 CF8M, NPS 1½-6, Class 300, all fluids
			ANSI, body, A105 and A182 F316L, NPS 1½-2, Class 300, all fluids
	41	2412 2417	DIN EN, body, EN-GJS-400-18-LT, DN 100, PN25, fluids G2, L2, L1[1)]
			DIN EN, body, 1.0619 and 1.4408, DN 32-100, PN 40, all fluids
			DIN EN, body, 1.0460, 1.4571 and 1.4404, DN 32-80, PN 40, all fluids
			ANSI, body, A216 WCC and A351 CF8M, NPS 2½-4, Class 150, all fluids
			ANSI, body, A216 WCC and A351 CF8M, NPS 1½-4, Class 300, all fluids
			ANSI, body, A105 and A182 F316L, NPS 1½-3, Class 300, all fluids
	---	2404-1	DIN EN, body, EN-GJL-250, DN 150, PN16, fluids G2, L2, L1[1)]
			DIN EN, body, 1.0619 und 1.4408, DN 32-150, PN 40, all fluids
			ANSI, body, A126 B, NPS 6, Class 125, fluids G2, L2, L1[1)]
			ANSI, body, A216 WCC und A351 CF8M, NPS 2½-6, Class 150, all fluids
			ANSI, body, A216 WCC und A351 CF8M, NPS 1½-6, Class 300, all fluids
	---	2404-2	DIN EN, body, EN-GJL-250, DN 150-400, PN 16, fluids G2, L2, L1[1)]
			DIN EN, body, 1.0619 und 1.4408, DN 65-400, PN 16, all fluids
			DIN EN, body, 1.0619 und 1.4408, DN 65-400, PN 40, all fluids
			ANSI, body, A126 B, NPS 6-16, Class 125, fluids G2, L2, L1[1)]
			ANSI, body, A216 WCC und A351 CF8M, NPS 2½-16, Class 150, all fluids
			ANSI, body, A216 WCC und A351 CF8M, NPS 2½-10, Class 300, all fluids
	---	2331	DIN EN, body, EN-GJL-250, DN 250, PN 16, fluids G2, L2[1)]
			DIN EN, body, 1.0619, DN 250, PN 16, fluids G2, L2[1)]
			DIN EN, body, 1.0619, DN 200-250, PN 25, fluids G2, L2[1)]
			DIN EN, body, 1.0619, DN 125-250, PN 40, fluids G2, L2[1)]
	---	2333 2335	DIN EN, body, EN-GJL-250, DN 150-400, PN 16, fluids G2, L2, L1[1)]
			DIN EN, body, EN-GJS-400-18-LT, DN 100-150, PN 25, fluids G2, L2, L1[1)]
			DIN EN, body, 1.0619 and 1.4408, DN 65-400, PN 16, all fluids
			DIN EN, body, 1.0619 and 1.4408, DN 200-400, PN 25, all fluids
			DIN EN, body, 1.0619 and 1.4408, DN 65-400, PN 40, all fluids
			ANSI, body, A126 B, NPS 6-16, Class 125, fluids G2, L2, L1[1)]
			ANSI, body, A216 WCC and A351 CF8M, NPS 2½-16, Class 150, all fluids
			ANSI, body, A216 WCC and A351 CF8M, NPS 2½-16, Class 300, all fluids
	---	2334	DIN EN, body, EN-GJL-250, DN 150-400, PN 16, fluids G2, L2, L1[1)]
			DIN EN, body, EN-GJS-400-18-LT, DN 150, PN 16, fluids G2, L2, L1[1)]
			DIN EN, body, EN-GJS-400-18-LT, DN 100-150, PN 25, fluids G2, L2, L1[1)]
			DIN EN, body, 1.0619 and 1.4408, DN 65-400, PN 16, all fluids
			DIN EN, body, 1.0619 and 1.4408, DN 200-400, PN 25, all fluids
			DIN EN, body, 1.0619 and 1.4408, DN 65-400, PN 40, all fluids
			ANSI, body, A126 B, NPS 6-16, Class 125, fluids G2, L2, L1[1)]
			ANSI, body, A216 WCC and A351 CF8M, NPS 2½-16, Class 150, all fluids
			ANSI, body, A216 WCC and A351 CF8M, NPS 2½-16, Class 300, all fluids
	---	2373 2375	DIN EN, body, 1.4469 and 1.4470, DN 32-50, PN 40, all fluids
			ANSI, body, A995 5A and A995 4A, NPS 1½-2, Class 300, all fluids
Strainers	2N/2NI	2602	DIN EN, body, EN-GJL-250, DN 150-250, PN 16, fluids G2, L2, L1[1)]
			DIN EN, body, EN-GJS-400-18-LT, DN 150, PN 16, fluids G2, L2, L1[1)]
			DIN EN, body, EN-GJS-400-18-LT, DN 100-150, PN 25, fluids G2, L2, L1[1)]
			DIN EN, body, 1.0619, DN 100-250, PN 16, all fluids

EU DECLARATION OF CONFORMITY
TRANSLATION

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

[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 manufafacturer's quality management system is monitored by the following notified body:
Bureau Veritas Services SAS, 4 place des Saisons, 92400 Courbevoie, France
Technical standards applied: DIN EN 12516-2, DIN EN 12516-3, ASME B16.34

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

Frankfurt am Main, 05. June 2024

ppa. Norbert Tollas
Senior Vice President
Global Operations

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

Revision 01

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 product:
Type 3222/2780 Pneumatic Control Valve consisting of Type 3222 Valve and Type 2780-1 and 2780-2 Actuator

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 3222/… Electric and Pneumatic Control Valves:
  Mounting and Operating Instructions EB 5866

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 of the valve and actuator 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, 08 September 2023

ppa.

Norbert Tollas
Senior Vice President
Global Operations

i. V. P.

Peter Scheermesser
Director
Product Maintenance & Engineered Products

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 product:

Type 3222/XXXX-X Electric Control Valve consisting of Type 3222 Valve and 5857, 5824, 5825, 5827, TROVIS 5757-X, TROVIS 5724-X or TROVIS 5725-X Actuator

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:

- Electric and Pneumatic Control Valves Type 3222/…:
  Mounting and Operating Instructions EB 5866

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 of the valve and actuator 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 September 2023

ppc.

Norbert Tollas
Senior Vice President
Global Operations

i. V. P.

Peter Scheermesser
Director
Product Maintenance and Engineered Products

Revision no. 00

DECLARATION OF INCORPORATION
TRANSLATION

Declaration of Incorporation in Compliance with Machinery Directive 2006/42/EC

For the following product:
Type 3222 Valve

We certify that the Type 3222 Valve is partly completed machinery as defined in the Machinery Directive 2006/42/EC and that the safety requirements stipulated in Annex I, 1.1.2, 1.1.3, 1.1.5, 1.3.2, 1.3.4 and 1.3.7 are observed. The relevant technical documentation described in Annex VII, part B has been compiled.

Products we supply must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of the Machinery Directive 2006/42/EC.

Operators are obliged to install the products observing the accepted industry codes and practices (good engineering practice) as well as the mounting and operating instructions. Operators must take appropriate precautions to prevent hazards that could be caused by the process medium and operating pressure in the valve as well as by the signal pressure and moving parts.

The permissible limits of application and mounting instructions for the products are specified in the associated mounting and operating instructions; the documents are available in electronic form on the Internet at www.samsongroup.com.

For product descriptions refer to:
- Type 3222/… Electric and Pneumatic Control Valves: Mounting and Operating Instructions EB 5866

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

Comments:
- See mounting and operating instructions for residual hazards.
- Also observe 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, 01 September 2023

i.V.

Stephan Giesen
Director
Product Management

i. V. P.

Peter Scheermesser
Director
Product Maintenance & Engineered Products

Revision no. 00

15 Appendix

15.1 After-sales service

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

E-mail contact

You can reach our after-sales service at the following e-mail address:
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 in product catalogs or on our website (▶ www.samsongroup.com).

Required specifications

Please submit the following details:

- Order number and position number in the order
- Type, model number, nominal size and valve version
- Pressure and temperature of the process medium
- Flow rate in m^3/h
- Bench range (e.g. 0.2 to 1 bar) or input signal of the actuator (e.g. 0 to 20 mA or 0 to 10 V)
- Is a strainer installed?
- Installation drawing

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