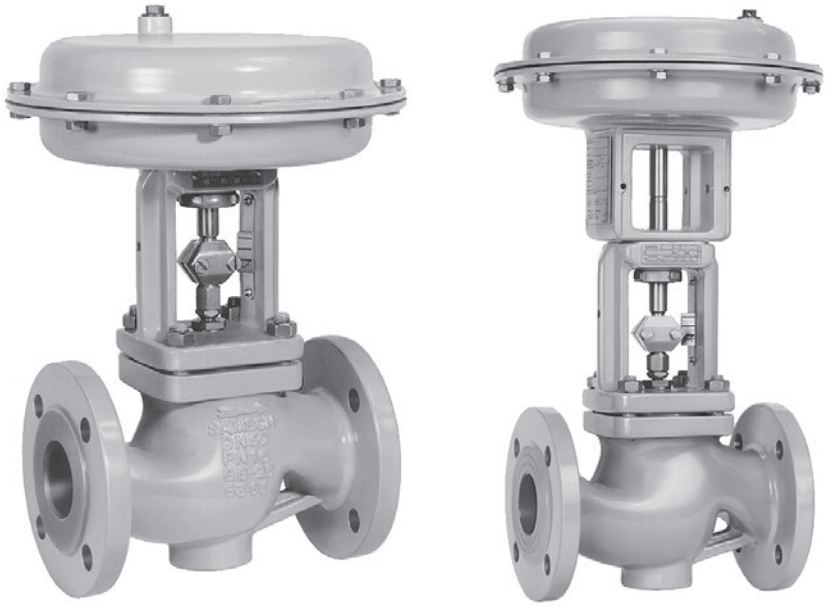
MOUNTING AND OPERATING INSTRUCTIONS

EB 8012 EN

Translation of original instructions



Type 3241 Valve with Type 3271 Actuator (left) and Type 3277 Actuator (right)

Type 3241 Valve · ANSI and JIS versions

In combination with an actuator,
e.g. a Type 3271 or Type 3277 Pneumatic Actuator

Edition May 2020

Note on these mounting and operating instructions

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

➔ For the safe and proper use of these instructions, read them carefully and keep them for later reference.

➔ If you have any questions about these instructions, contact SAMSON's After-sales Service (aftersalesservice@samsongroup.com).

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

Definition of signal words

⚠ DANGER

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

⚠ WARNING

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

NOTICE

Property damage message or malfunction

Note

Additional information

Tip

Recommended action

1 Safety instructions and measures

Intended use

The SAMSON Type 3241 Globe Valve in combination with an actuator (e.g. Type 3271 or Type 3277 Pneumatic Actuator) is designed to regulate the flow rate, pressure or temperature of liquids, gases or vapors. 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 other applications or conditions than specified, contact SAMSON.

SAMSON does not assume any liability for damage resulting from the failure to use the device for its intended purpose or for damage caused by external forces or any other external factors.

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

Reasonably foreseeable misuse

The control valve is not suitable for the following applications:

– Use outside the limits defined during sizing and by the technical data
– Use outside the limits defined by the valve accessories connected to the 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.

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

Personal protective equipment

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

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

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

Revisions and other modifications

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

Safety features

The 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 a SAMSON Type 3271 or Type 3277 Pneumatic Actuator, the valve moves to a certain fail-safe position (see the 'Design and principle of operation' section) upon supply air or control signal failure. The fail-safe action of the actuator is the same as its direction of action and is specified on the nameplate of SAMSON actuators.

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 safety instructions drawn up by the operator.

Responsibilities of the operator

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

The operator is 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 and regulations

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

Non-electric valve versions whose bodies are not lined with an insulating material coating do not have their own potential ignition source according to the risk assessment stipulated in EN 13463-1: 2009, section 5.2, even in the rare incident of an operating fault. Therefore, such valve versions do not fall within the scope of Directive 2014/34/EU.

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

Referenced documentation

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

– Mounting and operating instructions for the mounted actuator, e.g. ▶ EB 8310-X for Type 3271 or Type 3277 Pneumatic Actuator
– Mounting and operating instructions for mounted valve accessories (positioner, solenoid valve etc.)
– ▶ AB 0100 for tools, tightening torques and lubricant
– For oxygen service: Manual ▶ H 01
– Manual ▶ H 02: Appropriate Machinery Components for SAMSON Pneumatic Control Valves with a Declaration of Conformity of Final Machinery

1.1 Notes on possible severe personal injury

⚠ DANGER

Risk of bursting in pressure equipment.

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

➔ Observe the maximum permissible pressure for valve and plant.

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

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

1.2 Notes on possible personal injury

⚠ WARNING

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

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

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

➔ Wear protective clothing and safety gloves.

Risk of hearing loss or deafness due to loud noise.

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

➔ Wear hearing protection when working near the valve.

Risk of personal injury due to exhaust air being vented.

While the valve is operating, air is vented from the actuator, for example, during closed-loop operation or when the valve opens or closes.

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

➔ Use suitable silencers and vent plugs.

➔ Wear eye protection when working in close proximity to the control valve.

⚠ WARNING

Crush hazard arising from moving parts.

The control valve contains moving parts (actuator and plug stem), 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 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.

Risk of personal injury due to preloaded springs.

Valves in combination with pneumatic actuators 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, relieve the compression from the preloaded springs (see associated actuator documentation).

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

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

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

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

⚠ WARNING

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

Over time, markings, labels and nameplates on the 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 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.

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.

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

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

➔ Observe the specified tightening torques (▶ AB 0100).

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

Certain tools are required to work on the valve.

➔ Only use tools approved by SAMSON (▶ AB 0100).

NOTICE

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

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

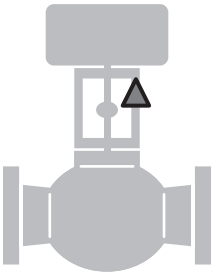
➔ Only use lubricants approved by SAMSON (▶ AB 0100).

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

➔ If necessary, keep the valve and the tools used free from solvents and grease.

➔ Make sure that only suitable lubricants are used.

1.4 Warnings on the device

Warning	Meaning of the warning	Location on the device
	Warning against moving parts There is a risk of injury to hands or fingers through the stroking movement of the actuator and plug stem if they are inserted into the yoke while the air supply is connected to the actuator.	

2 Markings on the device

2.1 Valve nameplate

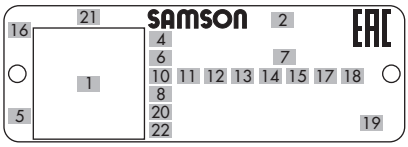


Fig. 2-1: *Inscriptions on the valve nameplate*

> **Note**
>
> *Fig. 2-1 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 3241 Valve actually appear on the nameplate.*

Item	Inscription meaning
1	Data Matrix code
2	Type designation
4	Material
5	Month and year of manufacture
6	Valve size: DIN: **DN** · ANSI: **NPS** · JIS: **DN**
7	Pressure rating: DIN: **PN** · ANSI: **CL** · JIS: **K**
8	Order number/item
10	Flow coefficient: DIN: **KV**S · ANSI: **CV**
11	Characteristic: **%**: equal percentage · **LIN**: linear **mod-lin**: modified linear
	NO/NC: on/off service
12	Seat-plug seal: **ME**: metal · **HA**: carbide metal · **ST**: metal base material with Stellite® facing **KE**: ceramic · **PT**: PTFE soft seal · **PK**: PEEK soft seal
13	Seat code (trim material): on request
14	Pressure balancing: DIN: **D** · ANSI/JIS: **B**
	Version: **M**: mixing valve · **V**: flow-diverting valve

Item	Inscription meaning
15	Noise reduction: **1**: flow divider (ST) 1 · **2**: ST 2 · **3**: ST 3 **1/PSA**: ST 1 standard and integrated in seat for PSA valve · **AC-1/AC-2/AC-3/AC-5**: AC trim, versions 1 to 5 **LK**: perforated plug · **LK1/LK2/LK3**: perforated plug with flow divider ST 1 to ST 3 · **MHC1**: multi-hole cage **CC1**: Combi Cage · **ZT1**: Zero Travel
16	Country of origin
17	PSA version: **PSA**
18	Cage/seat style: **CC**: clamped cage, clamped seat **SF**: suspended cage, flanged seat
19	CE marking
20	ID of the notified body
	PED: Pressure Equipment Directive
	G1/G2: gases and vapors Fluid group 1 = hazardous Fluid group 2 = other
	L1: liquids Fluid group 1 = hazardous Fluid group 2 = other
	I/II/III: Category 1 to 3
21	Serial number
22	NE 53 (NAMUR Recommendation)

The valve nameplate (80) in valve sizes NPS ½ to 6 is affixed to the flange (Fig. 2-2). The valve nameplate in valve sizes NPS 8 and larger is located on the yoke (Fig. 2-3).

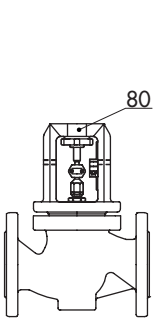


Fig. 2-2: *Nameplate on the flange*

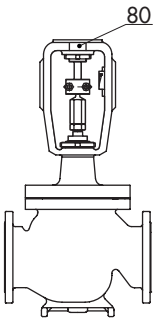


Fig. 2-3: *Nameplate on the yoke*

2.2 Actuator nameplate

See associated actuator documentation.

2.3 Material numbers

The seat and plug of the valves have an item number written on them. You can contact us stating this item number to find out which material is used. Additionally, a seat code is used to identify the trim material. This seat code is specified on the nameplate.

2.4 Label when an adjustable packing is installed

An instructional label is affixed to the valve when an adjustable packing is installed (see Fig. 2-4).

Fig. 2-4: *Label when an adjustable packing is installed*

3 Design and principle of operation

See Fig. 3-1 and Fig. 3-2 on page 3-2.

The Type 3241 Valve is a single-seated globe valve. This valve is preferably combined with a SAMSON Type 3271 or Type 3277 Pneumatic Actuator. It can also be combined with other actuators.

The seat (4) and plug with plug stem (5) are installed in the body (1). The plug stem is connected to the actuator stem (A7) by the stem connector clamps (A26) and is sealed by a spring-loaded V-ring packing (16). The springs in the pneumatic actuator (A) are located either above or below the diaphragm depending on the selected fail-safe action. A change in the signal pressure acting on the diaphragm causes the plug to move. The actuator size is determined by the diaphragm area.

The medium flows through the valve in the direction indicated by the arrow. A rise in signal pressure causes the force acting on the diaphragm in the actuator to increase. The springs are compressed. Depending on the selected direction of action, the actuator stem retracts or extends. As a result, the plug position in the seat changes and determines the flow rate through the valve.

Tip

We recommend the use of positioners with integrated diagnostic firmware (see section 3.4) for 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.

3.1 Fail-safe action

The fail-safe position of the control valve upon air supply or control signal failure depends on the actuator used (see associated actuator documentation).

Depending on how the compression springs are arranged in the SAMSON Type 3271 and Type 3277 Pneumatic Actuator, the valve has one of two different fail-safe positions:

– **Actuator stem extends (FA)**

  When the signal pressure is reduced or the air supply fails, the springs move the actuator stem downward and close the valve. The valve opens when the signal pressure is increased enough to overcome the force exerted by the springs.

– **Actuator stem retracts (FE)**

  When the signal pressure is reduced or the air supply fails, the springs move the actuator stem upwards and open the valve. The valve closes when the signal pressure is increased enough to overcome the force exerted by the springs.

Tip

The actuator's direction of action can be reversed, if required. Refer to the mounting and operating instructions of the pneumatic actuator:

▶ *EB 8310-X for Type 3271 and Type 3277*

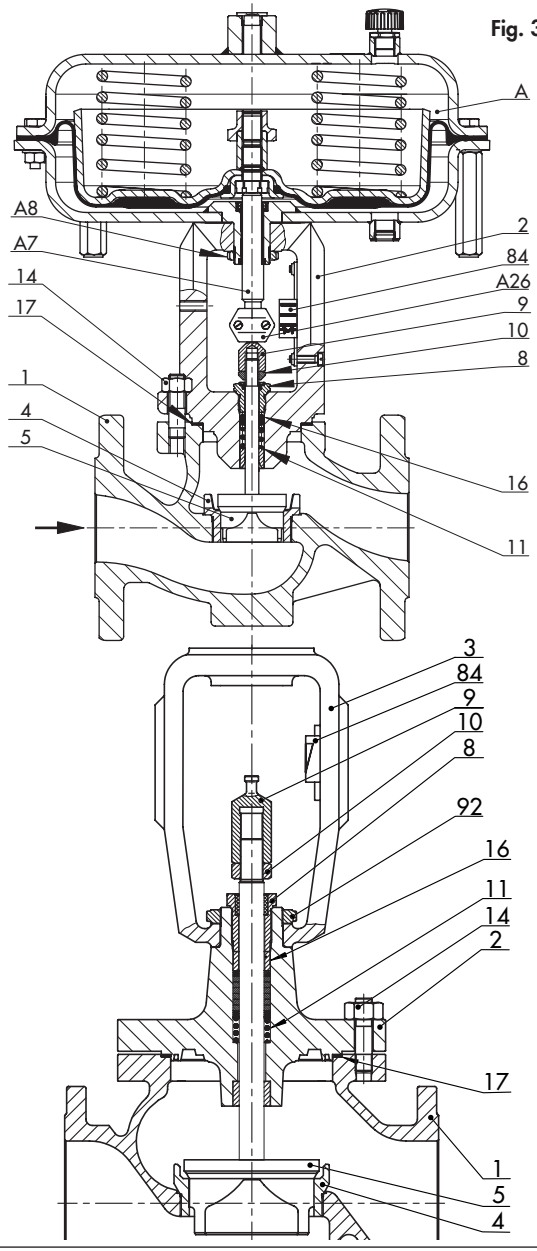


Fig. 3-1: *Type 3241-1 Control Valve with Type 3271 Pneumatic Actuator, body up to NPS 6*

1	Body
2	Flange
3	Yoke
4	Seat
5	Plug (with plug stem)
8	Threaded bushing (packing nut)
9	Stem connector nut
10	Lock nut
11	Spring
14	Nuts
16	Packing
17	Body gasket
84	Travel indicator scale
92	Castellated nut
A	Actuator
A7	Actuator stem
A8	Ring nut
A26	Stem connector clamps

Fig. 3-2: *Type 3241 Valve, body NPS 8 to 12*

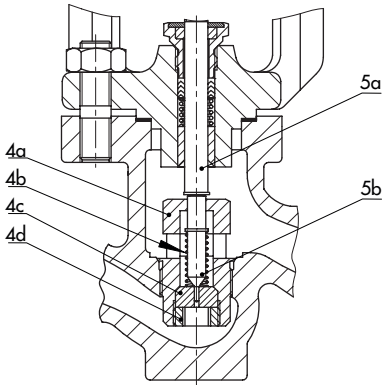
3.2 Versions

With insulating section/bellows seal

The modular design allows an insulating section or bellows seal to be fitted to the standard valve version.

Micro-flow valve version

In the micro-flow valve version, a micro-trim element is installed in the valve body instead of the usual seat/plug assembly (Fig. 3-3).



4a Seat body
4b Spring
4c Seat
4d Nut
5a Plug stem
5b Plug

Fig. 3-3: *Micro-trim element*

Actuators

In these instructions, the preferable combination with a SAMSON Type 3271 or Type 3277 Pneumatic Actuator is described. The pneumatic actuator (with or without handwheel) can be replaced by another pneumatic actuator in a different size, but with the same travel.

➔ Observe the maximum permissible actuator force.

Note

If the travel range of the actuator is larger than the travel range of the valve, the spring assembly in the actuator must be preloaded so that the travel ranges match. See associated actuator documentation.

The basic pneumatic actuator can be replaced by a pneumatic actuator with additional handwheel or by an electric actuator (see Information Sheet ▶ T 8300).

3.3 Additional fittings

Strainers

We recommend installing a SAMSON strainer upstream of the valve. It prevents solid particles in the process medium from damaging the valve.

Bypass and shut-off valves

We recommend installing a shut-off valve both upstream of the strainer and downstream of the 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.

Insulation

Control valves can be insulated to reduce heat energy transfer.

Refer to the instructions in the 'Installation' section.

Test connection

Versions with bellows seal fitted with a test connection (G ⅛) at the top flange allow the sealing ability of the bellows to be monitored.

Particularly for liquids and vapors, we recommend installing a suitable leakage indicator (e.g. a contact pressure gauge, an outlet to an open vessel or an inspection glass).

Safety guard

For operating conditions that require increased safety (e.g. in cases where the valve is freely accessible to untrained staff), a safety guard must be installed to rule out a crush hazard arising from moving parts (actuator and plug stem). Plant operators are responsible for deciding whether a guard is to be used. The decision is based on the risk posed by the plant and its operating conditions.

Noise reduction

Trims with flow dividers can be used to reduce noise emission (see ▶ T 8081).

3.4 Valve accessories

Information Sheet ▶ T 8350

3.5 Technical data

The nameplates on the valve and actuator provide information on the control valve version. See the 'Markings on the device' section.

Note

More information is available in Data Sheets ▶ T 8012 and ▶ T 8012-2.

Compliance

The Type 3241 Valve bears both the CE and EAC marks of conformity.

CE EAC

Temperature range

Depending on the version, the control valve is designed for a temperature range from –10 to +220 °C (14 to 428 °F). The use of an insulating section or bellows seal can extend the temperature range from –196 to +450 °C (–325 to +842 °F) depending on the properties of the materials used.

Leakage class

Depending on the version, the following leakage class applies:

Seal (12 on nameplate)	ME, ST	ME, ST	PT, PK
Pressure balancing (14 on nameplate)	–	D/B	–
Leakage class (according to ANSI/ FCI 70-2)	Min. IV	Min. IV	VI

Noise emissions

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

Dimensions and weights

Table 3-1 to Table 3-3 provide an overview of the dimensions and weights of the standard version of Type 3241 Valve. Table 3-4 and Table 3-5 list the dimensions and weights for the Type 3241 Valve with insulating section or bellows seal.

Dimensions in mm · Weights in kg

Table 3-1: *Dimensions of Type 3241 Valve, up to NPS 6 (DN 150)*

Valve			NPS	½	¾	1	1½	2	2½	3	4	6
			DN	15	20	25	40	50	65	80	100	150
			NPT	½	¾	1	1½	2	–	–	–	–
Length L [1]	Class 125 and 150		in	7.25	7.25	7.25	8.75	10.00	10.88	11.75	13.88	17.75
			mm	184	184	184	222	254	276	298	352	451
	Class 300		in	7.50	7.62	7.75	9.25	10.50	11.50	12.50	14.50	18.62
			mm	190	194	197	235	267	292	318	368	473
H1 for actuator	≤750 cm²		in	8.74			8.78		10.31		13.94	15.35
			mm	222			223		262		354	390
	1000 cm² 1400-60 cm²		in	–							16.26	17.72
			mm								413	450
	1400-120 cm² 2800 cm²		in	–								
			mm									
H2 for version	Cast steel		in	1.73	1.73	1.73	2.83	2.83	3.86	3.86	4.65	6.89
			mm	44	44	44	72	72	98	98	118	175
	Forged steel		in	2.1	–	2.76	3.62	3.86	–	5.05	–	–
			mm	53	–	70	92	98	–	128	–	–

[1] Face-to-face dimensions according to ANSI/ISA 75.08.01

Table 3-2: *Dimensions of Type 3241 Valve, NPS 8 (DN 200) and larger*

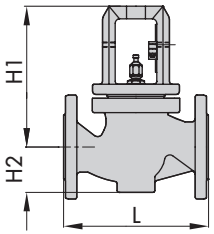
Valve		NPS	8	10	10	10	12
		DN	200	250/ (cast iron)	250 up to 200 mm seat bore	250 seat bore 250 mm and larger	300
Length L [1]	Class 125 and 150	in	21.38	26.50	26.50	26.50	29.00
		mm	543	673	673	673	737
	Class 300	in	22.38	27.88	27.88	27.88	30.50
		mm	568	708	708	708	775
H4		in	15.35	15.35	17.76	17.76	25.67
		mm	390	390	451	451	652
H8 [2] for actuator	1000 cm² 1400-60 cm²	in	16.46	16.46	16.46	19.80	19.80
		mm	418	418	418	503	503
	1400-120 cm² 2800 cm²	in	19.80	19.80	19.80	25.59	25.59
		mm	503	503	503	650	650
H2		in	9.65	10.63	12.20	12.20	14.57
		mm	245	270	310	310	370

1) Face-to-face dimensions according to ANSI/ISA 75.08.01
2) H8 increases by 6.69" (170 mm) for valves with C_V 290, 420 or 735 (K_{VS} 250, 360 or 630) and 60 mm rated travel operating with overtravel

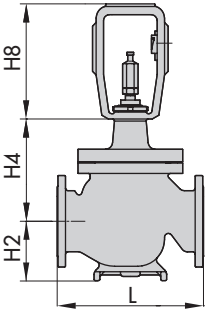
Table 3-3: *Weights for Type 3241 Valve*

Valve	NPS	½	¾	1	1½	2	2½	3	4	6	8	10	12
	DN	15	20	25	40	50	65	80	100	150	200	250	300
Weight without actuator	lbs	15	18	20	35	44	71	82	137	287	1096	1892	2535
	kg	7	8	9	16	20	32	37	62	130	497	858	1150

Dimensional drawings



Type 3241 · NPS ½ to 6 (DN 15 to 150)



Type 3241 · NPS 8 to 12 (DN 200 to 300)

Table 3-4: *Dimensions and weights for the Type 3241 Valve with insulating section or bellows seal up to NPS 6 (DN 150)*

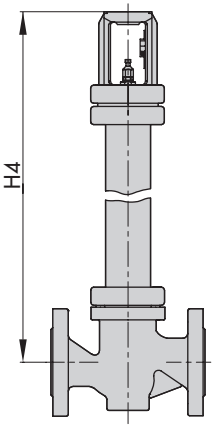
Valve size			NPS	½	¾	1	1½	2	2½	3	4	6
			DN	15	20	25	40	50	65	80	100	150
H4 for actuator	≤750 cm²	Insulating section or bellows seal	in	16.10			16.14		17.76		25.04	26.46
			mm	409			410		451		636	672
		Long	in	28.07			28.11		29.72		34.53	35.94
			mm	713			714		755		877	913
	1000 cm² 1400-60 cm²	Insulating section or bellows seal	in	–							27.36	28.82
			mm								695	732
		Long	in	–							36.85	38.31
			mm								936	973
	1400-120 cm²/ 2800 cm²	Insulating section or bellows seal	in	–								
			mm									
		Long	in	–								
			mm									

Valve size		NPS	½	¾	1	1½	2	2½	3	4	6
		DN	15	20	25	40	50	65	80	100	150
Weight without actuator (approx.)	Insulating section or bellows seal	lbs	22	24	26	49	57	88	99	176	353
		kg	10	11	12	22	26	40	45	80	160
	Long	lbs	31	33	35	57	66	97	108	194	370
		kg	14	15	16	26	30	44	49	88	168

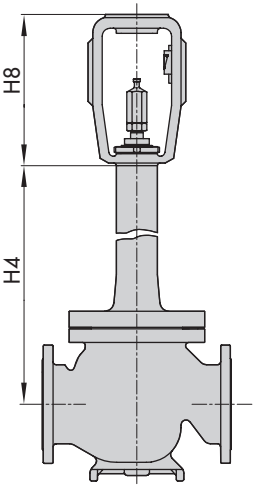
Table 3-5: *Dimensions and weights for the Type 3241 Valve with insulating section or bellows seal for NPS 8 (DN 200) and larger*

Version with			Insulating section				Bellows seal			
Valve size		NPS	8	10 up to 200 mm SB	10 SB 250 mm	12	8	10 up to 200 mm SB	10 SB 250 mm	12
		DN	200	250 up to 200 mm SB	250 SB 250 mm	300	200	250 up to 200 mm SB	250 SB 250 mm	300
H4 for actuator	1000 cm² 1400-60 cm²	in	32.7	41.9	–	45.3	40.8	58.7	–	59.8
		mm	830	1065	–	1150	1036	1492	–	1520
	1400-120 cm² 2800 cm²	in	32.7	41.9	41.9	45.3	40.8	58.7	58.7	59.8
		mm	830	1065	1065	1150	1036	1492	1492	1520
H8 for actuator	1000 cm² 1400-60 cm²	in	16.5	16.5	19.8	19.8	16.5	16.5	19.8	19.8
		mm	418	418	503	503	418	418	503	503
	1400-120 cm² 2800 cm²	in	19.8	19.8	25.6	25.6	19.8	19.8	25.6	25.6
		mm	503	503	650	650	503	503	650	650
Weight without actuator (approx.)		lbs	1191	2220	2220	2690	1312	2407	2407	2793
		kg	540	1007	1007	1220	595	1092	1092	1267

Dimensional drawings



Type 3241 with insulating section or bellows seal · NPS ½ to 6 (DN 15 to 150)



Type 3241 with insulating section or bellows seal · NPS 8 to 12 (DN 200 to 300)

Note

Refer to the following data sheets for more dimensions and weights:

- *T 8012 for ANSI valve versions with bellows seal, insulating section or heating jacket*
- *T 8012-2 for JIS valve versions with bellows seal, insulating section or heating jacket*

The associated actuator documentation applies to actuators, e.g. for SAMSON pneumatic actuators:

- *T 8310-1 for Type 3271 or Type 3277 Pneumatic Actuators up to 750 cm² actuator area*
- *T 8310-2 for Type 3271 Actuator with 1000 cm² actuator area and larger*
- *T 8310-3 for Type 3271 Actuator with 1400-60 cm² actuator area*

4 Shipment and on-site transport

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

4.1 Accepting the delivered goods

After receiving the shipment, proceed as follows:

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

4.2 Removing the packaging from the valve

Observe the following sequence:

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

➔ Leave the control valve in its transport container or on the pallet to transport it on site.

➔ Do not remove the protective caps from the inlet and outlet until immediately before installing the valve into the pipeline. They prevent foreign particles from entering the valve.

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

4.3 Transporting and lifting the valve

⚠ DANGER

Danger due to suspended loads falling.

➔ *Stay clear of suspended or moving loads.*

➔ *Close off and secure the transport paths.*

⚠ WARNING

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

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

⚠ WARNING

Risk of personal injury due to the control valve tipping over.

➔ *Observe the valve's center of gravity.*

➔ *Secure the valve against tipping over or turning.*

⚠ WARNING

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

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

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

NOTICE

Risk of valve damage due to incorrectly attached slings.

The lifting eyelet/eyebolt on SAMSON actuators is only intended for mounting and removing the actuator as well as lifting the actuator without valve. Do not use this lashing point to lift the entire control valve assembly.

➔ *When lifting the control valve, make sure that the slings attached to the valve body bear the entire load.*

➔ *Do not attach load-bearing slings to the actuator, handwheel or any other parts.*

➔ *Observe lifting instructions (see section 4.3.2).*

Tip

A swivel hoist can be screwed into SAMSON actuators with a female thread on the top diaphragm case in place of the eyebolt (see associated actuator documentation).
In contrast to the lifting eyelet/eyebolt, the swivel hoist is designed for setting a control valve assembly upright.
The sling between the swivel hoist and rigging equipment (hook, shackle etc.) must not bear any load when lifting a control valve assembly. The sling only protects the control valve from tilting while being lifted.

Tip

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

4.3.1 Transporting the valve

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

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

➔ Observe the transport instructions.

Transport instructions

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

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

– Protect the piping and any mounted valve accessories against damage.
– Protect the control valve against moisture and dirt.
– The permissible transportation temperature of standard control valves is –20 to +65 °C (–4 to +149 °F).

i ***Note***

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

4.3.2 Lifting the valve

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

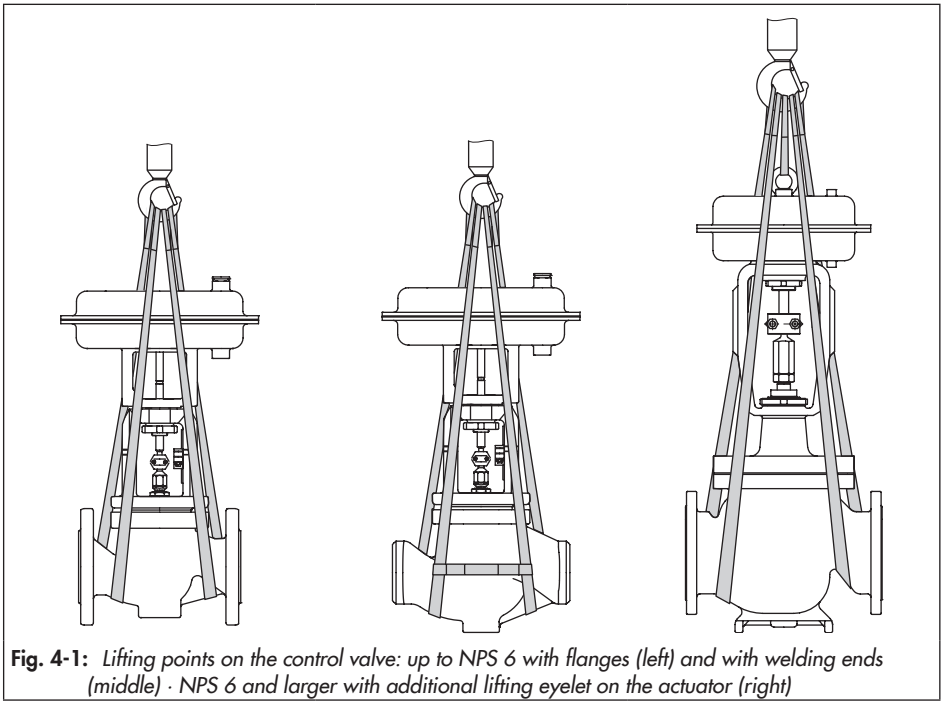


Fig. 4-1: *Lifting points on the control valve: up to NPS 6 with flanges (left) and with welding ends (middle) · NPS 6 and larger with additional lifting eyelet on the actuator (right)*

Lifting instructions

– Use a hook with safety latch (see Fig. 4-1) to secure the slings from slipping off the hook during lifting and transporting.
– Secure slings against slipping.
– Make sure the slings can be removed from the valve once it has been installed into the pipeline.
– Prevent the control valve from tilting or tipping over.
– Do not leave loads suspended when interrupting work for longer periods of time.
– Make sure that the axis of the pipeline is always horizontal during lifting and the axis of the plug stem is always vertical.
– Make sure that the additional sling between the lashing point on the actuator and rigging equipment (hook, shackle etc.) does not bear any load when lifting valves larger than NPS 6. The sling only protects the control valve from tilting while being lifted. Before lifting the control valve, tighten the sling.

a) Version with flanges

1. Attach one sling to each flange of the body and to the rigging equipment (e.g. hook) of the crane or forklift (see Fig. 4-1).
2. **NPS 6 and larger:** attach another sling to the lashing point on the actuator and to the rigging equipment.
3. Carefully lift the control valve. Check whether the lifting equipment and accessories can bear the weight.
4. Move the control valve at an even pace to the site of installation.
5. Install the valve into the pipeline (see the 'Installation' section).
6. After installation in the pipeline, check whether the flanges are bolted tight and the valve in the pipeline holds.
7. Remove slings.

b) Version with welding ends

1. Attach one sling to each welding end of the body and to the rigging equipment (e.g. hook) of the crane or forklift (see Fig. 4-1).
2. Secure the slings attached to the body against slipping using a connector.
3. **NPS 6 and larger:** attach another sling to the lashing point on the actuator and to the rigging equipment.
4. Carefully lift the control valve. Check whether the lifting equipment and accessories can bear the weight.
5. Move the control valve at an even pace to the site of installation.
6. Install the valve into the pipeline (see the 'Installation' section).
7. After installation, check whether the weld seams hold.
8. Remove connector and slings.

4.4 Storing the valve

NOTICE

Risk of valve damage due to improper storage.

➔ *Observe the storage instructions.*

➔ *Avoid long storage times.*

➔ *Contact SAMSON in case of different storage conditions or long storage periods.*

Note

We recommend regularly checking the control valve and the prevailing storage conditions during long storage periods.

Storage instructions

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

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

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

– 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.

– The permissible storage temperature of standard control valves is –20 to +65 °C (–4 to +149 °F). Contact our after-sales service for the storage temperatures of other valve versions.

– Do not place any objects on the control valve.

Special storage instructions for elastomers

Elastomer, e.g. actuator diaphragm

– To keep elastomers in shape and to prevent cracking, do not bend them or hang them up.

– We recommend a storage temperature of 15 °C (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 section is only to be performed 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

The inlet and outlet lengths (see Table 5-1) vary depending on several variables and process conditions and are intended as recommendations. Contact SAMSON if the lengths are significantly shorter than the recommended lengths.

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

➔ Observe the inlet and outlet lengths (see Table 5-1). Contact SAMSON if the valve conditions or states of the medium process deviate.

➔ Install the valve free of stress and with the least amount of vibrations as possible. Read 'Mounting position' and 'Support or suspension' in this section.

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

Mounting position

Generally, we recommend installing the valve with the actuator upright and on top of the valve.

In the following versions, the valve **must** be installed with the actuator on top:

– Valves in NPS 4 and larger
– Valves with insulating section or bellows seal for low temperatures below –10 °C (14 °F)

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

Support or 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 plugs

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). Further-

more, 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

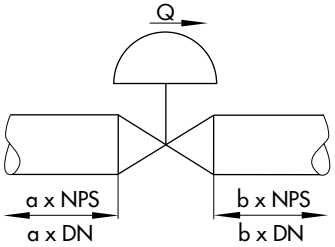
➔ During connection of valve accessories, make sure that they are easily accessible and can be operated safely from the work position.

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, valve size, material, pressure rating and temperature range) match the plant conditions (size and

Table 5-1: *Inlet and outlet lengths*



Q Flow rate
a Inlet length
b Outlet length

State of process medium	Valve conditions	Inlet length a	Outlet length b
Gas	Ma ≤ 0.3	2	4
	0.3 ≤ Ma ≤ 0.7	2	10
Vapor	Ma ≤ 0.3 [1]	2	4
	0.3 ≤ Ma ≤ 0.7 [1]	2	10
	Saturated steam (percentage of condensate > 5 %)	2	20
Liquid	Free of cavitation/w < 10 m/s	2	4
	Cavitation producing noise/w ≤ 3 m/s	2	4
	Cavitation producing noise/3 < w < 5 m/s	2	10
	Critical cavitation/w ≤ 3 m/s	2	10
	Critical cavitation/3 < w < 5 m/s	2	20
Flashing	–	2	20
Multi-phase	–	10	20

[1] No saturated steam

pressure rating of the pipeline, medium temperature etc.). See the 'Markings on the device' section for nameplate details.

– The requested or required additional pipe fittings (see the 'Additional fittings' section) have been installed or prepared as necessary before installing the valve.

NOTICE

Risk of control valve damage due to incorrect insulation.

➔ *Only insulate control valves with insulating section or bellows seal up to the bonnet flange of the valve body for medium temperatures below 0 °C (32 °F) and above 220 °C (428 °F). If the insulating section is insulated, it will not function properly.*

➔ *Do not insulate valves mounted to comply with NACE MR0175 requirements and which have nuts and bolts that are not suitable for sour gas environments.*

Proceed as follows:

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

➔ Flush the pipelines.

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 (▶ AB 0100). Components may loosen during transport.

5.3 Installing the device

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

NOTICE

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

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

➔ *Observe the specified tightening torques (▶ AB 0100).*

NOTICE

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

➔ *Only use tools approved by SAMSON (▶ AB 0100).*

5.3.1 Mounting the external anti-rotation fixture

Before mounting the actuator, the external anti-rotation fixture must be mounted onto the plug stem in some cases. The valve must be closed beforehand.

For SAMSON Type 3271 and Type 3277 Actuators with Type 3273 Hand-operated Actuator, observe the mounting and operating instructions of the hand-operated actuator (handwheel) to mount the anti-rotation fixture ▶ EB 8312-X.

Standard version for valve sizes DN 200/ NPS 8 and larger

See Fig. 5-1 and Fig. 5-2

1. Insert ball bearings (310) into the recesses in the bonnet.
2. Place the yoke (3) on the bonnet in such a way that the ball bearings fit into the recesses of the yoke.
3. Fasten the yoke (3) using the castellated nut (92).
4. Fasten the hanger (83) and warning label (255), if applicable, to the yoke using the screws (82).
5. Position the travel indicator scale (84) on the hanger (83) with the screws (85) according to Table 5-3.
6. Use a soft-faced hammer or lever press to press the slider disks (309) with their beveled part first (without using any lubricant) into the recesses of the clamps (301) as far as they will go. Remove any excess material.
7. Apply a thin film of lubricant (114) to the screws (303).

NOTICE

Impaired functioning due to incorrectly applied lubricant.

➔ *Do not apply any lubricant to the stem (9), plug stem or the threads of the clamps (301).*

8. Position the clamps (301) and stem (9) on the plug stem according to Table 5-3 and tighten screws (303) and washers (304) by hand.
9. Mount the actuator. See section 5.3.2.
10. Thread the stem (9) upwards until the head of the stem rests on the extended actuator stem.
11. Retract the actuator stem to relieve the stem (9).
12. Tighten the screws (303) gradually in a crisscross pattern. Observe the tightening torques specified in Table 5-2.

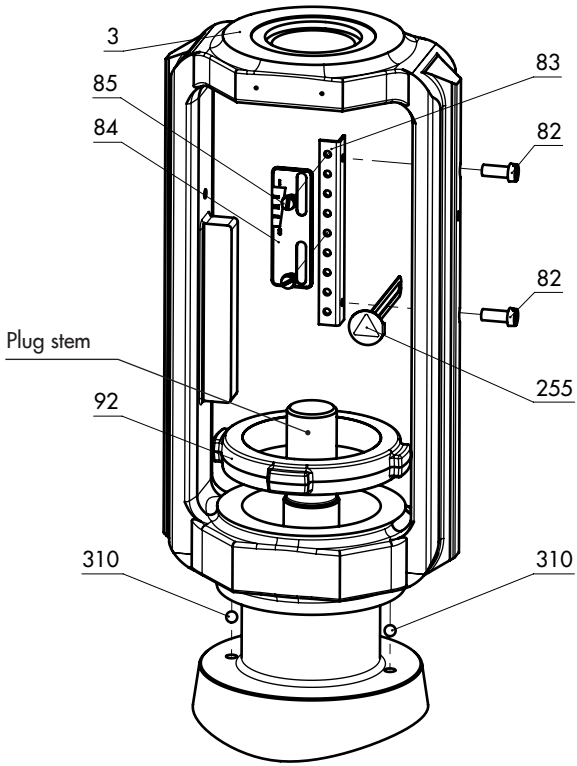
Table 5-2: *Tightening torques*

Screw size	Tightening torque [Nm]
M12	50
M16	121

13. Check and ensure the following points:
    – There is a nominal gap between 0.5 and 1 mm between the slider disks and their seating surface on the yoke on each side (see detailed view Y in Fig. 5-2).

– The anti-rotation fixture does not get stuck on the yoke and can move freely in the direction of travel.

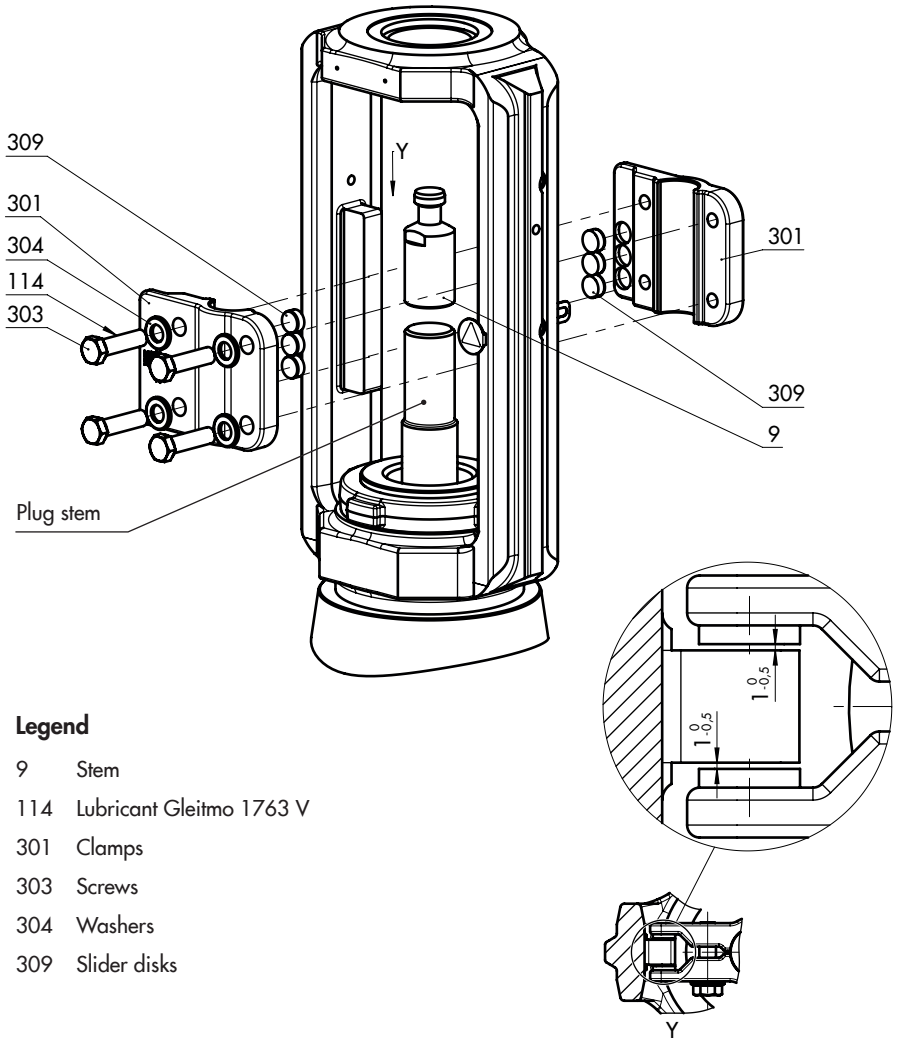
14. Extend the actuator stem again and mount the stem connector clamps.



Legend

3	Yoke
82	Screws
83	Hanger
84	Travel indicator scale
85	Screws
92	Castellated nut
255	Warning label
310	Ball bearing

Fig. 5-1: *Overview of yoke assembly with travel indicator scale*



Legend

9	Stem
114	Lubricant Gleitmo 1763 V
301	Clamps
303	Screws
304	Washers
309	Slider disks

Fig. 5-2: *Overview of anti-rotation fixture assembly*

Table 5-3: *Mounting dimensions for Types 3271 and 3277 Pneumatic Actuators · See Fig. 5-3 for dimensional drawing*

Actuator	Trav-el	Actuator preloading		Dimension when the valve is closed [mm]							
[cm²]	[mm]	[%]	[mm]	H_F	H_G	H_I	H_K	H_L	H_N	H_O	H_T
DN 200 to 250/NPS 8 to 10 up to seat bore 200 · Standard version											
355 700 750	30	0	0	241	90	195	87	61	108	65	120
1000 1400-60	30	0	0	211	120			66			83
	30	75	45	211	120			66			83
	60	0	0	166	165			52			55
	60	25	15	181	150			52			55
1400-120	15	87.5	105	236	180			61			115
	30	0	0	191	225			48			76
	30	75	90	221	195			61			100
	60	0	0	308	255			61			185
	60	50	60	191	225			48			76
2800 5600	30	0	0	191	225			48			76
	30	100	120	221	195			61			100
	60	0	0	308	255			61			185
	60	75	90	191	225			48			76
DN 250/NPS 10, seat bore 250 and DN 300 to 500/NPS 12 to 20 · Standard version											
1000 1400-60	30	0	0	281	135	237	87	100	150	110	121
	30	75	45	296	120						135
	60	0	0	251	165						91
	60	25	15	266	150						91
1400-120	60	0	0	308	255						145
	60	50	60	338	225						175
	120	0	0	278	285						FA [1] = 115 FE [2] = 86
2800 5600	60	0	0	308	255						145
	60	75	90	338	225						175
	120	0	0	248	315						FE [2] = 86
	120	25	30	278	285						115

1) FA = Actuator stem extends (fail-close)
2) FE = Actuator stem retracts (fail-open)

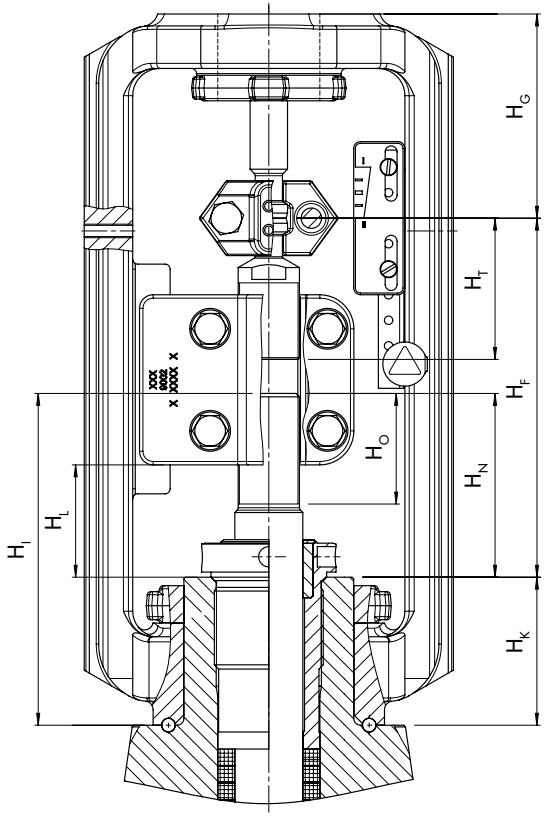


Fig. 5-3: *Dimensional drawing with mounting dimensions for Types 3271 and 3277 Pneumatic Actuators*

5.3.2 Mounting the actuator onto the valve

⚠ WARNING

Risk of personal injury due to preloaded springs.

Actuators with preloaded springs are under tension. They can be identified by the long bolts protruding from the bottom of the actuator.

➔ *Before starting any work on the actuator, 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.

Versions with V-port plug

To achieve the best flow conditions inside the valve, the V-port plug must always be installed with the port that releases the flow first when the valve opens facing toward the valve outlet. This is the largest of the three V-shaped ports (see Fig. 5-4).

➔ Before mounting the actuator, determine which V-shaped port is uncovered first when the plug is lifted out of the seat.

➔ On mounting the actuator, make sure that the V-shaped port uncovered first faces toward the valve outlet:

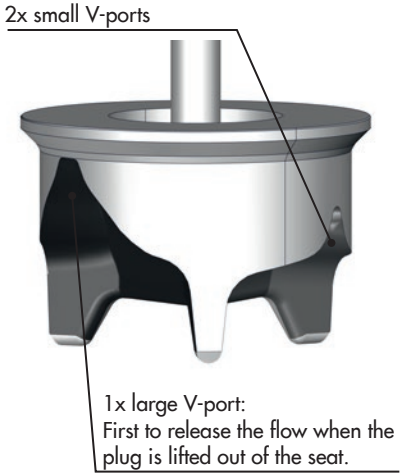


Fig. 5-4: *V-port plug*

Mounting dimensions for valves up to DN 150/NPS 6

The following mounting dimensions apply to Type 3241 Valves, NPS <8/DN <200:

Actuator size	Travel in mm	Dimension H_G in mm
120 to 750v2 cm²	15	75
355v2 to 1400-60 cm²	30	90

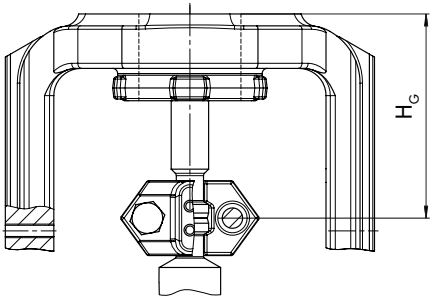


Fig. 5-5: *Stem connector/yoke dimension*

Mounting dimensions for Type 3241 Valves, NPS ≥8/DN ≥200 (see Table 5-3)

a) Mounting the actuator

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

b) Aligning the travel indicator scale

After mounting the actuator, the travel indicator scale must be aligned. To do so, align '0' on the travel indicator scale with the tip of the stem connector clamp (see Fig. 5-3).

1. Move the valve to the closed position.
2. Loosen the screws on the travel indicator scale.
3. Align the travel indicator scale.
4. Fix the travel indicator scale into place by tightening the screws.

5.3.3 Installing the valve into the pipeline

NOTICE

Premature wear and leakage due to insufficient support or suspension.

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

a) Version with flanges

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 the protective caps from the valve ports before installing the valve.
4. Lift the valve using suitable lifting equipment to the site of installation (see the 'Lifting the valve' section). Observe the flow direction through the valve. The arrow on the valve indicates the direction of flow.
5. Make sure that the correct flange gaskets are used.
6. Bolt the pipe to the valve free of stress.
7. Attach a support or suspension on the valve, if necessary.

b) Version with welding ends

1. Proceed as described above under 'Version with flanges', steps 1 to 4.
2. Completely retract the actuator stem to protect the plug from sparks during welding.
3. Weld the valve free of stress into the pipeline.
4. Attach a support or suspension on the valve, if necessary.

5.4 Testing the installed valve

DANGER

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

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 working on the control valve:

➔ *Depressurize all plant sections affected and the valve (including the actuator). Release any stored energy.*

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

⚠ WARNING

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

➔ *Do not loosen the screw of the test connection while the valve is pressurized.*

⚠ 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 fittings. Both can damage hearing.

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

⚠ WARNING

Crush hazard arising from actuator and plug stem moving.

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

➔ *Before working on the 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.

While the valve is operating, air is vented from the actuator, for example, during closed-loop operation or when the valve opens or closes.

➔ *Wear eye protection when working in close proximity to the control valve.*

⚠ WARNING

Risk of personal injury due to preloaded springs.

Actuators with preloaded springs are under tension. They can be identified by the long bolts protruding from the bottom of the actuator.

➔ *Before starting any work on the actuator, 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 (see information below under 'Adjusting the packing') and repeat the leak test.

Adjusting the packing

A label on the flange or yoke indicates whether an adjustable packing is installed (see the 'Markings on the device' section).

NOTICE

Impaired valve functioning due to increased friction as a result of the threaded bushing being tightened too far.

➔ *Make sure that the plug stem can still move smoothly after the threaded bushing has been tightened.*

1. Tighten the threaded bushing gradually (by turning it clockwise) until the packing seals the valve.
2. Open and close the valve several times.
3. Check the valve for leakage to the atmosphere.
4. Repeat steps 1 and 2 until the packing completely seals the valve.

➔ If the adjustable packing does not seal properly, contact our after-sales service.

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 while observing the movement of the actuator stem.

➔ Check the travel reading at the travel indicator scale.

5.4.3 Fail-safe position

➔ Shut off the signal pressure line.

➔ Check whether the valve moves to the fail-safe position (see the 'Design and principle of operation' section).

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 section is only to be performed by personnel appropriately qualified to carry out such tasks.

⚠ WARNING

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

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

- ➔ *Allow components and pipelines to cool down or heat up.*
- ➔ *Wear protective clothing and safety gloves.*

⚠ WARNING

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

- ➔ *Do not loosen the screw of the test connection while the valve is pressurized.*

⚠ 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 brief loud noise may occur through the sudden venting of the pneumatic actuator (see 'Fail-safe position') or pneumatic valve accessories not fitted with noise-reducing fittings. Both can damage hearing.

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

⚠ WARNING

Crush hazard arising from actuator and plug stem moving.

- ➔ *Do not insert hands or finger into the yoke while the air supply is connected to the actuator.*
- ➔ *Before working on the 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.

While the valve is operating, the actuator, for example, may vent during closed-loop operation or when the valve opens or closes.

- ➔ *Wear eye protection when working in close proximity to the control valve.*

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

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

Start-up/putting the valve 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 can 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 or cold components and pipeline.

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

- ➔ *Allow components and pipelines to cool down or heat up.*
- ➔ *Wear protective clothing and safety gloves.*

⚠ WARNING

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

- ➔ *Do not loosen the screw of the test connection while the valve is pressurized.*

⚠ 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 fittings. Both can damage hearing.

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

⚠ WARNING

Crush hazard arising from actuator and plug stem moving.

- ➔ *Do not insert hands or finger into the yoke while the air supply is connected to the actuator.*
- ➔ *Before working on the 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.

While the valve is operating, the actuator, for example, may vent during closed-loop operation or when the valve opens or closes.

- ➔ *Wear eye protection when working in close proximity to the control valve.*

7.1 Normal operation

The handwheel of valves with actuators fitted with a handwheel must be in the neutral position during normal operation.

7.2 Manual operation

Valves with actuators fitted with a handwheel can be manually closed or opened in case of supply air failure.

8 Malfunctions

Read hazard statements, warnings and caution notes in the 'Safety instructions and measures' section.

8.1 Troubleshooting

Malfunction	Possible reasons	Recommended action
Actuator and plug stem does not move on demand.	Actuator is blocked.	Check attachment. 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. Before unblocking the actuator, release any stored energy in the actuator (e.g. spring compression). See associated actuator documentation.
	Diaphragm in the actuator defective	See associated actuator documentation.
	Signal pressure too low	Check the signal pressure. Check the signal pressure line for leakage.
Jolting movement of the actuator and plug stem	Packing tightened too far	Tighten the packing correctly (see information under 'Adjusting the packing' in the 'Testing the installed valve' section).
Actuator and plug stem does not stroke through the entire range.	Signal pressure too low	Check the signal pressure. Check the signal pressure line for leakage.
	Travel stop active	See associated actuator documentation.
	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, particularly with soft seat, is worn.	Replace seat and plug (see the 'Servicing' section) or contact our after-sales service.

Malfunction	Possible reasons	Recommended action
The valve leaks to the atmosphere (fugitive emissions).	Defective packing	Replace packing (see the 'Servicing' section) or contact our after-sales service.
	Version with adjustable packing [1]: packing not tightened correctly	Adjust the packing (see information under 'Adjusting the packing' in the 'Testing the installed valve' section). Contact our after-sales service when it continues to leak.
	Version with bellows seal: the bellows seal is defective.	Contact our after-sales service.
	Flange joint loose or gasket worn out	Check the flange joint. Replace gasket at the flanged joint (see the 'Servicing' section) or contact our after-sales service.

[1] See the 'Markings on the device' section.

Note

Contact our after-sales service for malfunctions not listed in the table.

8.2 Emergency action

The plant operator is 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 section 8.1).
3. Rectify those malfunctions that can be remedied based on the instructions provided here. Contact our after-sales service in all other cases.

Putting the valve back into operation after a malfunction

See the 'Start-up' section.

9 Servicing

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

The following documents are also necessary for servicing the valve:

– Mounting and operating instructions for the mounted actuator, e.g. ▶ EB 8310-X for Type 3271 or Type 3277 Pneumatic Actuator
– ▶ AB 0100 for tools, tightening torques and lubricant

⚠ DANGER

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

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 working on the control valve:

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

⚠ WARNING

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

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

➔ *Allow components and pipelines to cool down or heat up.*
➔ *Wear protective clothing and safety gloves.*

⚠ WARNING

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

➔ *Do not loosen the screw of the test connection while the valve is pressurized.*

⚠ 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 fittings. Both can damage hearing.

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

⚠ WARNING

Crush hazard arising from actuator and plug stem moving.

➔ *Do not insert hands or finger into the yoke while the air supply is connected to the actuator.*
➔ *Before working on the 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.

While the valve is operating, the actuator, for example, may vent during closed-loop operation or when the valve opens or closes.

➔ *Wear eye protection when working in close proximity to the control valve.*

⚠ WARNING

Risk of personal injury due to preloaded springs.

Actuators with preloaded springs are under tension. They can be identified by the long bolts protruding from the bottom of the actuator.

➔ *Before starting any work on the actuator, 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 medium can flow out of the valve and, depending on its properties, cause personal injury, e.g. (chemical) burns.

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

NOTICE

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

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

➔ *Observe the specified tightening torques (▶ AB 0100).*

NOTICE

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

➔ *Only use tools approved by SAMSON (▶ AB 0100).*

NOTICE

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

➔ *Only use lubricants approved by SAMSON (▶ AB 0100).*

Note

The control valve was checked by SAMSON before it left the factory.

- *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 valve at certain intervals to prevent a possible failure before it can occur. Operators are responsible for drawing up an inspection and test plan.

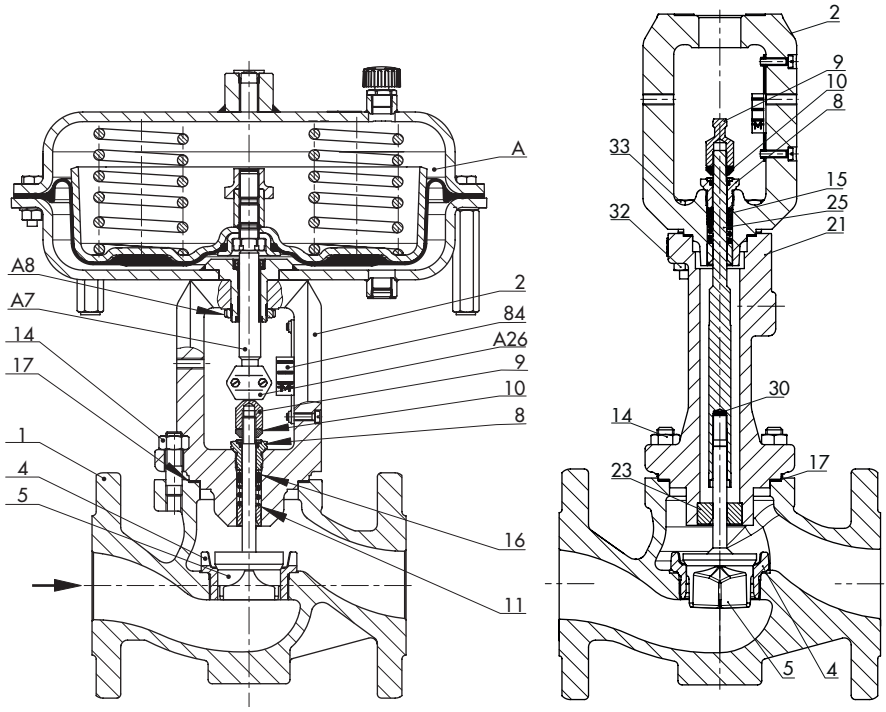
Tip

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

We recommend the following inspection and testing which can be performed while the process is running:

Inspection and testing	Action to be taken in the event of a negative result:
Check the markings, labels and nameplates on the 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.

Inspection and testing	Action to be taken in the event of a negative result:
Check the pipe connections and gaskets on the valve and actuator for leakage.	Check the bolted joint (tightening torque).
	Replace the gasket on the flanged joint as described in section 9.4.
	Adjust the packing (see information under 'Adjusting the packing' in the 'Testing the installed valve' section) or replace it (see section 9.4).
Check the test connection and bellows seal (if used) for external leakage. **WARNING!** Risk of personal injury due to pressurized components and process medium being discharged. Do not loosen the screw of the test connection while the valve is pressurized.	Put the control valve out of operation (see the 'Decommissioning' section). To repair the bellows section, contact our after-sales service (see the 'Repairs' section).
Check the valve's 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.
	Replace the seat and plug (see section 9.4)
Check the valve for external damage (e.g. corrosion).	Remove any damage immediately. If necessary, put the control valve out of operation (see the 'Decommissioning' section).
Check the valve accessories to ensure they are mounted properly.	Tighten the connections of the valve accessories.
Check to ensure that the actuator and plug stem move smoothly.	Tighten the packing correctly (see information under 'Adjusting the packing' in the 'Testing the installed valve' section).
	Unblock a blocked actuator and plug stem. **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. Before unblocking the actuator, release any stored energy in the actuator (e.g. spring compression). See associated actuator documentation.
If possible, check the valve's fail-safe position by briefly interrupting the air supply.	Put the control valve out of operation (see the 'Decommissioning' section). Identify the cause for the malfunction and rectify it (see the 'Troubleshooting' section).



1	Body	21	Insulating section
2	Flange/valve bonnet	23	Guide bushing
4	Seat	25	Plug stem extension
5	Plug (with plug stem)	30	Retaining washers
8	Threaded bushing (packing nut)	32	Bolt
9	Stem connector nut	33	Nut
10	Lock nut	84	Travel indicator scale
11	Spring	A	Actuator
14	Body nut	A7	Actuator stem
15	Packing	A8	Ring nut
16	Packing rings	A26	Stem connector clamps
17	Body gasket		

Fig. 9-1: *Standard version of Type 3241 with Type 3271 Actuator (left) and Type 3241 in version with insulating section (right)*

9.2 Preparing the valve for service work

1. Lay out the necessary material and tools to have them ready for the service work.
2. Put the control valve out of operation (see the 'Decommissioning' section).
3. Remove the actuator from the valve. See associated actuator documentation.

Note

To remove an actuator with "stem extends" fail-safe action and/or with preloaded springs, a certain signal pressure must be applied to the actuator (see associated actuator documentation). Afterwards, the signal pressure must be removed and the air supply disconnected again and locked.

Tip

We recommend removing the valve from the pipeline before performing any service work (see the 'Removal' section).

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

– Replacing the gasket (see section 9.4.1)
– Replacing the packing (see section 9.4.2)
– Replacing the seat and plug (see section 9.4.3)

9.3 Mounting the valve after service work

1. Mount actuator. See associated actuator documentation.
2. Adjust lower or upper signal bench range. See associated actuator documentation.
3. If the valve has been removed, re-install the valve into the pipeline (see the 'Installation' section).
4. Put the control valve back into operation (see the 'Start-up' section). Observe the requirements and conditions for start-up or putting the valve back into operation.

9.4 Service work

➔ Before performing any service work, preparations must be made to the control valve (see section 9.2).

➔ After all service work is completed, check the control valve before putting it back into operation (see 'Testing the installed valve' in the 'Installation' section).

9.4.1 Replacing the gasket

NOTICE

Risk of control valve damage due to incorrect servicing.

➔ *The gasket can only be replaced when all the following conditions are met:*
- *The valve size is ≤NPS 6.*
- *The valve does not have a balanced plug.*

➔ *To replace the gasket in other valve versions, contact our after-sales service.*

a) Standard version

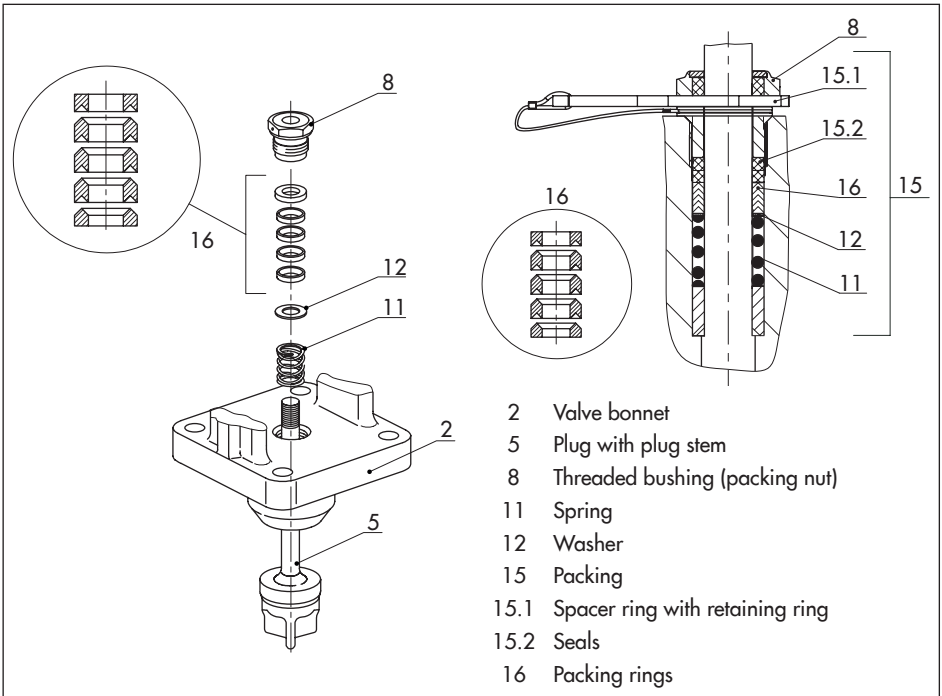
1. Undo the body nuts (14) gradually in a crisscross pattern.
2. Lift the flange (2) and plug with plug stem (5) off the body (1).
3. Remove the gasket (17). Carefully clean the sealing faces in the valve body (1) and on the flange (2).
4. Insert a new gasket (17) into the body.
5. Place the flange (2) onto the body.

   Version with V-port plug: place the flange (2) onto the valve body, making sure that the largest V-shaped port of the V-port plug faces towards the valve outlet.
6. Firmly press the plug (5) into the seat (4). Fasten down the flange (2) with the body nuts (14). Tighten the nuts gradually in a crisscross pattern. Observe tightening torques.

b) Version with insulating section or bellows seal

1. Undo the body nuts (14) gradually in a crisscross pattern.
2. Lift the insulating section (21) with valve bonnet (2) and plug with plug stem (5) off the body (1).
3. Remove the gasket (17). Carefully clean the sealing faces in the valve body (1) and on the insulating section (21).
4. Insert a new gasket (17) into the body.
5. Place the insulating section (21) with valve bonnet (2) and plug with plug stem (5) onto the body.

   Version with V-port plug: place the assembly onto the valve body, making sure that the largest V-shaped port of the V-port plug faces towards the valve outlet.
6. Firmly press the plug (5) into the seat (4). Fasten down the insulating section (21) with the body nuts (14). Tighten the nuts gradually in a crisscross pattern. Observe tightening torques.



2 Valve bonnet
5 Plug with plug stem
8 Threaded bushing (packing nut)
11 Spring
12 Washer
15 Packing
15.1 Spacer ring with retaining ring
15.2 Seals
16 Packing rings

Fig. 9-2: *Standard packing (left) and ADSEAL packing (right)*

9.4.2 Replacing the packing

NOTICE

Risk of control valve damage due to incorrect servicing.

➔ *The packing can only be replaced when all the following conditions are met:*
- *The valve size is ≤NPS 6.*
- *The valve does not have a balanced plug.*
- *The valve does not have a bellows seal.*
- *The standard or ADSEAL packing is installed in the valve.*

➔ *To replace the packing in other valve versions, contact our after-sales service.*

a) Standard version

Standard packing (PTFE)

1. Undo the body nuts (14) gradually in a crisscross pattern.
2. Lift the flange (2) and plug with plug stem (5) off the body (1).
3. Unthread the stem connector nut (9) and lock nut (10) from the plug stem.
4. Unscrew the threaded bushing (8).

5. Pull the plug with plug stem (5) out of the flange (2).
6. Pull the entire packing out of the packing chamber using a suitable tool.
7. Renew damaged parts. Clean the packing chamber thoroughly.
8. Apply a suitable lubricant to all the packing parts and to the plug stem (5).
9. Slide the plug with plug stem (5) into the valve body (1).
10. Place the flange (2) onto the body.

    Version with V-port plug: place the flange (2) onto the valve body, making sure that the largest V-shaped port of the V-port plug faces towards the valve outlet.
11. Carefully slide the packing parts over the plug stem into the packing chamber using a suitable tool. Observe the proper sequence (see Fig. 9-2).
12. Firmly press the plug (5) into the seat (4). Fasten down the flange (2) with the body nuts (14). Tighten the nuts gradually in a crisscross pattern. Observe tightening torques.
13. Screw in the threaded bushing (8) and tighten it. Observe tightening torques.
14. Loosely screw the lock nut (10) and stem connector nut (9) onto the plug stem.

ADSEAL packing

1. Proceed as described in 'Standard packing (PTFE)', steps 1 to 10.
2. Slide the parts of the packing over the plug stem in the specified order:
   - Spring (11)
   - Washer (12)
   - Packing rings (16)
3. Slide the seals (15.2) over the plug stem. Insert the wire of the red spacer ring (15.1) into the groove of the retaining ring.
   Slide the retaining ring over the plug stem.
4. Insert the red spacer ring (15.1) between the threaded bushing (8) and retaining ring. See Fig. 9-2.
5. Proceed as described in 'Standard packing (PTFE)', steps 12 to 14.

b) Version with insulating section

Standard packing (PTFE)

1. Unthread the stem connector nut (9) and lock nut (10) from the plug stem extension (25).
2. Unscrew the threaded bushing (8).
3. Remove nuts (33) and bolts (32).
4. Carefully lift the valve bonnet (2) over the plug stem extension (25).
5. Pull the entire packing out of the packing chamber using a suitable tool.
6. Renew the damaged parts and carefully clean the packing chamber.
7. Apply a suitable lubricant to all the packing parts and to the plug stem extension (25).

8. Carefully lift the valve bonnet (2) over the plug stem extension (25) onto the insulating section (21).
   Version with V-port plug: place the valve bonnet (2) onto the insulating section, making sure that the largest V-shaped port of the V-port plug faces towards the valve outlet.
9. Carefully slide the packing parts over the plug stem extension into the packing chamber using a suitable tool. Observe the proper sequence (see Fig. 9-2).
10. Fasten the valve bonnet with nuts (33) and bolts (32). Observe tightening torques.
11. Screw in the threaded bushing (8) and tighten it. Observe tightening torques.
12. Loosely screw the lock nut (10) and stem connector nut (9) onto the plug stem.

ADSEAL packing

1. Proceed as described in 'Standard packing (PTFE)', steps 1 to 8.
2. Slide the parts of the packing over the plug stem extension in the specified order:
   – Spring (11)
   – Washer (12)
   – Packing rings (16)
3. Slide the seals (15.2) over the plug stem extension.
   Insert the wire of the red spacer ring (15.1) into the groove of the retaining ring.
   Slide the retaining ring over the plug stem extension.
4. Insert the red spacer ring (15.1) between the threaded bushing (8) and retaining ring. See Fig. 9-2.
5. Proceed as described in 'Standard packing (PTFE)', steps 10 to 12.

9.4.3 Replacing the seat and plug

NOTICE

Risk of control valve damage due to incorrect servicing.

➔ *Seat and plug can only be replaced when all the following conditions are met:*
   – *The valve size is ≤NPS 6.*
   – *The valve does not have a balanced plug.*
   – *The valve does not have a bellows seal.*
   – *The standard or ADSEAL packing is installed in the valve.*

➔ *To replace seat and plug in other valve versions, contact our after-sales service.*

NOTICE

Risk of damage to the facing of the seat and plug due to incorrect servicing.

➔ *Always replace both the seat and plug.*

Tip

When replacing the seat and plug, we also recommend replacing the packing (see section 9.4.2).

a) Standard version

1. Undo the body nuts (14) gradually in a crisscross pattern.
2. Lift the flange (2) and plug with plug stem (5) off the body (1).
3. Replacing the gasket. See section 9.4.1, part a).
4. Unthread the stem connector nut (9) and lock nut (10) from the plug stem.
5. Unscrew the threaded bushing (8).
6. Pull the plug with plug stem (5) out of the flange (2).
7. Pull the entire packing out of the packing chamber using a suitable tool.
8. Unscrew the seat (4) using a suitable tool.
9. Apply a suitable lubricant to the thread and the sealing cone of the new seat.
10. Screw in the seat (4). Observe tightening torques.
11. Apply a suitable lubricant to all the packing parts and to the new plug stem (5). We recommend replacing the packing as well. See section 9.4.2, part a).
12. Slide the new plug with plug stem (5) into the valve body (1).
13. Place the flange (2) onto the body. **Version with V-port plug:** place the flange (2) onto the valve body, making sure that the largest V-shaped port of the V-port plug faces towards the valve outlet.
14. Carefully slide the packing parts over the plug stem into the packing chamber using a suitable tool. Observe the proper sequence (see Fig. 9-2).
15. Firmly press the plug (5) into the seat (4). Fasten down the flange (2) with the body nuts (14). Tighten the nuts gradually in a crisscross pattern. Observe tightening torques.
16. Screw in the threaded bushing (8) and tighten it. Observe tightening torques.
17. Loosely screw the lock nut (10) and stem connector nut (9) onto the plug stem.

b) Version with insulating section

1. Unthread the stem connector nut (9) and lock nut (10) from the plug stem extension (25).
2. Unscrew the threaded bushing (8).
3. Remove nuts (33) and bolts (32).
4. Carefully lift the valve bonnet (2) over the plug stem extension (25).
5. Pull the entire packing out of the packing chamber using a suitable tool.
6. Undo the body nuts (14) gradually in a crisscross pattern.
7. Lift the insulating section (21) together with the plug stem extension (25), plug stem and plug (5) off the body (1).
8. Replacing the gasket. See section 9.4.1, part b).
9. Make sure that the guide bushing (23) is not damaged. If necessary, replace the guide bushing using a suitable tool.

10. Unscrew the seat (4) using a suitable tool.
11. Apply a suitable lubricant to the thread and the sealing cone of the new seat.
12. Screw in the seat (4). Observe tightening torques.
13. Hold the plug and plug stem (5) stationary using assembly pliers. Unscrew the plug stem extension (25) using a suitable tool and take it out of the insulating section (21).
14. Apply a suitable lubricant to all packing parts and the end of the plug stem of the new plug (5).
    We recommend replacing the packing as well. See section 9.4.2, part b).
15. Make sure that the two retaining washers (30) are still in the plug stem extension (25). Renew the washers, if necessary.
16. Hold the new plug with plug stem (5) stationary. Place on the insulating section (21). Screw the plug stem extension (25) onto the plug stem using a suitable tool. Observe tightening torques.
17. Place the insulating section (21) together with the plug stem extension (25), plug stem and plug (5) onto the body (1).

    Version with V-port plug: place the insulating section (21) onto the valve body, making sure that the largest V-shaped port of the V-port plug faces towards the valve outlet.
18. Firmly press the plug (5) into the seat (4). Fasten down the insulating section (21) with the body nuts (14). Tighten the nuts gradually in a crisscross pattern. Observe tightening torques.
19. Carefully lift the valve bonnet (2) over the plug stem extension (25) onto the insulating section (21).
20. Carefully slide the packing parts over the plug stem extension into the packing chamber using a suitable tool. Observe the proper sequence (see Fig. 9-2).
21. Fasten the valve bonnet with nuts (33) and bolts (32). Observe tightening torques.
22. Screw in the threaded bushing (8) and tighten it. Observe tightening torques.
23. Loosely screw the lock nut (10) and stem connector nut (9) onto the plug stem.

9.5 Ordering spare parts and operating supplies

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

Spare parts

See Annex for details on spare parts.

Lubricant

See document ▶ AB 0100 for details on suitable lubricants.

Tools

See document ▶ AB 0100 for details on suitable tools.

10 Decommissioning

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

⚠ DANGER

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

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 working on the control valve:

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

⚠ WARNING

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

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

- ➔ *Allow components and pipelines to cool down or heat up.*
- ➔ *Wear protective clothing and safety gloves.*

⚠ WARNING

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

- ➔ *Do not loosen the screw of the test connection while the valve is pressurized.*

⚠ 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 fittings. Both can damage hearing.

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

⚠ WARNING

Crush hazard arising from actuator and plug stem moving.

- ➔ *Do not insert hands or finger into the yoke while the air supply is connected to the actuator.*
- ➔ *Before working on the 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.

While the valve is operating, the actuator, for example, may vent during closed-loop operation or when the valve opens or closes.

➔ *Wear eye protection when working in close proximity to the control valve.*

⚠ WARNING

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

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

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

To decommission the control valve 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. Disconnect and lock the pneumatic air supply to depressurize the actuator.
4. Release any stored energy.
5. If necessary, allow the pipeline and valve components to cool down or heat up.

11 Removal

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

⚠ WARNING

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

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

➔ *Allow components and pipelines to cool down or heat up.*

➔ *Wear protective clothing and safety gloves.*

⚠ WARNING

Crush hazard arising from actuator and plug stem moving.

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

➔ *Before working on the 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 medium can flow out of the valve and, depending on its properties, cause personal injury, e.g. (chemical) burns.

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

⚠ WARNING

Risk of personal injury due to preloaded springs.

Actuators with preloaded springs are under tension. They can be identified by the long bolts protruding from the bottom of the actuator.

➔ *Before starting any work on the actuator, relieve the compression from the preloaded springs.*

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

– The control valve is put out of operation (see the 'Decommissioning' section).

11.1 Removing the valve from the pipeline

a) Version with flanges

1. Support the valve to hold it in place when separated from the pipeline (see the 'Shipment and on-site transport' section).

2. Unbolt the flange joint.
3. Remove the valve from the pipeline (see the 'Shipment and on-site transport' section).

b) Version with welding ends

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

11.2 Removing the actuator from the valve

See associated actuator documentation.

12 Repairs

If the 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 repair work.

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

➔ *Contact SAMSON's After-sales Service for 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 & Support > After-sales Service.*
2. Send an e-mail
   ▶ retouren@samsongroup.com to register the return shipment including the following information:
   – Type
   – Article number
   – Configuration ID
   – Original order
   – Completed Declaration on Contamination, which can be downloaded from our website at ▶ *www.samsongroup.com > Service & Support > After-sales Service.*

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

Note

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

13 Disposal

➔ Observe local, national and international refuse regulations.

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

14 Certificates

These declarations of conformity are included on the next pages:

- Declaration of conformity in compliance with Pressure Equipment Directive 2014/68/EU:
  - Country of origin: Germany, see page 14-2 to 14-4
  - Country of origin: France, see page 14-5 to 14-8
- Declaration of conformity in compliance with Machinery Directive 2006/42/EC for Types 3241-1 and 3241-7 Control Valves on page 14-9
- Declaration of incorporation in compliance with Machinery Directive 2006/42/EC for the Type 3241 Valve with other actuators other than Types 3271 and 3277 Actuators on page 14-10

Other optional certificates are available on request.

SMART IN FLOW CONTROL

SAMSON

EU-KONFORMITÄTSERKLÄRUNG
EU DECLARATION OF CONFORMITY

Modul A/Module A

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

Geräte/Devices	Bauart/Series	Typ/Type	Ausführung/Version
Durchgangsventil/Globe valve	240	3241	DIN, Gehäuse GG, DN 65-125, Gehäuse GGG, DN 50-80, Fluide G2, L1, L2[1)]/ DIN, body of cast iron, DN 65-125, body of spheroidal-graphite iron, DN 50-80, fluids G2, L1, L2[1)]
Durchgangsventil/Globe valve	240	3241	DIN, Gehäuse Stahl u.a., DN 40-100, Fluide G2, L2[2)] DIN, body of steel, etc., DN 40-100, fluids G2, L2[2)]
Durchgangsventil/Globe valve	240	3241	ANSI, Gehäuse GG, Class 250, NPS 1 ½ bis NPS 2, Class 125, NPS 2 ½ bis NPS 4, Fluide G2, L1, L2[1)] ANSI, body of cast iron, Class 250, NPS 1 ½" to NPS 2, Class 125, NPS 2 ½" to NPS 4, fluids G2, L1, L2[1)]
Dreiwegeventil/Three-way valve	240	3244	DIN, Gehäuse GG, DN 65-125, Gehäuse GGG, DN 50-80, Fluide G2, L1, L2[1)]/ DIN, body of cast iron, DN 65-125, body of spheroidal-graphite iron, DN 50-80, fluids G2, L1, L2[1)]
Dreiwegeventil/Three-way valve	240	3244	DIN, Gehäuse Stahl u.a., DN 40-100, Fluide G2, L2[2)] DIN, body of steel, etc., DN 40-100, fluids G2, L2[2)]
Schrägsitzventil/Angle seat valve	---	3353	DIN, Rotgussgehäuse, alle Fluide DIN, red brass body, all fluids
Schrägsitzventil/Angle seat valve	---	3353	DIN, Gehäuse Stahl, Fluide G2, L1, L2[1)] DIN, body of steel, fluids G2, L1, L2[1)]
Durchgangsventile/Globe valve	V2001	3321	DIN, Gehäuse GG, DN 65-100, Fluide G2, L1, L2[1)]/ DIN, body of cast iron, DN 65-100, fluids G2, L1, L2[1)]
Durchgangsventile/Globe valve	V2001	3321	ANSI, Gehäuse GG, NPS 2 ½ bis NPS 4, Fluide G2, L1, L2[1)]/ ANSI, body of cast iron, NPS 2 ½ to NPS 4, fluids G2, L1, L2[1)]
Dreiwegeventil/Three-way valve	V2001	3323	DIN, Gehäuse GG, DN 65-100, Fluide G2, L1, L2[1)]/ DIN, body of cast iron, DN 65-100, fluids G2, L1, L2[1)]
Dreiwegeventil/Three-way valve	V2001	3323	ANSI, Gehäuse GG, NPS 2 ½ bis NPS 4, Fluide G2, L1, L2[1)]/ ANSI, body of cast iron, NPS 2 ½ to NPS 4, fluids G2, L1, L2[1)]
Dreiwegeventil/Three-way valve	250	3253	DIN, Gehäuse GG, DN 200 PN 10, Fluide G2, L1, L2[1)]/ DIN, body of cast iron, DN 200 PN 10, fluids G2, L1, L2[1)]

[1)] Gase nach Art. 4 Abs.1 Pkt. c.i zweiter Gedankenstrich//Gases according to Article 4(1)(c.i), second indent
Flüssigkeiten nach Art. 4 Abs.1 Pkt. c.iii/Liquids according to Article 4(1)(c.ii)

[2)] Gase nach Art. 4 Abs.1 Pkt. c.i zweiter Gedankenstrich//Gases according to Article 4(1)(c.i), second indent
Flüssigkeiten nach Art. 4 Abs.1 Pkt. c.ii zweiter Gedankenstrich//Liquids according to Article 4(1)(c.ii), second indent

die Konformität mit nachfolgender Anforderung:/that the products mentioned above comply with the requirements of the following standards:

Richtlinie des Europäischen Parlaments und des Rates zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die Bereitstellung von Druckgeräten auf dem Markt/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**	**vom 15. Mai 2014/ of 15 May 2014**
Angewandtes Konformitätsbewertungsverfahren für Fluide nach Art. 4 Abs. 1/ Applied conformity assessment procedure for fluids according to Article 4(1)	**Modul A/Module A**	

Angewandte technische Spezifikation/Technical standards applied: DIN EN 12516-2, DIN EN 12516-3, ASME B16.34

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

Frankfurt am Main, 23. Februar 2017/23 February 2017

i.V. Klaus Hörschken

Klaus Hörschken
Zentralabteilungsleiter/Head of Central Department
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Revision 02

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EU DECLARATION OF CONFORMITY
TRANSLATION

Module D / N° CE-0062-PED-D-SAM 001-20-DEU

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	3374 (2000 N)		with Type 2811, 2814, 2823, 3321, 3241 Certificate no.: 01 202 931-B-15-0030
Safety shut-off device for combustion plants	240	3241	with Type 3241-4362 Certificate no.: 01 202 931-B-11-0018
	240	3241	with Type 3241-4364 Certificate no.: 01 202 931-B-11-0019
Control valve for hot water and steam with fail-safe action	240	3241	with Type 3271 Certificate no.: 01 202 931-B-10-0006
	240	3241	also balanced with Type 3271 and Type 3277 Certificate no.: 01 202 931-B-10-0009
	3274 (1800 N)		with Type 3241, 2423, 2823 Certificate no.: 01 202 931-B-10-0027
	3274 (3000 N)		with Type 3241, 3214, 2814 Certificate no.: 01 202 931-B-10-0028
Control valve for water and steam with fail-safe action	5725, 5825 (2770)		with Type 3214 (2814), 2423 (2823), 3213 (2710), 3222 (2710), 2488 (2730), 2488 (2750) Certificate no.: 01 202 641/B-19 0017
Safety shut-off device for gas burners and gas equipment	240	3241	with Type 3241-0261 to 3241-0275 Certificate no.: 01 202 931-B-02-0017-01
Control valve for leckage gas discharge for gas burners and gas equipment	240	3241	with Type 3241-4321 Certificate no.: 01 202 931-B-02-0018-01

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**	**by Bureau Veritas 0062**

The manufacturer's quality management system is monitored by the following notified body:
Bureau Veritas Services SAS, 8 Cours du Triangle, 92800 PUTEAUX – LA DEFENSE

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

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

Frankfurt am Main, 15 May 2020

Dr. Andreas Widl
Chief Executive Officer (CEO)

Dr. Thomas Steckenreiter
Chief Technology Officer (CTO)

EU DECLARATION OF CONFORMITY
TRANSLATION

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

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

Devices	Series	Type	Version
Globe valve	240	3241	DIN, body of cast iron from DN 150, body of spheroidal-graphite iron, from DN 100, fluids G2, L1, L2[1]
			DIN/ANSI, body of steel, etc., all fluids
Three-way valve	240	3244	DIN, body of cast iron from DN 150, body of spheroidal-graphite iron, from DN 100, fluids G2, L1, L2[1]
			DIN/ANSI, body of steel, etc., all fluids
Cryogenic valve	240	3248	DIN/ANSI, all fluids
Globe valve	250	3251	DIN/ANSI, all fluids
Three-way valve	250	3253	DIN/ANSI, body of steel, etc., all fluids
Globe valve	250	3254	DIN/ANSI, all fluids
Angle valve	250	3256	DIN/ANSI, all fluids
Split-body valve	250	3258	DIN, all fluids
Angle valve (IG standards)	250	3259	DIN, all fluids
Steam-converting valve	280	3281	DIN/ANSI, all fluids
		3284	DIN/ANSI, all fluids
		3286	DIN/ANSI, all fluids
		3288	DIN, all fluids
Globe valve	V2001	3321	DIN, body of steel, etc., all fluids
			ANSI, all fluids
Three-way valve	V2001	3323	DIN, body of steel, etc., all fluids
			ANSI, all fluids
Angle seat valve	—	3353	DIN, body of steel, etc., all fluids
Silencer	3381	3381-1	DIN/ANSI, single attenuation plate with welding ends, all fluids
		3381-3	DIN/ANSI, all fluids
		3381-4	DIN/ANSI, single attenuation plate multi-stage with welding ends, all fluids
Globe valve	240	3241	ANSI, body of cast iron, Class 125, from NPS 5, fluids G2, L1, L2[1]
Cryogenic valve	240	3246	DIN/ANSI, all fluids
Three-way valve	250	3253	DIN, body of cast iron from DN200 PN16, fluids G2, L1, L2[1]
Globe valve	290	3291	ANSI, all fluids
Angle valve	290	3296	ANSI, all fluids
Globe valve	590	3591	ANSI, all fluids
Angle valve	590	3596	ANSI, all fluids
Cryogenic valve	590	3598	ANSI, NPS 3 to NPS 8, Class 900, all fluids
Control valve	—	3595	ANSI, all fluids

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

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

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

The manufacturer's quality management system is monitored by the following notified body:
Bureau Veritas Services SAS, 8 Cours du Triangle, 92800 PUTEAUX – LA DEFENSE
Technical standards applied: DIN EN12516-2, DIN EN12516-3, ASME B16.34

Manufacturer: SAMSON AG, Weismuellerstrasse 3, 60314 Frankfurt am Main, Germany
Frankfurt am Main, 15 May 2020

Dr. Andreas Widl
Chief Executive Officer (CEO)

Dr. Thomas Steckenreiter
Chief Technology Officer (CTO)

Revision 07

SAMSON REGULATION S.A.S.

DECLARATION UE DE CONFORMITE
EU DECLARATION OF CONFORMITY
EU-KONFORMITÄTSERKLÄRUNG

DC014
2020-02

Module A / Modul A

Par la présente, SAMSON REGULATION SAS déclare sous sa seule responsabilité pour les produits suivants :
For the following products, SAMSON REGULATION SAS hereby declares under its sole responsibility:
SAMSON REGULATION SAS erklärt in alleiniger Verantwortung für folgende Produkte:

Appareils / Devices / Geräte	Type / Typ	Exécution / Version / Ausführung
Vanne de décharge / back pressure reducing valve / Überströmventil	2371-0	DIN & ANSI - corps en acier forgé / body of forged steel / Gehäuse Schmiedestahl DN 32 – 100 $P_{max\ T = 20°C}$ 10 bar NPS 1 ¼ – 4 $P_{max\ T= 70°F}$ 150 psi Tous fluides / all fluids / alle Fluide
Détendeur alimentaire / pressure reducing valve / Druckminderventil	2371-1	
Vanne de régulation passage droit / globe valve / Durchgangsventil	3241	DIN - corps en fonte grise / body of cast iron / Gehäuse Grauguss: GJL-250 DN 65 – 150 PN16 Fluides / fluids / Fluide G2, L1, L2 [1]
	3241	DIN - corps en fonte sphéroïdale / body of spheroidal graphite iron / Gehäuse Sphäroguss : GJS-400-18-LT DN 50 PN25 Fluides / fluids / Fluide G2, L1, L2 [1]
	3241	ANSI - corps en fonte grise / body of cast iron / Gehäuse Grauguss: A126 B Cl 250 NPS 1 ½ - 3 ; Cl 125 NPS 2 ½ - 6 Fluides / fluids / Fluide G2, L1, L2 [1]
Vanne de régulation 3 voies / 3-way Valve / Drei-Wege-Stellventil	3244	DIN - corps en fonte grise / body of cast iron / Gehäuse Grauguss: GJL-250 DN 65 – 150 PN16 Fluides / fluids / Fluide G2, L1, L2 [1]
	3244	DIN - corps en fonte sphéroïdale / body of spheroidal graphite iron / Gehäuse Sphäroguss : GJS-400-18-LT DN 50 PN25 Fluides / fluids / Fluide G2, L1, L2 [1]
Vanne aseptique / Aseptic valve / Aseptisches Ventil	3249	DIN & ANSI - corps en acier forgé / body of forged steel / Gehäuse Schmiedestahl DN 32 – 100 $P_{max\ T = 20°C}$ 10 bar NPS 1 ¼ – 4 $P_{max\ T= 70°F}$ 150 psi Tous fluides / all fluids / alle Fluide
Vanne de régulation passage droit / globe valve / Durchgangsventil	3321	DIN - corps en fonte grise / body of cast iron / Gehäuse Grauguss: GJL-250 DN 65 – 100 PN16 Fluides / fluids / Fluide G2, L1, L2 [1]
	3321	ANSI - corps en fonte grise / body of cast iron / Gehäuse Grauguss: A126 B Cl 125 NPS 2 ½ - 4 Fluides / fluids / Fluide G2, L1, L2 [1]
Vanne de régulation 3 voies / 3-way Valve / Drei-Wege-Stellventil	3323	DIN - corps en fonte grise / body of cast iron / Gehäuse Grauguss: GJL-250 DN 65 – 100 PN16 Fluides / fluids / Fluide G2, L1, L2 [1]
	3323	ANSI - corps en fonte grise / body of cast iron / Gehäuse Grauguss: A126 B Cl 125 NPS 2 ½ - 4 Fluides / fluids / Fluide G2, L1, L2 [1]
Vanne à membrane / Diaphragm valve / Membran-Ventil	3345	DIN & ANSI corps en fonte sphéroïdale, aciers moulé & forgé / body of spheroidal graphite iron, cast & forged steel / Gehäuse Sphäroguss, Gussstahl & Schmiedestahl DN 32 – 100 NPS $1^{1/4}$ – 4 Tous fluides / all fluids / alle Fluide
Vanne alimentaire / Sanitary valve / Hygienisches Ventil	3347	DIN & ANSI corps en aciers moulé & forgé / body of, cast & forged steel / Gehäuse Gussstahl & Schmiedestahl DN 65 – 125 $P_{max\ T = 20°C}$ 16 bar NPS $2^{1/2}$ – 5 $P_{max\ T= 70°F}$ 240 psi Fluides / fluids / Fluide G2, L1, L2 [1]
Vanne aseptique / Aseptic valve / Aseptisches Ventil	3349	DIN & ANSI - corps en acier forgé / body of forged steel / Gehäuse Schmiedestahl DN 32 – 100 $P_{max\ T = 20°C}$ 10 bar NPS 1 ¼ – 4 $P_{max\ T= 70°F}$ 150 psi Tous fluides / all fluids / alle Fluide
Vanne Tout ou Rien / On-Off Valve / Auf-Zu Ventil	3351	DIN - corps en fonte grise / body of cast iron / Gehäuse Grauguss: GJL-250 DN 65 – 150 PN16 Fluides / fluids / Fluide G2, L1, L2 [1]
	3351	DIN - corps en fonte sphéroïdale / body of spheroidal graphite iron / Gehäuse Sphäroguss : GJS-400-18-LT DN 50 PN25 Fluides / fluids / Fluide G2, L1, L2 [1]
	3351	ANSI - corps en fonte grise / body of cast iron / Gehäuse Grauguss: A126 B Cl 250 NPS 1 ½ - 3 ; Cl 125 NPS 2 ½ - 6 Fluides / fluids / Fluide G2, L1, L2 [1]
Bride de mesure / Measure flange / Messflansch	5090	DIN & ANSI - corps en acier forgé / body of forged steel / Gehäuse Schmiedestahl DN 40 – 500 NPS 1.5 – 20
Tube de mesure / Measure tube / Messrohr	5091	DIN & ANSI - corps en acier forgé / body of forged steel / Gehäuse Schmiedestahl DN 40 – 500 NPS 1.5 – 20

[1] Gas selon l'article 4 § 1.c) i) / Gases Acc. to article 4 paragraphs 1.c) i) / Gases nach Artikel 4 Abs.1 Pkt. c) i)
Liquide selon l'article 4 § 1.c) ii) / Liquids Acc. to article 4 paragraphs 1.c) ii) / Flüssigkeiten nach Artikel 4 Abs.1 Pkt. c) ii)

Agrément en cours d'examen par Bureau Veritas Exploitation / Approval being examined by Bureau Veritas Exploitation / Genehmigung wird von Bureau Veritas Exploitation geprüft.

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N°SIRET: RCS Lyon B 788 165 603 00127 • N°de TVA: FR 86 788 165 603 • Code APE 2814Z

BNP Paribas N°compte 0002200215245 • Banque 3000401857
IBAN FR7630004018570002200215245 • BIC (code SWIFT) BNPAFRPPVBE

Crédit Lyonnais N°compte 00000600035B41 • Banque 300 0201936
IBAN FR9830002019360000600035B41 • BIC (code SWIFT) CRLYFRPP

SAMSON REGULATION S.A.S.

DECLARATION UE DE CONFORMITE
EU DECLARATION OF CONFORMITY
EU-KONFORMITÄTSERKLÄRUNG

DC014
2020-02

Module A / Modul A

la conformité avec le règlement suivant : / the conformity with the following requirement: / die Konformität mit nachfolgender Anforderung:

La Directive du Parlement Européen et du Conseil d'harmonisation des lois des Etats Membres concernant la mise à disposition sur le marché d'équipements sous pression / Directive of the European Parliament and of the Council on the Harmonization of the laws of the Member States relating of the making available on the market of pressure equipment / Richtlinie des Europäischen Parlaments und des Rates zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die Bereitstellung von Druckgeräten auf dem Markt	**2014/68/UE 2014/68/EU**	**Du / of / vom 15.05.2014**
Procédure d'évaluation de la conformité appliquée pour les fluides selon l'Article 4 § 1 Applied conformity assessment procedure for fluids according to Article 4 (Angewandtes Konformitätsbewertungsverfahren für Fluide nach Art. 4 Abs.1	**Module A / Modul A**	

Normes techniques appliquées / Technical standards applied / Angewandte technische Spezifikation :
DIN EN 12516-2, DIN EN 12516-3, ASME B16.34, DIN-EN 60534-4, DIN-EN 1092-1

Fabricant / manufacturer / Hersteller : Samson Régulation SAS, 1, rue Jean Corona, FR-69120 VAULX-EN-VELIN

Vaulx-en-Velin, le 07/02/20

Bruno Soulas
Directeur Administratif / Head of Administration

Joséphine Signoles-Fontaine
Responsable QSE / QSE Manager

SAMSON REGULATION • 1 rue Jean Corona • 69120 Vaulx-en-Velin
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SAMSON REGULATION S.A.S.

DECLARATION UE DE CONFORMITE
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DC012
2020-05

Module H / Modul H, N°/ Nr CE-0062-PED-H-SAM 001-20-FRA

Par la présente, SAMSON REGULATION SAS déclare sous sa seule responsabilité pour les produits suivants :
For the following products, SAMSON REGULATION SAS hereby declares under its sole responsibility:
SAMSON REGULATION SAS erklärt in alleiniger Verantwortung für folgende Produkte:

Appareils / Devices / Geräte	Type / Typ	Exécution / Version / Ausführung
Vanne de régulation passage droit / globe valve / Durchgangsventil	3241	DIN - corps en fonte sphéroïdale / body of spheroidal graphite iron / Gehäuse Sphäroguss : GJS-400-18-LT DN 65 - 150 PN 25 Fluides / fluids / Fluide G2, L1, L2 [1]
	3241	ANSI - corps en fonte grise / body of cast iron / Gehäuse Grauguss: A126 B Cl 250 NPS 4 – 6 Fluides / fluids / Fluide G2, L1, L2 [1]
	3241	DIN ANSI - corps en acier moulé / body of cast steel / Gehäuse Gussstahl DN 32 – 150 PN_{max} 40 NPS $1^{1/2}$ - 6 Cl_{max} 300 Tous fluides / all fluids / alle Fluide
Vanne de régulation 3 voies / 3-way Valve / Drei-Wege-Stellventil	3244	DIN - corps en fonte sphéroïdale / body of spheroidal graphite iron / Gehäuse Sphäroguss : GJS-400-18-LT DN 65 - 150 PN 25 Fluides / fluids / Fluide G2, L1, L2 [1]
	3244	DIN ANSI - corps en acier moulé / body of cast steel / Gehäuse Gussstahl DN 32 – 150 PN_{max} 40 NPS $1^{1/2}$ - 6 Cl_{max} 300 Tous fluides / all fluids / alle Fluide
Vanne de régulation passage droit / globe valve / Durchgangsventil	3251	DIN & ANSI - corps en acier moulé / body of cast steel / Gehäuse Gussstahl DN 32 – 200 NPS 1 ¼ – 8 Tous fluides / all fluids / alle Fluide
Vanne haute pression / High pressure valve / Hochdruckventil	3252	DIN & ANSI - corps en acier forgé / body of forged steel / Gehäuse Schmiedestahl DN 32 – 80 PNmax 400 NPS 1 ¼ – 3 Clmax 2500 Tous fluides / all fluids / alle Fluide
	3252	DIN - corps en acier forgé / body of forged steel / Gehäuse Schmiedestahl DN 100 PNmax 16 Tous fluides / all fluids / alle Fluide
Vanne équerre / Angle valve / Eckventil	3256	DIN & ANSI - corps en acier moulé / body of cast steel / Gehäuse Gussstahl DN 32 – 200 NPS 1 ¼ – 8 Tous fluides / all fluids / alle Fluide
Vanne à segment sphérique / Segment ball valve / Kugelsegmentventil	3310	DIN & ANSI - corps en acier moulé / body of cast steel / Gehäuse Gussstahl DN 40 – 300 NPS 1 ½ – 12 Tous fluides / all fluids / alle Fluide
Vanne de régulation passage droit / globe valve / Durchgangsventil	3321	DIN ANSI - corps en acier moulé / body of cast steel / Gehäuse Gussstahl DN 32 – 100 Cl 150 - 300 NPS $1^{1/2}$ - 4 Tous fluides / all fluids / alle Fluide
Vanne papillon / Butterfly valve / Stell-klappe	3331	DIN ANSI - corps en acier moulé / body of cast steel / Gehäuse Gussstahl DN 50 – 400 NPS 2 - 16 Tous fluides / all fluids / alle Fluide
Vanne à membrane / Diaphragm valve / Membran-Ventil	3345	DIN & ANSI corps en fonte sphéroïdale, aciers moulé & forgé / body of spheroidal graphite iron, cast & forged steel / Gehäuse Sphäroguss, Gussstahl & Schmiedestahl DN 125 – 150 NPS 5 – 6 Tous fluides / all fluids / alle Fluide
Vanne alimentaire / Sanitary valve / Hygienisches Ventil	3347	DIN & ANSI corps en aciers moulé & forgé / body of, cast & forged steel / Gehäuse Gussstahl & Schmiedestahl DN 150 $P_{max\ T=20°C}$ 16 bar NPS 6 $P_{max\ T=70°F}$ 240 psi Fluides / fluids / Fluide G2, L1, L2 [1]
	3347	DIN & ANSI corps en aciers moulé & forgé / body of, cast & forged steel / Gehäuse Gussstahl & Schmiedestahl DN 32 – 150 $P_{max\ T=20°C}$ 40 bar NPS 1 ¼ – 6 $P_{max\ T=70°F}$ 600 psi Fluides / fluids / Fluide G2, L1, L2 [1]
	3347	DIN & ANSI corps en aciers moulé & forgé / body of, cast & forged steel / Gehäuse Gussstahl & Schmiedestahl DN 32 – 125 $P_{max\ T=20°C}$ 63 bar NPS 1 ¼ – 5 $P_{max\ T=70°F}$ 945 psi Fluides / fluids / Fluide G2, L1, L2 [1]
Vanne Tout ou Rien / On-Off Valve / Auf-Zu Ventil	3351	DIN - corps en fonte sphéroïdale / body of spheroidal graphite iron / Gehäuse Sphäroguss : GJS-400-18-LT DN 65 - 150 PN 25 Fluides / fluids / Fluide G2, L1, L2 [1]
	3351	ANSI - corps en fonte grise / body of cast iron / Gehäuse Grauguss: A126 B Cl 250 NPS 4 – 6 Fluides / fluids / Fluide G2, L1, L2 [1]
	3351	DIN ANSI - corps en acier moulé / body of cast steel / Gehäuse Gussstahl DN 32 – 150 PN_{max} 40 NPS $1^{1/2}$ - 6 Cl_{max} 300 Tous fluides / all fluids / alle Fluide
Bride de mesure / Measure flange / Messflansch	5090	DIN & ANSI - corps en acier forgé / body of forged steel / Gehäuse Schmiedestahl DN 40 – 500 NPS 1.5 – 20
Tube de mesure / Measure tube / Messrohr	5091	DIN & ANSI - corps en acier forgé / body of forged steel / Gehäuse Schmiedestahl DN 40 – 500 NPS 1.5 – 20

[1] Gas selon l'article 4 § 1.c) i) / Gases Acc. to article 4 paragraphs 1.c) i) / Gases nach Artikel 4 Abs.1 Pkt. c) i)
Liquide selon l'article 4 § 1.c) ii) / Liquids Acc. to article 4 paragraphs 1.c) ii) / Flüssigkeiten nach Artikel 4 Abs.1 Pkt. c) ii)

☐ Agrément en cours d'examen par Bureau Veritas Exploitation / Approval being examined by Bureau Veritas Exploitation / Genehmigung wird von Bureau Veritas Exploitation geprüft.

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SAMSON REGULATION S.A.S.

DECLARATION UE DE CONFORMITE
EU DECLARATION OF CONFORMITY
EU-KONFORMITÄTSERKLÄRUNG

DC012
2020-05

Module H / Modul H, N°/ Nr CE-0062-PED-H-SAM 001-20-FRA

la conformité avec le règlement suivant : / the conformity with the following requirement: / die Konformität mit nachfolgender Anforderung:

La Directive du Parlement Européen et du Conseil d'harmonisation des lois des Etats Membres concernant la mise à disposition sur le marché d'équipements sous pression / Directive of the European Parliament and of the Council on the Harmonization of the laws of the Member States relating of the making available on the market of pressure equipment / Richtlinie des Europäischen Parlaments und des Rates zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die Bereitstellung von Druckgeräten auf dem Markt	**2014/68/UE 2014/68/EU**	**Du / of / vom 15.05.2014**
Procédure d'évaluation de la conformité appliquée pour les fluides selon l'Article 4 § 1 Applied conformity assessment procedure for fluids according to Article 4 (Angewandtes Konformitätsbewertungsverfahren für Fluide nach Art. 4 Abs.1	**Module H / Modul H**	**certificat n° / Zertifikat-Nr. CE-0062-PED-H-SAM 001-20-FRA**

Normes techniques appliquées / Technical standards applied / Angewandte technische Spezifikation :
DIN EN 12516-2, DIN EN 12516-3, ASME B16.34, DIN-EN 60534-4, DIN-EN 1092-1

Le système de contrôle Qualité du fabricant est effectué par l'organisme de certification suivant :
The manufacturer's quality management system is monitored by the following notified body:
Das Qualitätssicherungssystem des Herstellers wird von folgender benannter Stelle überwacht:

Bureau Veritas Services SAS N°/Nr 0062, 8 Cours du Triangle, 92800 PUTEAUX - LA DEFENSE
Fabricant / manufacturer / Hersteller : Samson Régulation SAS, 1, rue Jean Corona, FR-69120 VAULX-EN-VELIN

Vaulx-en-Velin, le 27/05/20

Bruno Soulas
Directeur Administratif / Head of Administration

Joséphine Signoles-Fontaine
Responsable QSE / QSE Manager

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DECLARATION OF INCORPORATION
TRANSLATION

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

For the following products:
Type 3241 Globe Valve

We certify that the Type 3241 Globe Valves are 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 data sheets as well as the mounting and operating instructions; the documents are available in electronic form on the Internet at .

For product descriptions of the valve, refer to:
- Type 3241 Valve (DIN): Mounting and Operating Instructions EB 8015
- Type 3241 Valve (ANSI): Mounting and Operating Instructions EB 8012

Referenced technical standards and/or specifications:
- VCI, VDMA, VGB: Leitfaden Maschinenrichtlinie (2006/42/EG) – Bedeutung für Armaturen, May 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, 1 October 2019

i.V.

Dr. Michael Heß
Director
Product Management and Technical Sales

i.V.

Peter Scheermesser
Director
Product Upgrades and ETO Valves and Actuators

Revision no. 00

DECLARATION OF INCORPORATION
TRANSLATION

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

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Type 3241 Globe Valve

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Comments:
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- Also observe the referenced documents listed in the mounting and operating instructions.

Persons authorized to compile the technical file:

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Frankfurt am Main, 1 October 2019

i.V.

Dr. Michael Heß
Director
Product Management and Technical Sales

i.V.

Peter Scheermesser
Director
Product Upgrades and ETO Valves and Actuators

Revision no. 00

15 Annex

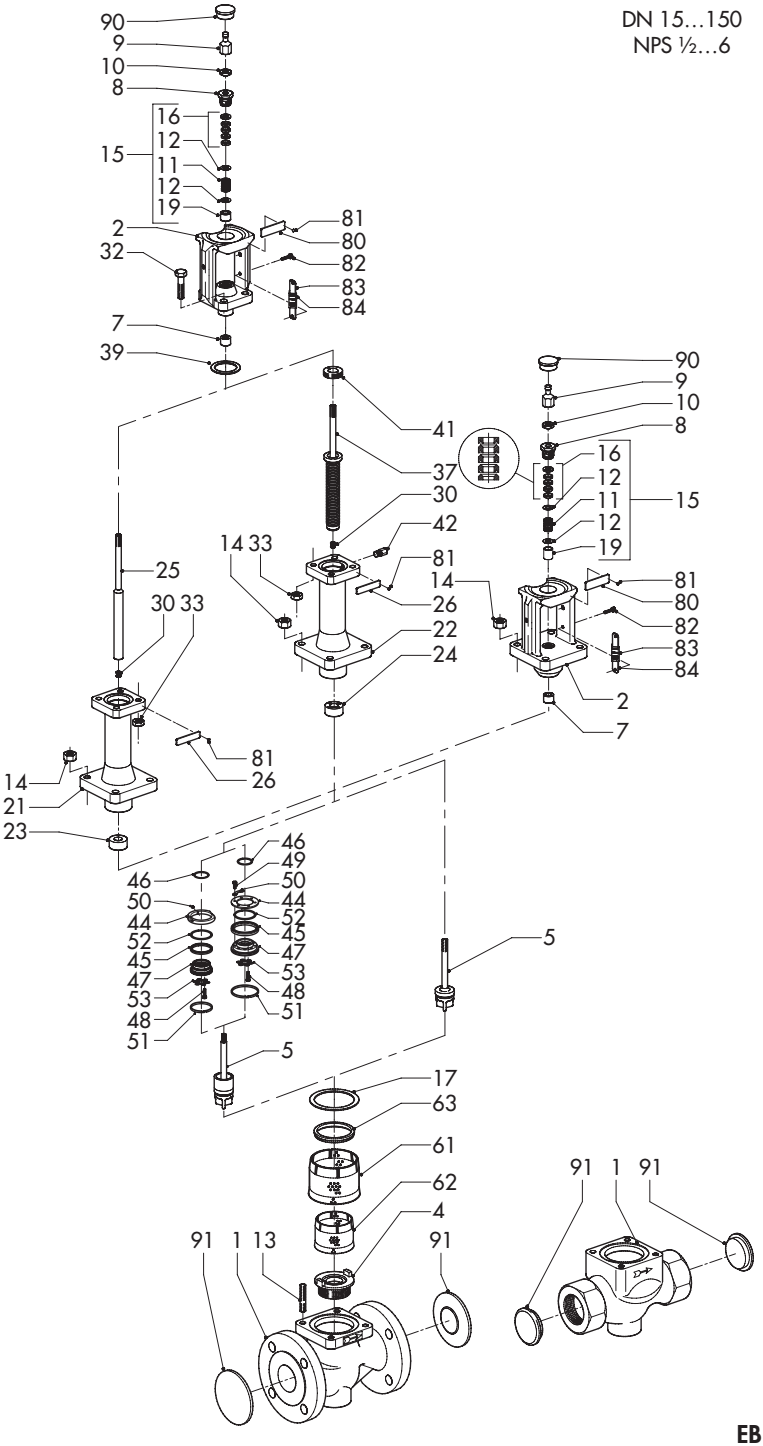
15.1 Tightening torques, lubricants and tools

▶ AB 0100 for tools, tightening torques and lubricants

15.2 Spare parts

1	Body
2	Flange/valve bonnet
3	Yoke
4	Seat
5	Plug (with plug stem)
7	Guide bushing (flange)
8	Threaded bushing (packing nut)
9	Stem connector nut
10	Lock nut
11	Spring
12	Washer
13	Stud bolt
14	Body nut
15	Packing (adjustable)
16	Packing
17	Body gasket
19	Bushing
21	Insulating section
22	Bellows seal
23	Guide bushing (insulating section)
24	Guide bushing (bellows seal)
25	Plug stem extension
26	Label (bellows seal or insulating section)
27/28 31/34	Fastening parts
29	Plug for version with bellows seal
30	Retaining washers
32	Bolt
33	Nut
37	Plug stem with bellows seal
39	Gasket
41	Nut
42	Screw plug with seal
44	Ring/ring nut [1]
45	Packing ring [1]
46	Gasket [1]
47	Support [1]
48	Hex screw [1]
49	Hex screw [1]
50	Lock [1]
51	Guide [1] (several guides only for version with graphite seal)
52	Ring [1] (only for version with graphite seal)
53	Snap ring [1]
61	Flow divider ST 2 [2]
62	Flow divider ST 1 or ST 3 [2]
63	Ring [2]
64	Gasket [2]
65	Gasket [2]
80	Nameplate
81	Grooved pin
82	Screw
83/84	Travel indicator scale
85	Screw
90	Cap
91	Protective cap
92	Nut
101	Bellows bonnet
102	Screw with snap ring [1] (only for version with bellows seal)

[1] Version with balanced valve plug
[2] Version with flow divider


DN 15…150
NPS ½…6
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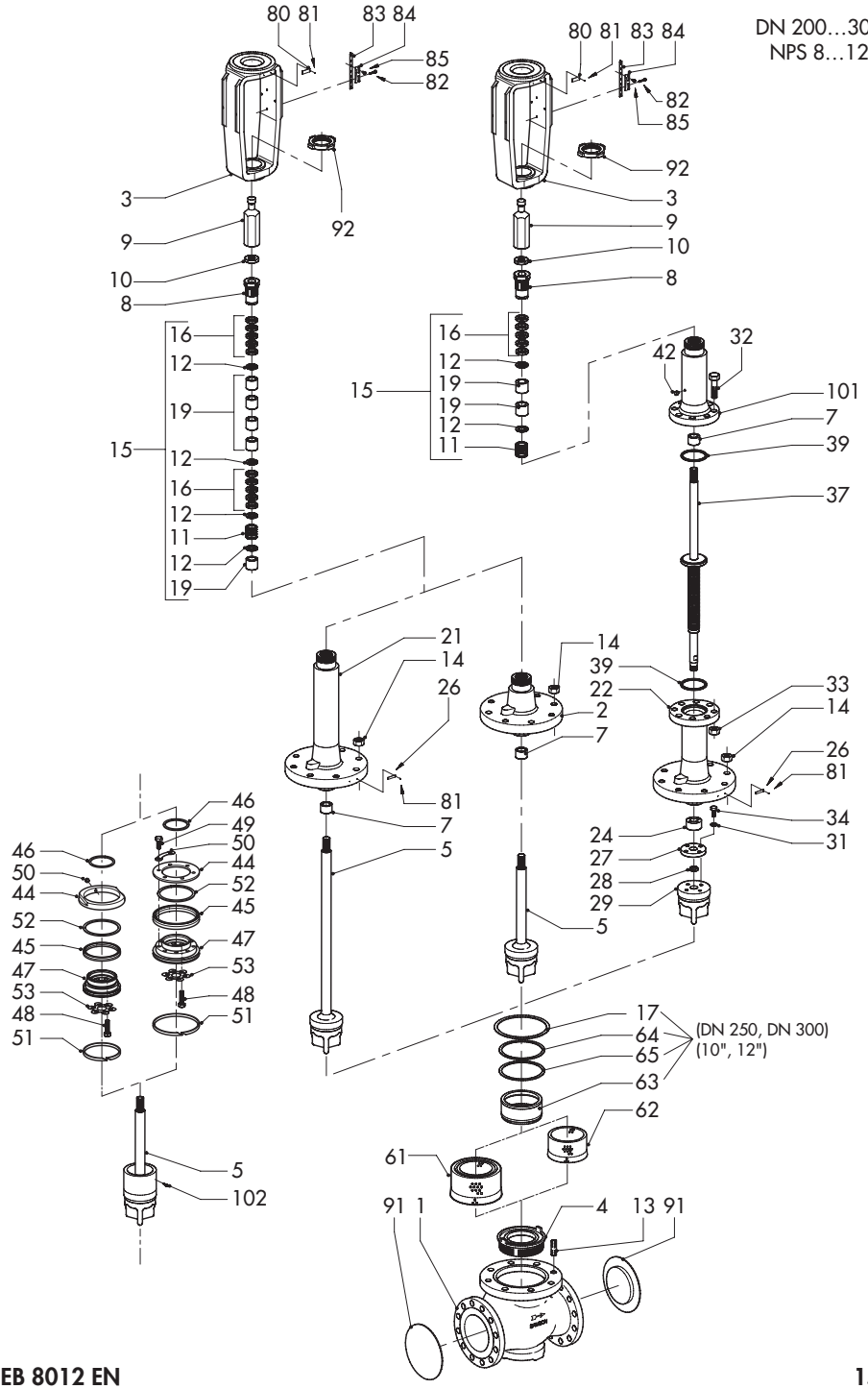
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NPS 8…12
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(DN 250, DN 300)
(10", 12")
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13 91

15.3 After-sales service

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

E-mail address

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

Addresses of SAMSON AG and its subsidiaries

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

Required specifications

Please submit the following details:

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

EB 8012 EN

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2020-08-12 · English