MOUNTING AND OPERATING INSTRUCTIONS

EB 8039 EN

Translation of original instructions

Type 3351 Pneumatic On/off Valve

Type 3351 Pneumatic On/off Valve
Version with handwheel

Type 3351 Pneumatic On/off Valve

Edition September 2023

Note on these mounting and operating instructions

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

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

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

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

Definition of signal words

⚠ DANGER

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

⚠ WARNING

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

NOTICE

Property damage message or malfunction

Note

Additional information

Tip

Recommended action

1 Safety instructions and measures

Intended use

The Type 3351 Pneumatic Control Valve consists of an on/off valve and a pneumatic actuator. The valve is designed as a shut-off valve with tight shut-off for liquids, gases and vapors.

The valve and actuator are designed to operate under exactly defined conditions (e.g. operating pressure, process medium, temperature). Therefore, operators must ensure that the control valve is only used in operating conditions that meet the specifications used for sizing the valve at the ordering stage. In case operators intend to use the control valve in applications or conditions other than those specified, contact SAMSON.

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

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

Reasonably foreseeable misuse

The control valve is not suitable for the following applications:

– Use outside the limits defined during sizing and by the technical data
– 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.

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, e.g. when working at height
- Safety footwear, if applicable ESD (electrostatic discharge) footwear

➔ 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

Upon supply air or control signal failure, the valve moves to a certain fail-safe position (see 'Design and principle of operation' section).

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, warnings 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, operators must ensure that operating personnel or third parties are not exposed to any danger.

Operators are additionally responsible for ensuring that the limits for the product defined in the technical data are observed. This also applies to the start-up and shutdown procedures. Start-up and shutdown procedures fall within the scope of the operator's duties and, as such, are not part of these mounting and operating instructions. SAMSON is unable to make any

statements about these procedures since the operative details (e.g. differential pressures and temperatures) vary in each individual case and are only known to the operator.

Responsibilities of operating personnel

Operating personnel must read and understand these mounting and operating instructions as well as the referenced documents and observe the specified hazard statements, warnings and caution notes. Furthermore, operating personnel must be familiar with the applicable health, safety and accident prevention regulations and comply with them.

Referenced standards, directives and regulations

The control valves comply with the requirements of the European Pressure Equipment Directive 2014/68/EU, Machinery Directive 2006/42/EC, Directive 2016 No. 1105 Pressure Equipment (Safety) Regulations 2016 and Directive 2008 No. 1597 Supply of Machinery (Safety) Regulations 2008. Valves with a CE marking and/or UKCA marking have a declaration of conformity, which includes information about the applied conformity assessment procedure. The 'Certificates' section contains this declaration of conformity.

According to the ignition hazard assessment performed in accordance with Clause 5.2 of ISO 80079-36, the non-electrical control valves do not have their own potential ignition source even in the rare incident of an operating fault. As a result, they do not fall within the scope of Directive 2014/34/EU.

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

Referenced documentation

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

– Mounting and operating instructions for mounted valve accessories (positioner, solenoid valve etc.)
– When a substance is used in the device, which is listed as being a substance of very high concern on the candidate list of the REACH regulation:
  Information on safe use of the part affected
  ▶ www.samsongroup.com > About SAMSON > Material Compliance > REACH

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

1.1 Notes on possible severe personal injury

⚠ DANGER

Risk of bursting in pressure equipment.

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

➔ Observe the maximum permissible pressure for valve and plant.

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

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

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, e.g. during closed-loop operation or when the valve opens or closes.

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

➔ Use suitable silencers and vent plugs.

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

⚠ WARNING

Risk of personal injury due to preloaded springs.

The valve is fitted with an actuator with preloaded springs that are under tension.

➔ Before starting any work on the control valve, relieve the compression from the preloaded springs. See 'Relieving the spring compression in the actuator' in the 'Removal' section.

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.

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.

Exposure to hazardous substances poses a serious risk to health.

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

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

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

Risk of personal injury due to 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 the equipment.

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 (see the 'Tightening torques, lubricants and tools' section in the annex).

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 (see the 'Tightening torques, lubricants and tools' section in the annex).

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.

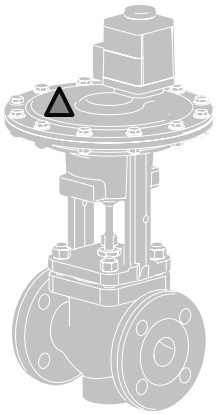
➔ Only use lubricants approved by SAMSON (see the 'Tightening torques, lubricants and tools' section in the annex).

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 symbols	Meaning of the warning	Location on the device
	Warning to indicate that the springs in the actuator are preloaded. Actuators with preloaded springs are under tension. Incorrect opening of the actuator can lead to personal injury due to the sudden and uncontrolled projection of parts. Before starting any work on the actuator, relieve the compression from the preloaded springs. See 'Relieving the spring compression in the actuator' in the 'Removal' section.	

2 Markings on the device

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

2.1 Valve nameplate

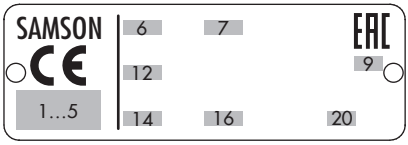


Fig. 2-1: *Inscriptions on the valve nameplate*

Item	Inscription meaning
1…5	PED requirements
6	Type designation
7	Device modification index
9	Month and year of manufacture
12	Production number
14	Flow coefficient: DIN: **KVS** · ANSI: **CV**
16	Plug seal: **PT**: PTFE/glass soft seal **PTI**: PTFE/stainless steel soft seal **STV**: Completely of Stellite® **ST:** Base material with Stellite® facing **ME**: Metal base material **PK**: PEEK soft seal **NI**: Metal seal with nickel or Inconel®
20	Country of origin

The nameplate is affixed to the front of the valve body (see Fig. 2-2).

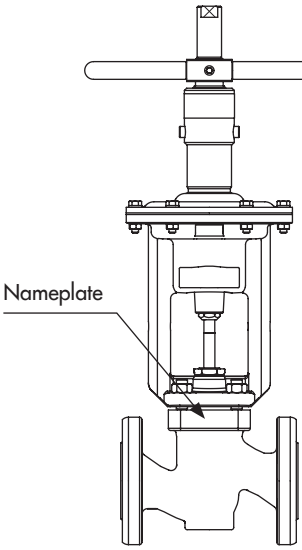


Fig. 2-2: *Valve nameplate*

3 Design and principle of operation

Fail-safe action

In the Type 3351 Valve, the connected pneumatic control pressure (5.8) opposes the force of the spring (5.5) to open or close the valve.

Depending on the design of the valve seat (2) and where the plug (3) is located inside the valve, the valve has two different fail-safe actions which become effective when the pressure is relieved from the diaphragm (5.4) or the supply of control pressure fails.

– **Fail-close valve:** upon failure of the control pressure, the valve is closed by the spring.
– **Fail-open valve:** upon failure of the control pressure, the valve is opened by the spring.

For versions with the optional handwheel (6), a fail-close valve can be opened and a fail-open valve can be closed in the event of control pressure failure.

Direction of flow (see Table 3-1)

The direction of the medium flow in the valve depends on the process medium and the selected fail-safe action.

For fail-close valves which are used to control gases and vapors, the medium must flow in the flow-to-close direction (A → B).

Except for the DN 100 version: the medium must flow in the flow-to-open direction (B → A).

For control applications with liquids, the medium must flow in the flow-to-open direction (B → A).

In fail-open valves, all media must flow in the flow-to-open direction (A → B).

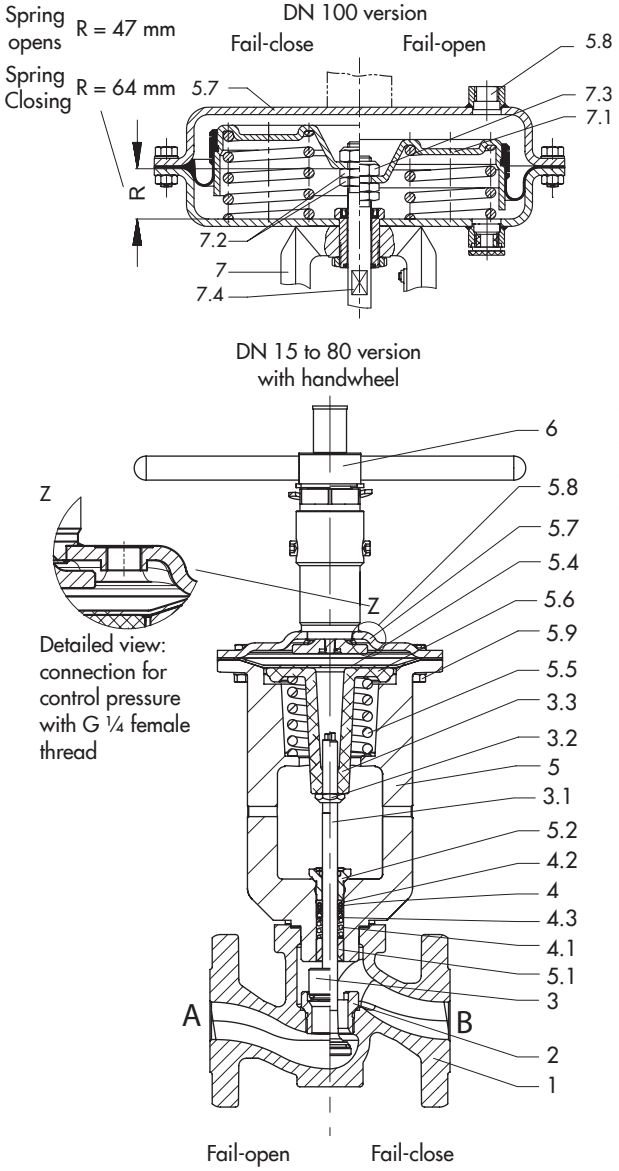
Table 3-1: *Direction of flow*

Fail-safe action	Process medium	Valve size	Flow direction	
			A → B	B → A
Fail-close	Vapor/gas	DN 15 to 80 NPS ½ to 3	FTC [1]	–
Fail-close	Vapor/gas	DN 100 NPS 4	–	FTO [1]
Fail-close	Liquid	DN 15 to 100 NPS ½ to 4	–	FTO [1]
Fail-open	Vapor/gas/liquid	DN 15 to 100 NPS ½ to 4	FTO [1]	–

[1] FTO (flow-to-open)
FTC (flow-to-close)

Control pressure and max. differential pressure Δp

Table 3-5 shows the correlation between control pressure and max. differential pressure Δp based on the process medium used.



1 Valve body
2 Seat
3 Plug
3.1 Plug stem
3.2 Lock nut
3.3 Washer
4 Packing
4.1 Spring
4.2 PTFE V-ring packing
4.3 Washer
5 Valve bonnet
5.1 Guide bushing
5.2 Threaded bushing
5.4 Diaphragm
5.5 Spring
5.6 Spring plate
5.7 Top diaphragm case
5.8 Connection for control pressure
5.9 Nuts and bolts with washers
6 Handwheel (optional)
7 Bonnet with actuator (DN 100 only)
7.1 Diaphragm plate
7.2 Nut/lock nut
7.3 Nut
7.4 Flattened area

Fig. 3-1: *Functional diagram of Type 3351 Pneumatic On/off Valve*

3.1 Versions

Standard version for pressure rating PN 16 to 40 or Class 125 and 300, fail-close or fail-open

Type 3351 · On/off valve with self-adjusting PTFE V-ring packing in valve size DN 15 to 100 (NPS ½ to 4) for medium temperatures from –10 to +220 °C (14 to 428 °F)

Further versions:

- Additional manual override · DN 15 to 80 (NPS ½ to 3)
- Higher ambient temperatures
- Version without PTFE for the tobacco industry
- Adjustable packings
- Packings with special materials

3.2 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.

Test connection

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) at the test connection.

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.

3.3 Accessories

SAMSON provides mounting kits with additional parts to mount valve accessories (e.g. Type 3768 Limit Switch, Type 3730 Positioner). Specify the item number listed in Table 3-6 to order the suitable mounting kit from SAMSON.

3.4 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 Sheet ▶ T 8039.

Noise emissions

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

Table 3-2: *Technical data*

Version	**DIN**				**ANSI**		
Body material	Cast iron EN-GJL-250	Spheroidal graphite iron EN-GJS-400-18-LT	Cast steel 1.0619	Cast stainless steel 1.4408	Cast iron A126B	Cast steel A216 WCC	Cast stainless steel A351 CF8M
Pressure rating	PN 16	PN 16, 25	PN 16, 25, 40		Class 125	Class 150 and 300	Class 150 and 300
Valve size	DN 15 to 100				NPS ½ to 4		
Connecting flanges	Form B according to EN 1092-2		All forms according to EN 1092-1		FF according to ASME B16.1	All forms according to ASME B16.5	All forms according to ASME B16.5
Temperature ranges in °C (°F) · Permissible operating pressures according to pressure-temperature diagrams (see Information Sheet ▶ T 8000-2)							
Medium temperature	−10 to +220 °C (14 to 428 °F)				−10 to +220 °C (14 to 428 °F)		
Ambient temperature	NBR actuator diaphragm: −35 to +100 °C (−31 to +212 °F)						
	EPDM actuator diaphragm: −40 to +150 °C (−40 to +302 °F)						
	FKM actuator diaphragm: −25 to +200 °C (−13 to +392 °F)						
Leakage class	IEC 60534-4: VI				ANSI/FCI 70-2: Class VI		
Conformity	CE · UKCA · EAC						

Table 3-3: *Materials*

Valve	DIN				ANSI		
Body	Cast iron EN-GJL-250	Spheroidal graphite iron EN-GJS-400-18-LT	Cast steel 1.0619	Cast stainless steel 1.4408	Cast iron A126B	Cast steel A216 WCC	Cast stainless steel A351 CF8M
Seat	1.4006			1.4404/ 1.4401	A182 F6a Cl. 2	A182 F6a Cl. 2	316Ti/316L
Plug	1.4404 · Seal made of reinforced PTFE or PEEK						
Body gasket	Graphite on metal core						
Actuator diaphragm	NBR, EPDM or FKM with fabric reinforcement						
Valve bonnet	Cast iron EN-GJL-250	Cast steel 1.0619	Cast steel 1.0619	Bonnet flange 1.4404 welded to bonnet 1.0619	Cast iron A216B	Cast steel A216 WCC	Bonnet flange 316L welded to bonnet A216 WCC
Guide bushing	1.4104			1.4404	1.4104	1.4104	316L
Packing	V-ring packing: PTFE with carbon · Spring: 1.4310						
Threaded bushing	1.4404 + Carbon				316L + Carbon		

Table 3-4: *Process medium and scope of application*

Valve size	DN 15 to 100	NPS ½ to 4
Pressure rating	PN 16, 25 and 40	Class 125, 150 and 300
Ambient temperature range	–35 to +100 °C	–30 to +212 °F
Medium temperature range	–10 to +220 °C	14 to +428 °F

Table 3-5: *Control pressure and max. differential pressure Δp_{max}*

The max. differential pressure depends on the control pressure and can be adapted to the operating conditions by SAMSON before delivery.

Valve size	**DN**	**15**	**20**	**25**	**32**	**40**	**50**	**65**	**80**	**100**
	NPS	**½**	**¾**	**1**	**–**	**1½**	**2**	**2½**	**3**	**4**
Flow coefficient	K_{VS}	6.3	10	14	25	31	40	72	90	170
	C_V	7.5	12	16	–	36	47	84	105	200
Max. supply pressure	DN 15 to 80	8 bar/116 psi								
	DN 100	6 bar/88 psi								
Standard version (PTFE or PEEK plug seal)										
Fail-close										
Min. control pressure to open the valve at Δp_{max}	PTFE	4 bar/58 psi								
	PEEK	5.5 bar/80 psi								
Max. perm. differential pressure Δp_{max}	Vapors, gases A → B	20 bar/290 psi			16 bar/235 psi			10 bar/145 psi		–
	Vapors, gases B → A	–								10 bar/145 psi
	Liquids B → A	16 bar/235 psi			10 bar/145 psi			5 bar/73 psi		
Fail-open										
Min. control pressure to close the valve at Δp_{max}	PTFE/PEEK	4.5 bar/65 psi								
Max. perm. differential pressure Δp_{max}	Vapors, gases, liquids	20 bar/290 psi			16 bar/235 psi			10 bar/145 psi		
Special version for fail-close version with reinforced springs for higher differential pressure Δp (PTFE plug seal only) [1]										
Min. control pressure to open the valve at Δp_{max}		5.5 bar/80 psi								–
Max. perm. differential pressure Δp_{max}	Vapors, gases, liquids [2]	30 bar/435 psi			20 bar/290 psi			7 bar/102 psi		–

1) The standard version with PEEK is already fitted with reinforced springs. Therefore, a special version with PEEK plug seal for higher differential pressures is not available.

2) See Fig. 3-1 direction of flow B → A

Table 3-6: *Accessories*

Accessories	Description	Valve size	Item no. (individual parts)	Item no. (assembly)
Standard	Adapter plate with NAMUR interface according to VDI/VDE 3845,	DN 15 to 80/ NPS ½ to 3	–	1400-9638
Type 3963 Solenoid Valve	Adapter plate for attachment according to VDI/VDE 3845	DN 15 to 80/ NPS ½ to 3	–	1402-0096
Type 3967 Solenoid Valve	Adapter plate for attachment according to VDI/VDE 3845	DN 15 to 80/ NPS ½ to 3	–	1402-0095 [1]
Type 3768 Limit Switch	Mounting accessories for Type 3768	DN 15 to 50/ NPS ½ to 2	1400-6787	1402-0101
	Accessories: stem connector and screws (according to IEC 60534-6-1)		1402-1152	
	Mounting accessories for Type 3768	DN 65 to 100/ NPS 2½ to 4	1400-6787	1402-0102
	Accessories: stem connector and screws (according to IEC 60534-6-1)		1402-1153	
Type 4747 Limit Switch	Mounting accessories for Type 4747	DN 15 to 50/ NPS ½ to 2	–	1402-0097
		DN 65 to 80/ NPS 2½ to 3	–	1402-0098
		DN 100/NPS 4	–	1402-0099
Type 3730 Positioner	Mounting accessories for Type 3730	DN 15 to 50/ NPS ½ to 2	1400-7454	1402-1154
	Accessories: stem connector and screws (according to IEC 60534-6-1)		1402-1152	
	Mounting accessories for Type 3730	DN 65 to 100/ NPS 2½ to 4	1400-7454	1402-1155
	Accessories: stem connector and screws (according to IEC 60534-6-1)		1402-1153	
Limit switch for inductive contact		DN 15 to 50/ NPS ½ to 2	–	1402-0108
		DN 65 to 80/ NPS 2½ to 3	–	1402-0109
		DN 100/NPS 4	–	1402-0110

[1] ▶ AB 11, information on adapter plate with extended NAMUR interface ¼" for SAMSON Type 3351 On/off Valve

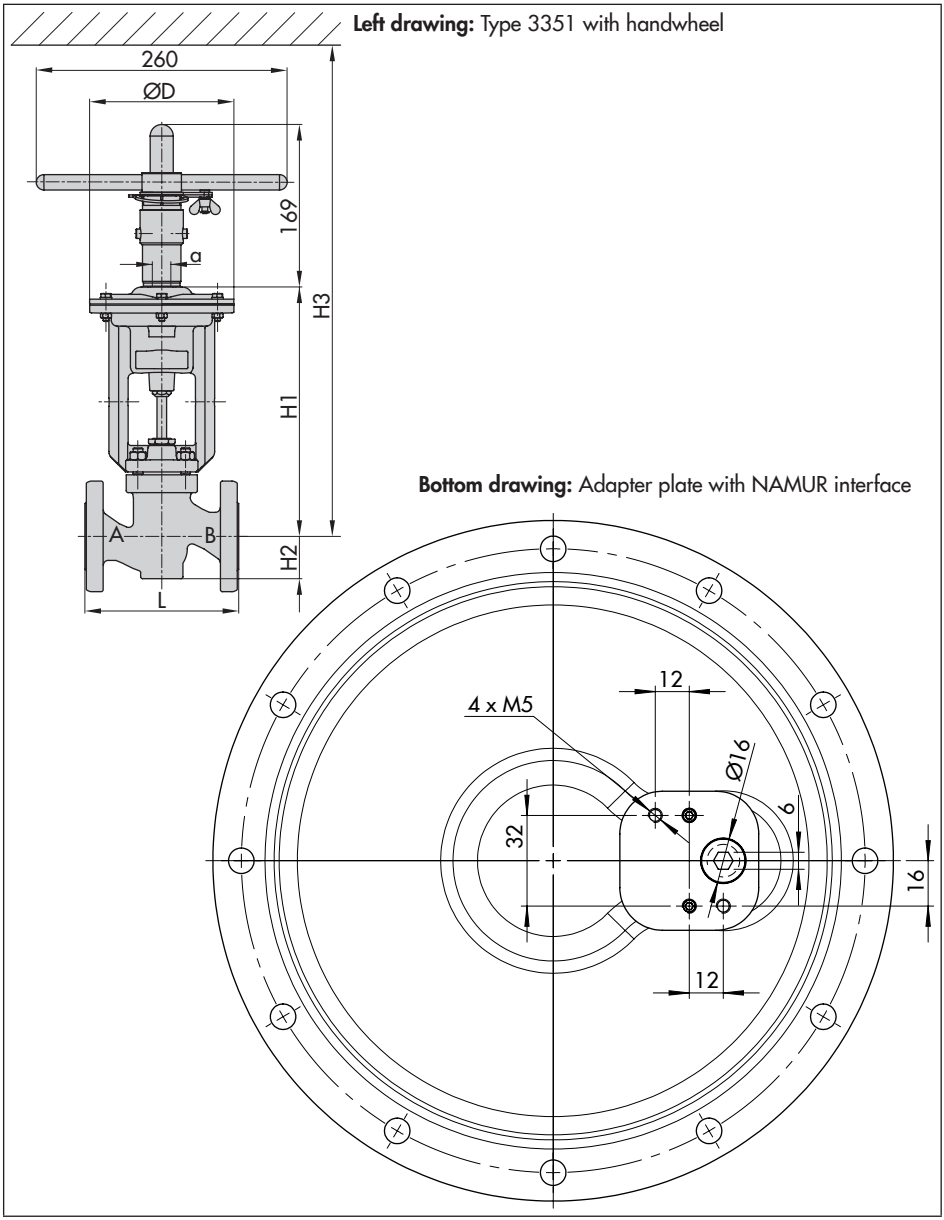
Table 3-7: *Dimensions for Type 3351*

Valve		DN	15	20	25	32	40	50	65	80	100
		NPS	½	¾	1	–	1½	2	2½	3	4
Length L	PN 16/40, flange B, B1	mm	130	150	160	180	200	230	290	310	350
	Class 125, FF Class 150, RF	in	7.25			–	8.75	10	10.88	11.75	13.86
		mm	184			–	222	254	276	298	352
	Class 300, RF	in	7.50	7.62	7.75	–	9.25	10.50	11.50	12.50	14.50
		mm	190	194	197	–	235	267	292	318	368
Diaphragm ØD		mm	150			240			280		390
Control pressure connection		a	G ¼			G ¼			DN 65 and 80: G ¼ DN 100: G ⅜		
Standard version											
H1		mm	260			285			328		485
H2		mm	45			72			98		118
H3 [1]		mm	380			380			415		565

[1] Minimum clearance to remove the actuator; version with handwheel: up to DN 80: +150 mm, DN 100: +210 mm

Table 3-8: *Weights for Type 3351*

Standard version	DN	15	20	25	32	40	50	65	80	100
	NPS	½	¾	1	–	1½	2	2½	3	4
Weight, approx. kg	PN 16, 25 and 40	11	12	12	25	26	29	48	52	70
	Class 125/150	11	12	13	–	23	27	47	52	64
	Class 300	12	13	14	–	25	29	50	55	64


Left drawing: Type 3351 with handwheel
260
ØD
169
a
H3
H1
H2
A
B
L
Bottom drawing: Adapter plate with NAMUR interface
4 x M5
12
Ø16
6
32
16
12

4 Shipment and on-site transport

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

4.1 Accepting the delivered goods

After receiving the shipment, proceed as follows:

1. Check the scope of delivery. Check that the specifications on the 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, if required. 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.

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

➔ *Only use slings which are not attached to the valve body (e.g. to the handwheel) to protect the control valve from tilting while being lifted. This sling must not bear any load.*

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

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.

Note

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

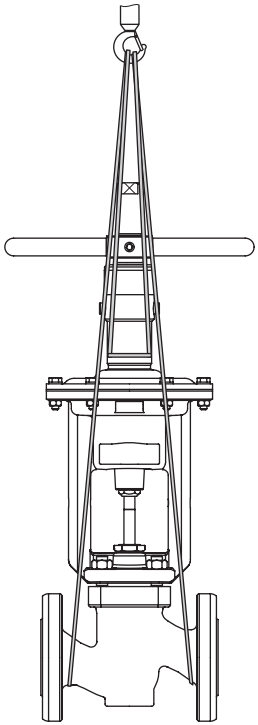


Fig. 4-1: *Lifting points on the control valve*

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.

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 only the slings attached to the valve body bear the load. Other slings only protect the control valve from tilting while being lifted. They must not bear any load. Before lifting the control valve, tighten the sling.

Lifting the control valve

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. If necessary, attach further slings to the control valve and rigging equipment to secure the position of the control valve and prevent it from tilting while it is being lifted.
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.

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 longer storage times.*

Note

We recommend to regularly check 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. 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 for elastomers.

– Store elastomers away from lubricants, chemicals, solutions and fuels.

Tip

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

5 Installation

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

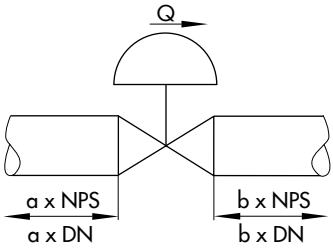
5.1 Installation conditions

Work position

The work position for the control valve is the front view looking onto the operating controls (including valve accessories).

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

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
	Wet 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 wet steam

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 recommended 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 information under "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 and repair work on them.

Mounting position

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

➔ 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.

Valve accessories

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

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). Furthermore, the vent plugs allow air intake to prevent a vacuum from forming in the device.

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

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 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 'Additional fittings' in the 'Design and principle of operation' section) have been installed or prepared as necessary before installing the valve.

NOTICE

Risk of control valve damage due to incorrect insulation.

➔ *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. Components may loosen during transport.

5.3 Mounting the device

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

NOTICE

Risk of 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 (see the 'Tightening torques, lubricants and tools' section in the annex).*

NOTICE

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

➔ *Only use tools approved by SAMSON (see the 'Tightening torques, lubricants and tools' section in the annex).*

5.3.1 Mounting the actuator onto the valve

⚠ WARNING

Risk of personal injury due to preloaded springs.

The valve is fitted with an actuator with preloaded springs that are under tension.

➔ *Before starting any work on the control valve, relieve the compression from the preloaded springs. See 'Relieving the spring compression in the actuator' in the 'Removal' section.*

The Type 3351 Control Valve is delivered by SAMSON with the actuator ready mounted on the valve.

5.3.2 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.*

Direction of flow

The direction of the medium flow in the valve depends on the process medium and the selected fail-safe action:

Table 5-2: *Direction of flow*

Fail-safe action	Process medium	Valve size	Flow direction	
			A → B	B → A
Fail-close	Vapor/gas	DN 15 to 80 NPS ½ to 3	FTC [1]	–
Fail-close	Vapor/gas	DN 100 NPS 4	–	FTO [1]
Fail-close	Liquid	DN 15 to 100 NPS ½ to 4	–	FTO [1]
Fail-open	Vapor/gas/liquid	DN 15 to 100 NPS ½ to 4	FTO [1]	–

[1] FTO (flow-to-open)
FTC (flow-to-close)

Installing the control valve

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 information under 'Lifting the valve' in the 'Shipment and on-site transport' section). Observe the flow direction through the valve (see preceding paragraph “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.

Connecting the control pressure line

➔ Connect the control pressure line to the connection (5.8) on the top diaphragm case (5.7). Connection with G ¼ female thread.

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

Risk of personal injury due to exhaust air being vented.

While the valve is operating, air is vented from the actuator, e.g. 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.

The valve is fitted with an actuator with preloaded springs that are under tension.

➔ *Before starting any work on the control valve, relieve the compression from the preloaded springs. See 'Relieving the spring compression in the actuator' in the 'Removal' section.*

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

5.4.1 Leakage

The plant operator is responsible for performing the leak test and selecting the test method. The leak test must comply with the requirements of the national and international standards that apply at the site of installation.

Tip

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

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

5.4.2 Fail-safe action

➔ Shut off the signal pressure line.

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

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

⚠ WARNING

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

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

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

➔ *Wear protective clothing and safety gloves.*

⚠ WARNING

Risk of personal injury due to 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

Risk of personal injury due to exhaust air being vented.

While the valve is operating, air is vented from the actuator, e.g. 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 'Testing the installed valve' in the 'Installation' 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).

6.1 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.

   Open the shut-off valves first on the upstream pressure side (upstream of the valve). Afterwards, open all the valves on the consumer side (downstream of the valve).
3. Check the valve to ensure it functions properly.

6.2 Function testing

Fail-close version

– The valve must be completely closed at a control pressure of 0 bar.
– The valve must start to open at 3 bar at the latest.
– The valve must be completely open at 6 bar.

Fail-open version

– The valve must still be open at 0.5 bar.
– The valve must be completely closed at 4.5 bar.

Control pressure and max. differential pressure Δp

The 'Control pressure and max. differential pressure Δp_{max}' table in the 'Design and principle of operation' section shows the correlation between control pressure and max. differential pressure Δp based on the process medium used.

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 warm up to the ambient temperature.*

➔ *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

Risk of personal injury due to exhaust air being vented.

While the valve is operating, air is vented from the actuator, e.g. 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 the event of failure of the auxiliary energy supply.

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. Relieve the compression before unblocking the actuator. See 'Relieving the spring compression in the actuator' in the 'Removal' section.
	Diaphragm defective	Replace diaphragm (see the 'Servicing' section) or contact our after-sales service.
	Signal pressure too low	Check the signal pressure. Check the signal pressure line for leakage.
Actuator and plug stem does not stroke through the full range.	Signal pressure too low	Check the signal pressure. Check the signal pressure line for leakage.
	Incorrect setting of valve accessories	Check the settings of the valve accessories.
Increased flow through closed valve (seat leakage)	Dirt or other foreign particles deposited between the seat and plug.	Shut off the section of the pipeline and flush the valve.
	Valve trim is worn out.	Replace seat and plug (see the 'Servicing' section) or contact our after-sales service.
	Facing is damaged.	

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.
	Diaphragm defective	Replace diaphragm (see the 'Servicing' section) or contact our after-sales service.
	Flanged joint loose or gasket worn out	Check the flanged joint. Replace gasket at the flanged joint or contact our after-sales service.

i ***Note***

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

8.2 Emergency action

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

In the event of a valve malfunction:

1. Close the shut-off valves upstream and downstream of the control valve to stop the process medium from flowing through the valve.
2. Perform troubleshooting (see 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 device back into operation after a malfunction

See the 'Start-up' section.

9 Servicing

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

⚠ DANGER

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

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 warm up to the ambient temperature.*
- ➔ *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

Risk of personal injury due to exhaust air being vented.

While the valve is operating, air is vented from the actuator, e.g. 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.

The valve is fitted with an actuator with preloaded springs that are under tension.

➔ *Before starting any work on the control valve, relieve the compression from the preloaded springs. See 'Relieving the spring compression in the actuator' in the 'Removal' section.*

⚠ 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 (see the 'Tightening torques, lubricants and tools' section in the annex).*

NOTICE

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

➔ *Only use tools approved by SAMSON (see the 'Tightening torques, lubricants and tools' section in the annex).*

NOTICE

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

➔ *Only use lubricants approved by SAMSON (see the 'Tightening torques, lubricants and tools' section in the annex).*

i Note

The control valve was checked by SAMSON before delivery.

– *Certain test results certified by SAMSON lose their validity when the valve is opened. Such testing includes seat leakage and leak tests.*
– *The product warranty becomes void if service or repair work not described in these instructions is performed without prior agreement by SAMSON's After-sales Service.*
– *Only use original spare parts by SAMSON, which comply with the original specifications.*

9.1 Periodic testing

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

Tip

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

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.
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.
	Replace the diaphragm (see section 9.4).
	Replace the packing (see section 9.4)
Check the test connection 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).
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.
Check the valve for external damage (e.g. corrosion).	Repair 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.
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).

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).

Tip

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

3. **DN 15 to 80/NPS ½ to 3**: lay out mounting fixture (see Fig. 9-2 and 'Tightening torques, lubricants and tools' section in the annex). The mounting fixture is required to remove and mount the preloaded spring (5.5) in the actuator.

9.3 Installing the valve after service work

1. If the valve has been removed, re-install the valve into the pipeline (see the 'Installation' section).
2. 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.

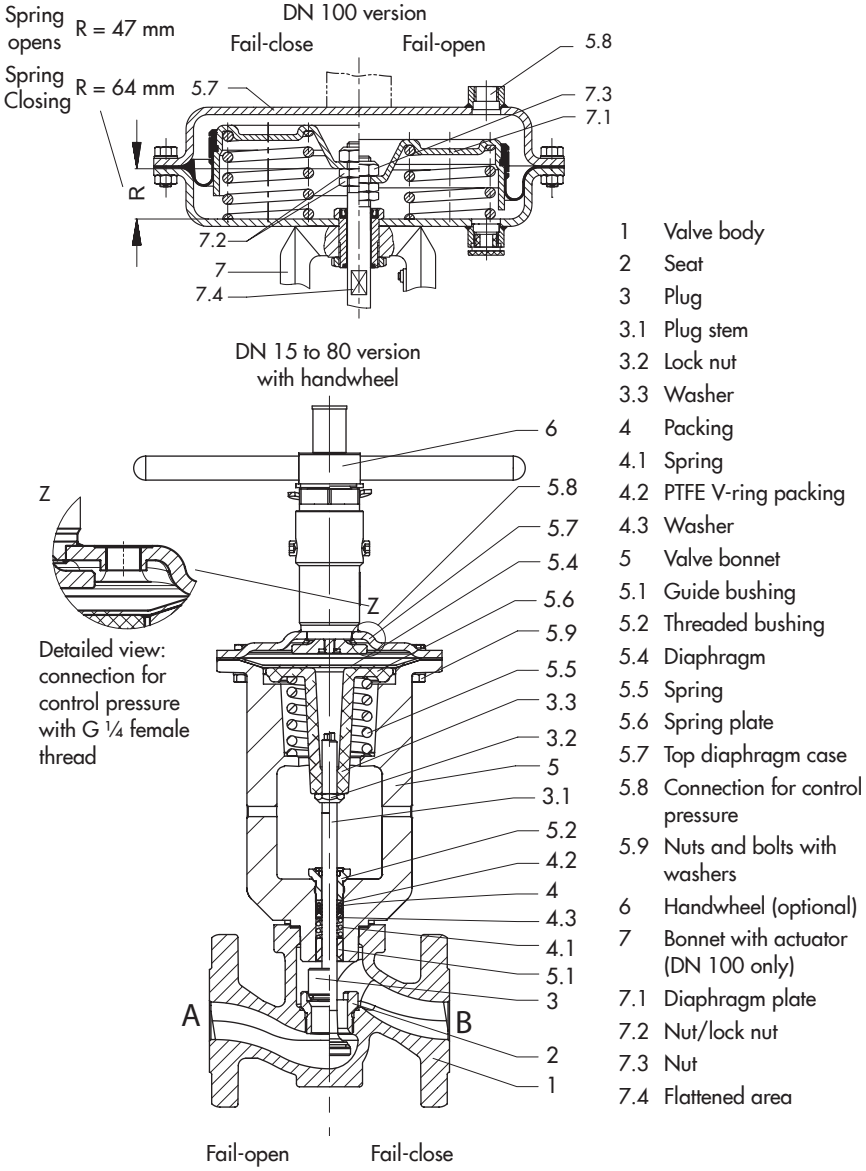
9.4 Service work

➔ 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).

Note

The procedures to disassemble the fail-close and fail-open valve are not the same as the plug is located differently in the valves.



1 Valve body
2 Seat
3 Plug
3.1 Plug stem
3.2 Lock nut
3.3 Washer
4 Packing
4.1 Spring
4.2 PTFE V-ring packing
4.3 Washer
5 Valve bonnet
5.1 Guide bushing
5.2 Threaded bushing
5.4 Diaphragm
5.5 Spring
5.6 Spring plate
5.7 Top diaphragm case
5.8 Connection for control pressure
5.9 Nuts and bolts with washers
6 Handwheel (optional)
7 Bonnet with actuator (DN 100 only)
7.1 Diaphragm plate
7.2 Nut/lock nut
7.3 Nut
7.4 Flattened area

Fig. 9-1: *Type 3351 Pneumatic On/off Valve*

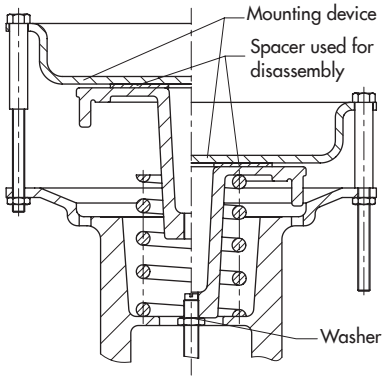


Fig. 9-2: *Mounting device (DN 15 to 80)*

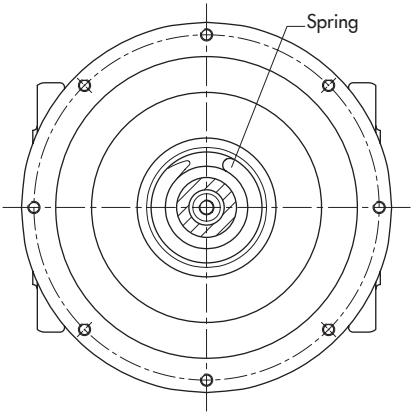


Fig. 9-3: *Alignment of the spring*

9.4.1 Disassembly (DN 15 to 80/NPS ½ to 3)

1. Remove nuts and bolts at the actuator. For versions with handwheel, turn the handwheel to ensure that the spring plate (5.6) is not under tension. Remove the diaphragm case (5.7) and take out the diaphragm.
2. Place shim (around 5 mm thick) on the spring plate (see Fig. 9-2). Place on mounting device and fasten with three clamping bolts and nuts. Turn the nuts until the spring plate (5.6) is evenly loaded slightly. This causes the plug (3) to detach itself from the seat.
3. Completely undo the threaded bushing (5.2). Spray the lock nut (3.2) stuck with adhesive to the plug stem as well as the ends of the plug stem with solvent. Use a hot-air gun to soften the adhesive and undo the lock nut (3.2). Position plug wrench (see the 'Tightening torques, lubricants and tools' section in the annex) or hex screwdriver (DN 65/80) and carefully turn the plug stem clockwise until its height has changed by approx. 6 mm.
4. Unthread the clamping bolts of the mounting device and the plug stem gradually until the plug stem is unscrewed out of the spring plate (5.6). Remove spring plate and spring. Unscrew lock nut (3.2).
5. Remove valve bonnet (5) from valve body and carefully pull it up, for fail-close version over the plug stem and for

fail-open version together with the plug stem.

6. To replace the seat and the plug in the fail-close version, unscrew the seat.
   To proceed, position the seat wrench (see the 'Tightening torques, lubricants and tools' section in the annex of these instructions) on the seat so that its recesses are aligned with the cams of the seat. Guide the seat wrench over the plug stem in the fail-close version. Observe the specified tightening torque (see the 'Tightening torques, lubricants and tools' section in the annex).
   Insert the guide part of the seat wrench into the body and unscrew seat with a suitable tool extension.
7. Carefully clean all parts. Remove gasket (1.2). If the packing leaks, unscrew the threaded bushing (5.2) in the valve bonnet and pull out the individual parts, e.g. V-ring packing (4.2), washer (4.3) and spring (4.1). When replacing the plug, renew the packing rings (4.2) as well. Carefully clean all parts and the packing chamber.

9.4.2 Assembly (DN 15 to 80/ NPS ½ to 3)

1. In the fail-close version, place the plug in the body. In the fail-open version, push plug into the valve bonnet. Thoroughly degrease the thread of the plug stem.
2. Apply a suitable sealant to the seat and screw it in using the seat wrench. Observe the specified tightening torque (see the 'Tightening torques, lubricants and tools' section in the annex).
3. Packing: first insert spring (4.1) and washer (4.3) into the packing chamber, then the V-ring packing parts (4.2) after applying lubricant to them. Loosely screw in threaded bushing (5.2).
4. Insert gasket (1.2) into the body. Place the valve bonnet (5) on the body. In the fail-close version, lift the plug stem and carefully guide it through the packing. Fasten the valve bonnet by evenly tightening the nuts (1.1). Thread the lock nut (3.2) onto the plug stem until it reaches the thread end. Place on washer (3.3).
5. Insert spring (5.5) into the valve bonnet and align it (see Fig. 9-3). Screw spring plate (5.6) on the plug stem by hand, until it rests on the spring. Align the cam of the spring plate cams so that it is positioned above the recess of the diaphragm case.
6. Screw on mounting device. Evenly tighten clamping bolts until the spring is preloaded approx. 6 mm by the spring plate.
7. Apply a suitable adhesive to the thread of the plug stem. Position plug wrench or hex screwdriver and turn the plug stem counterclockwise until it reaches the plug. Continue to gradually tension the mounting device until it rests on the diaphragm case with its three stop bushings in the fail-close version or approx. 2 mm away from it in the fail-open version. In this position, turn the plug counterclockwise

as far as it will go and tighten the lock nut (3.2). Remove the mounting device.

8. Insert diaphragm (5.4), place diaphragm case on top and tighten evenly. Tighten threaded bushing (5.2) as far as it will go.

9.4.3 Disassembly (DN 100/ NPS 4)

1. Remove nuts and bolts at the actuator. For versions with handwheel, turn the handwheel to ensure that the spring plate (7.1) is no longer under tension. Lift off the diaphragm case (5.7).
2. Loosen nut (7.3) and unscrew it while holding the plug stem stationary at the milled part with an open-end wrench (width across flats 14).
3. Remove diaphragm plate and springs. Unscrew nut (7.2) together with lock nut.
4. Carefully lift up the valve bonnet (7). In the fail-close version, lift it over the plug stem and in the fail-open version, lift it together with the plug stem.
5. To replace the seat and the plug in the fail-close version, unscrew the seat. To proceed, position the seat wrench (see the 'Tightening torques, lubricants and tools' section in the annex of these instructions) on the seat so that its recesses are aligned with the cams of the seat. Guide the seat wrench over the plug stem in the fail-close version. Observe the specified tightening torque (see the 'Tightening torques, lubricants and tools' section in the annex). Insert the guide part of the seat wrench into the body and unscrew seat with a suitable tool extension.
6. Carefully clean all parts. Remove gasket (1.2). If the packing leaks, unscrew the threaded bushing (5.2) in the valve bonnet and pull out the individual parts, e.g. V-ring packing (4.2), washer (4.3) and spring (4.1). When replacing the plug, renew the packing rings (4.2) as well. Carefully clean all parts and the packing chamber.

9.4.4 Assembly (DN 100/ NPS 4)

1. In the fail-close version, place the plug in the body. In the fail-open version, push plug into the valve bonnet. Thoroughly degrease the thread of the plug stem.
2. Apply a suitable sealant to the seat and screw it in using the seat wrench. Observe the specified tightening torque (see the 'Tightening torques, lubricants and tools' section in the annex).
3. Packing: first insert spring (4.1) and washer (4.3) into the packing chamber, then the V-ring packing parts (4.2) after applying lubricant to them. Loosely screw in threaded bushing (5.2).
4. Insert gasket (1.2) into the body. Place the valve bonnet (5) on the body. In the fail-close version, lift the plug stem and carefully guide it through the packing. Fasten the valve bonnet by evenly tightening the nuts (1.1). Thread the lock nut

(3.2) onto the plug stem until it reaches the thread end. Place on washer (3.3).

5. Screw nut and lock nut onto the plug stem according to the dimension R (Fig. 9-1) and tighten. On doing so, make sure the plug rests on the seat.
6. Insert springs into the valve bonnet. Align the end of the springs towards the middle.
7. Place diaphragm plate on the end of the plug stem (3.1), while pulling the plug stem as far as it will possibly go out of the valve. Screw nut (7.3) on tight, while holding the plug stem stationary at the milled part with an open wrench (width across flats 14).
8. Align the holes in the diaphragm, place diaphragm case on top and fasten tight by tightening the screws (5.9) evenly.

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.

See the 'Tightening torques, lubricants and tools' section in the annex for further details.

10 Decommissioning

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

⚠ DANGER

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

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 warm up to the ambient temperature.*
- ➔ *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

Risk of personal injury due to exhaust air being vented.

While the valve is operating, air is vented from the actuator, e.g. 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 warm up to the ambient temperature.

11 Removal

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

⚠ WARNING

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

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

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

➔ *Wear protective clothing and safety gloves.*

⚠ WARNING

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

⚠ WARNING

Risk of personal injury due to preloaded springs.

The valve is fitted with an actuator with preloaded springs that are under tension.

➔ *Before starting any work on the control valve, relieve the compression from the preloaded springs (see section 11.2).*

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

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

11.2 Relieving the spring compression in the actuator

a) DN 15 to 80/NPS ½ to 3

To relieve the compression of the springs in the actuator, a mounting fixture is required (see Fig. 11-1 and 'Tightening torques, lubricants and tools' section in the annex).

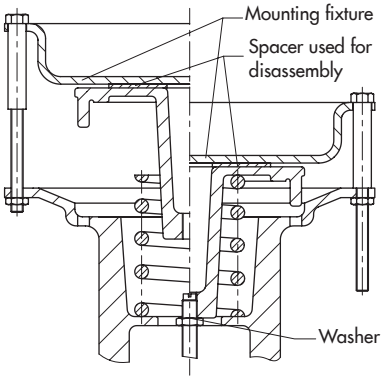


Fig. 11-1: *Mounting device (DN 15 to 80)*

1. Remove nuts and bolts at the actuator. For versions with handwheel, turn the handwheel to ensure that the spring plate (5.6) is not under tension. Remove the diaphragm case (5.7) and take out the diaphragm.
2. Place shim (around 5 mm thick) on the spring plate (see Fig. 11-1). Place on mounting device and fasten with three clamping bolts and nuts. Turn the nuts until the spring plate (5.6) is evenly loaded slightly. This causes the plug (3) to detach itself from the seat.
3. Completely undo the threaded bushing (5.2). Spray the lock nut (3.2) stuck with adhesive to the plug stem as well as the ends of the plug stem with solvent. Use a hot-air gun to soften the adhesive and undo the lock nut (3.2). Position plug wrench (see the 'Tightening torques, lubricants and tools' section in the annex) or hex screwdriver (DN 65/80) and carefully turn the plug stem clockwise until its height has changed by approx. 6 mm.
4. Unthread the clamping bolts of the mounting device and the plug stem gradually until the plug stem is unscrewed out of the spring plate (5.6). Remove spring plate and spring. Unscrew lock nut (3.2).

b) DN 100/NPS 4

The long clamping bolts with long clamping nuts and the short bolts with short nuts are arranged evenly around the circumference of the actuator housing to fasten the top and bottom diaphragm cases together. The springs in the actuator are compressed using the long clamping nuts and bolts.

To relieve the compression of the springs in the actuator, proceed as follows:

1. Unthread and remove the short nuts and bolts (including the washers) on the diaphragm cases.
2. Loosen the long clamping nuts and bolts on the diaphragm cases evenly in a crisscross pattern to gradually relieve the

spring compression. Hold the bolt head stationary with a suitable tool and apply the torque to the nuts.

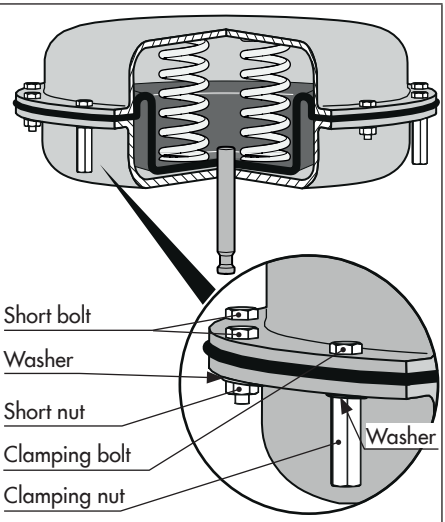


Fig. 11-2: *Preloaded springs (DN 100)*

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 service or repair work.

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

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

12.1 Returning devices to SAMSON

Defective devices can be returned to SAMSON for repair.

Proceed as follows to return devices:

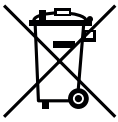
1. Exceptions apply concerning some special device models
   ▶ *www.samsongroup.com > Service & Support > After-sales Service.*
2. Send an e-mail
   ▶ retouren@samsongroup.com to register the return shipment including the following information:
   – Type
   – Article number
   – Configuration ID
   – 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



SAMSON is a producer registered at the following European institution ▶ https://www.ewrn.org/national-registers/national-registers. WEEE reg. no.: DE 62194439/ FR 02566

➔ Observe local, national and international refuse regulations.

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

i ***Note***

We can provide you with a recycling passport according to PAS 1049 [1] on request. Simply e-mail us at aftersalesservice@samsongroup.com giving details of your company address.

Tip

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

[1] PAS 1049 is relevant to electrical and electronic equipment (e.g. electric actuators). This PAS specification does not apply to non-electrical equipment.

14 Certificates

These declarations are included on the next pages:

- Declaration of conformity in compliance with Pressure Equipment Directive 2014/68/EU:
  - Country of origin: France, see page 14-2 to 14-5
- Declaration of conformity according to Machinery Directive 2006/42/EC for Type 3351 Control Valve on page 14-6
- Declaration of incorporation in compliance with Machinery Directive 2006/42/EC for Type 3351 Valve on page 14-7
- REACH declaration of conformity in compliance with the EU Regulation (EC) No. 1907/2006 on pages 14-8 to 14-9
- RoHS declaration of conformity in compliance with Directive 2011/65/EU, 2015/863/EU on page 14-10
- Declaration of conformity in compliance with the 2016 Regulations No. 1105 Pressure Equipment (Safety) Regulations 2016, see pages 14-11 to 14-14
- Declaration of conformity in compliance with the 2008 Regulations No. 1597 Supply of Machinery (Safety) Regulations 2008:
  - Final machinery, see page 14-15
  - Partly completed machinery, see page 14-16
- RoHS 2.0 declaration of conformity in compliance with the requirements in Regulation GB/T26572-2011 on page 14-17
- Declaration of conformity to comply with regulations on food contact on page 14-18 to page 14-19

The certificates shown were up to date at the time of publishing. The latest certificates can be found on our website:
▶ www.samsongroup.com > Products & Applications > Product selector > Valves > 3351

Other optional certificates are available on request.

SAMSON REGULATION S.A.S.

DECLARATION UE DE CONFORMITE
EU DECLARATION OF CONFORMITY

DC014
2022-05

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:

Appareils / Devices	Type	Exécution / Version	Matériel du corps / body Material	PN Class	DN NPS	Fluides / fluids
Vanne de décharge / Back pressure reducing valve	2371-0	DIN	Acier / steel	$P_{max\ T=20°C}$ 10 bar	DN 32 – 50	Tous fluides / all fluids
		ANSI		$P_{max\ T=70°F}$ 150 psi	NPS 1 ¼ – 2	
Détendeur alimentaire / Pressure reducing valve	2371-1	DIN		$P_{max\ T=20°C}$ 10 bar	DN 32 – 50	
		ANSI		$P_{max\ T=70°F}$ 150 psi	NPS 1 ¼ – 2	
Vanne de régulation passage droit / Globe valve	2423	à membrane with diaphragm	Fonte grise / cast iron	PN25	DN 65 - 125	G2 /L2 [1]
		à soufflet with bellow	Fonte sphéroïdale / spheroidal graphite iron	PN25	DN 50 - 125	
			Acier / steel	PN16 PN25 PN40	DN 65 – 100 DN 50 - 100 DN 40 - 100	
Vanne de régulation passage droit / Globe valve	3241	DIN	Fonte grise / cast iron	PN10	DN 125 – 150	G2, L1, L2 [1]
		DIN	Fonte grise & fonte sphéroïdale / cast iron & spheroidal graphite iron	PN16	DN 65 – 125	
		DIN	Fonte sphéroïdale / spheroidal graphite	PN 25	DN 50 - 80	
		ANSI	Fonte grise / cast iron	Cl 125 Cl 250	NPS 2 ½ - 4 NPS 1 ½ - 2	
		DIN	Acier / steel	PN10 PN16 PN25	DN 32 – 100 DN 32 – 50 DN 32 - 40	Tous fluides / all fluids
		ANSI		Cl 150	NPS 1 ¼ - 2	
Vanne de régulation 3 voies / 3-way Valve	3244	DIN	Fonte grise / cast iron	PN10 PN16	DN 125 – 150 DN 65 – 125	G2, L1, L2 [1]
		DIN	Acier / steel	PN10 PN16 PN25	DN 32 – 100 DN 32 – 50 DN 32 - 40	Tous fluides / all fluids
		ANSI		Cl 150	NPS 1 ¼ - 2	
Vanne de régulation passage droit / Globe valve	3251	DIN	Acier / steel	PN16 PN25	DN 32 – 50 DN 32 – 40	Tous fluides / all fluids
		ANSI		Cl 150	NPS 1 ¼ - 2	
Vanne équerre / Angle valve	3256	DIN	Acier / steel	PN16	DN 32 – 50	Tous fluides / all fluids
		ANSI		Cl 150	NPS 1 ¼ - 2	
Vanne à segment sphérique / Segment ball valve	3310	DIN	Acier / steel	PN10 PN16 PN25	DN 40 – 50 DN 80 – 100 DN 40	Tous fluides / all fluids
		ANSI		Cl 150	NPS 1 ½ – 2	
Vanne de régulation passage droit / Globe valve	3321	DIN	Fonte grise / cast iron	PN16	DN 65 – 100	G2, L1, L2 [1]
		ANSI		Cl 125	NPS 2 ½ - 4	
		DIN	Fonte sphéroïdale / spheroidal graphite iron	PN25	DN 50 – 80	
		ANSI	Acier / steel	Cl 150	NPS 1 ½ - 2	Tous fluides / all fluids
Vanne de régulation 3 voies / 3-way Valve	3323	DIN	Fonte grise / cast iron : GJL-250	PN16	DN 65 – 100	G2, L1, L2 [1]
		DIN	Fonte sphéroïdale / spheroidal graphite iron	PN25	DN 50 – 80	
Vanne papillon / Butterfly valve	3331	DIN	Acier / steel	PN10	DN 100	Tous fluides / all fluids
Vanne à membrane / Diaphragm valve	3345	DIN	Acier / steel	$P_{max\ T=20°C}$ 10 bar $P_{max\ T=20°C}$ 16 bar	DN 32 – 100 DN 32 – 50	Tous fluides / all fluids
		ANSI		$P_{max\ T=70°F}$ 150 psi or 230 psi	NPS 1 ¼ – 2	
		DIN	Fonte grise & fonte sphéroïdale / cast iron & spheroidal graphite iron	$P_{max\ T=20°C}$ 10 bar $P_{max\ T=20°C}$ 16 bar $P_{max\ T=20°C}$ 40 bar	DN 125 – 150 DN 65 – 125 DN 40 – 50	G2, L1, L2 [1]
		ANSI		$P_{max\ T=70°F}$ 150 psi $P_{max\ T=70°F}$ 230 psi $P_{max\ T=70°F}$ 580 psi	NPS 2 ½ – 4 NPS 2 ½ – 5 NPS 1 ½ – 2	

SAMSON REGULATION • 1 rue Jean Corona • 69120 Vaulx-en-Velin
Tél.: +33 (0)4 72 04 75 00 • Fax: +33 (0)4 72 04 75 75 • E-mail: france@samsongroup.com Internet: www.samson.fr
BNP Paribas
N° compte 0002200215245 • Banque 3000401857
IBAN FR7630004018570002200215245 • BIC (code SWIFT) BNPAFRPPVBE

SAMSON REGULATION S.A.S.

DECLARATION UE DE CONFORMITE
EU DECLARATION OF CONFORMITY

DC014
2022-05

Module A / Modul A

Appareils / Devices	Type	Exécution / Version	Matériel du corps / body Material	PN Class	DN NPS	Fluides / fluids
Vanne alimentaire / Sanitary valve	3347	DIN	Acier / steel	$P_{max\ T=20°C}$ 10 bar	DN 125 – 150	G2, L1, L2 [1]
		ANSI		$P_{max\ T=70°F}$ 150 psi	NPS 5 – 6	
Vanne aseptique / Aseptic valve	3349	DIN	Acier / steel	$P_{max\ T=20°C}$ 10 bar	DN 32 – 100	Tous fluides / all fluids
				$P_{max\ T=20°C}$ 16 bar	DN 32 – 50	
				$P_{max\ T=20°C}$ 25 bar	DN 32 – 40	
		ANSI		$P_{max\ T=70°F}$ 150 psi	NPS 1 ¼ – 4	
				$P_{max\ T=70°F}$ 230 psi	NPS 1 ¼ – 2	
				$P_{max\ T=70°F}$ 360 psi	NPS 1 ¼ – 1 ½	
Vanne Tout ou Rien / On-Off Valve	3351	DIN	Acier / steel	PN16 PN25	DN 32 – 50 DN 32 – 40	Tous fluides / all fluids
		ANSI		Cl 150	NPS 1 ¼ – 2	
		DIN	Fonte grise & fonte sphéroïdale / cast iron & spheroidal graphite iron	PN16	DN 65 – 100	G2, L1, L2 [1]
			Fonte sphéroïdale / spheroidal graphite iron	PN25	DN 50 – 80	
		ANSI	Fonte grise / cast iron	Cl 125	NPS 2 ½ – 4	
Bride de mesure / Measure flange	5090	DIN	Acier / steel	PN6 PN10 PN16 PN25 PN40	DN 200 – 500 DN 125 – 350 DN 65 – 200 DN 50 – 125 DN 40 – 100	G2, L2 [1]

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

la conformité avec le règlement suivant : / the conformity with the following requirement :

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	**2014/68/UE 2014/68/EU**	**Du / of 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 § 1	**Module A / Modul A**	

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

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

Vaulx-en-Velin, le 23/05/22

Bruno Soulas
Directeur Stratégie et Développement / Head of Strategy and Development

Joséphine Signoles-Fontaine
Responsable du service QSE / Head of QSE Department

SAMSON REGULATION • 1 rue Jean Corona • 69120 Vaulx-en-Velin
Tél.: +33 (0)4 72 04 75 00 • Fax: +33 (0)4 72 04 75 75 • E-mail: france@samsongroup.com Internet: www.samson.fr

Société par actions simplifiée au capital de 10 000 000 € • Siège social : Vaulx-en-Velin

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

Crédit Lyonnais N° compte 0000060035B41 • Banque 3000201936

SAMSON REGULATION S.A.S.

DECLARATION UE DE CONFORMITE
EU DECLARATION OF CONFORMITY

DC012
2023-06

Module H / Modul H, N°/ Nr CE-0062-PED-H-SAM 001-23-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:

Appareils / Devices	Type	Exécution / Version	Matériel du corps / body Material	PN Class	DN NPS	Fluides / fluids
Vanne de régulation passage droit / globe valve	3241	DIN	Fonte grise & fonte sphéroïdale / cast iron & spheroidal graphite iron	PN 16	DN 150	G2, L1, L2 [1]
		ANSI		Cl 125	NPS 6	
		DIN	Fonte sphéroïdale / spheroidal graphite iron	PN 25	DN 100 – 150	
		DIN	Acier / steel	PN10 PN16 PN25 PN40	DN 125 – 150 DN 65 – 150 DN 50 – 150 DN 32 – 150	Tous fluides / all fluids
		ANSI		Cl 150 Cl 300	NPS 2 ½ - 6 NPS 1¼ – 6	
Vanne de régulation 3 voies / 3-way Valve	3244	DIN	Fonte grise / cast iron	PN 16	DN 150	G2, L1, L2 [1]
		DIN	Acier / steel	PN10 PN16 PN25 PN40	DN 125 – 150 DN 65 – 150 DN 50 – 150 DN 32 – 150	Tous fluides / all fluids
		ANSI		Cl 150 Cl 300	NPS 2 ½ – 6 NPS 1¼ – 6	
Vanne de régulation passage droit / globe valve	3251	DIN	Acier / steel	PN16 PN25 PN40 – 400	DN 65 – 150 DN 50 – 150 DN 32 – 150	Tous fluides / all fluids
		ANSI		Cl 150 Cl 300 - 2500	NPS 2 ½ – 6 NPS 1 ¼ – 6	
Vanne haute pression / High pressure valve	3252	DIN	Acier / steel	PN40 – 400	DN 32 – 80	Tous fluides / all fluids
		ANSI		Cl 300 - 2500	NPS 1 ¼ – 3	
Vanne équerre / Angle valve	3256	DIN	Acier / steel	PN16 PN40 – 400	DN 65 – 150 DN 32 – 150	Tous fluides / all fluids
		ANSI		Cl 150 Cl 300 - 2500	NPS 2 ½ – 6 NPS 1 ¼ – 6	
Vanne à segment sphérique / Segment ball valve	3310	DIN	Acier / steel	PN10 PN16 PN25 PN40	DN 150 DN 80 – 150 DN 50 – 150 DN 40 – 150	Tous fluides / all fluids
		ANSI		Cl 150 Cl 300	NPS 3 – 6 NPS 1 ½ – 6	
Vanne de régulation passage droit / globe valve	3321	DIN	Fonte sphéroïdale / spheroidal graphite iron	PN 25	DN 100	G2, L1, L2 [1]
		DIN	Acier / steel	PN16 PN40	DN 65 – 100 DN 32– 100	Tous fluides / all fluids
		ANSI		Cl 150 Cl 300	NPS 2 ½ – 4 NPS 1½ – 4	
Vanne de régulation 3 voies / 3-way Valve	3323	DIN	Fonte sphéroïdale / spheroidal graphite iron	PN 25	DN 100	G2, L1, L2 [1]
		DIN	Acier / steel	PN16 PN40	DN 65 – 100 DN 32 – 100	Tous fluides / all fluids
		ANSI		Cl 150 Cl 300	NPS 2 ½ – 4 NPS 1¼ – 2	
Vanne papillon / Butterfly valve	3331	DIN	Acier / steel	PN10 PN16 – 50	DN 150 – 400 DN 100 – 400	Tous fluides / all fluids
		ANSI		Cl 150 – 300	NPS 4 – 16	
Vanne à membrane / Diaphragm valve	3345	ANSI	Fonte grise & fonte sphéroïdale / cast iron & spheroidal graphite iron	$P_{max\ T=70°F}$ 150 psi	NPS 5 – 6	G2, L1, L2 [1]
				$P_{max\ T=70°F}$ 230 psi	NPS 6	
			Acier / steel	$P_{max\ T=70°F}$ 150 - 230 psi	NPS 2 ½ – 6	Tous fluides / all fluids

SAMSON REGULATION • 1 rue Jean Corona • 69120 Vaulx-en-Velin
Tél.: +33 (0)4 72 04 75 00 • Fax: +33 (0)4 72 04 75 75 • E-mail: france@samsongroup.com Internet: www.samson.fr

Société par actions simplifiées au capital de 10 000 000 € • Siège social : Vaulx-en-Velin
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 0000060035B41 • Banque 3000201936
IBAN FR9830002019360000060035B41 • BIC (code SWIFT) CRLYFRPP

SAMSON REGULATION S.A.S.

DECLARATION UE DE CONFORMITE
EU DECLARATION OF CONFORMITY

DC012
2023-06

Module H / Modul H, N°/ Nr CE-0062-PED-H-SAM 001-23-FRA

Appareils / Devices	Type	Exécution / Version	Matériel du corps / body Material	PN Class	DN NPS	Fluides / fluids
Vanne alimentaire / Sanitary valve	3347	DIN	Acier / steel	$P_{max\ T=20°C}$ 16 bar $P_{max\ T=20°C}$ 40 bar $P_{max\ T=20°C}$ 63 bar	DN 150 DN 65 – 150 DN 32 – 150	G2, L1, L2 [1]
		ANSI		$P_{max\ T=70°F}$ 230 psi $P_{max\ T=70°F}$ 580 psi $P_{max\ T=70°F}$ 910 psi	NPS 6 NPS 2 ½ – 6 NPS 1 ¼ – 6	
Vanne Tout ou Rien / On-Off Valve	3351	DIN	Fonte sphéroïdale / spheroidal graphite iron	PN 25	DN 100	G2, L1, L2 [1]
		DIN	Acier / steel	PN16 PN25 PN40	DN 65 – 100 DN 50 – 100 DN 32 – 100	Tous fluides / all fluids
		ANSI		Cl 150 Cl 300	NPS 2 ½ – 4 NPS 1 ¼ – 4	
Bride de mesure / Measure flange	5090	DIN	Acier / steel	PN10 PN16 PN25 PN40	DN 400 – 500 DN 250 – 500 DN 150 – 500 DN 125 – 500	G2, L2 [1]

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

la conformité avec le règlement suivant : / the conformity with the following requirement:

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	**2014/68/UE 2014/68/EU**	**Du / of 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 § 1	**Module H / Modul H**	**Certificat n° CE-0062-PED-H-SAM 001-23-FRA**

Normes techniques appliquées / Technical standards applied :
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:

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

Vaulx-en-Velin, le 19/06/23

Bruno Soulas
Directeur Général – Directeur Stratégie et Développement /
Director general - Head of Strategy and Development

Joséphine Signoles-Fontaine
Responsable du service QSE / Head of QSE department

EU DECLARATION OF CONFORMITY

DC035
2020-11

Declaration of Conformity of Final Machinery

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

For the following products:
Pneumatic On / Off Valve Type 3351

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

For product descriptions of the valve and actuator, refer to:
- Type 3351 Valve: Mounting and Operating Instructions EB 8039

Valve accessories (e.g. positioners, limit switches, solenoid valves, lock-up valves, supply pressure regulators, volume boosters and quick exhaust valves) are classified as machinery components in this declaration of conformity and do not fall within the scope of the Machinery Directive as specified in § 35 and § 46 of the Guide to Application of the Machinery Directive 2006/42/EC issued by the European Commission. In the SAMSON Manual H 02 titled "Appropriate Machinery Components for SAMSON Pneumatic Control Valves with a Declaration of Conformity of Final Machinery", SAMSON defines the specifications and properties of appropriate machinery components that can be mounted onto the above specified final machinery.

Referenced technical standards and/or specifications:
- VCI, VDMA, VGB: "Leitfaden Maschinenrichtlinie (2006/42/EG) — Bedeutung für Armaturen, Mai 2018" [German only]
- VCI, VDMA, VGB: "Zusatzdokument zum „Leitfaden Maschinenrichtlinie (2006/42/EG) — Bedeutung für Armaturen vom Mai 2018" [German only], based on DIN EN ISO 12100:201 1-03

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

Persons authorized to compile the technical file:
SAMSON REGULATION SAS – 1 rue Jean Corona – FR-69120 VAULX-EN-VELIN
Vaulx-en-Velin, 17th November 2020

Michael Lachenal-Chevallet
R&D Manager

Joséphine Signoles-Fontaine
QSE Manager

DECLARATION OF INCORPORATION

DC045
2022-12

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

For the following products:
Type 3351 Pneumatic ON/OFF Valve

We certify that the Type 3351 Pneumatic ON/OFF 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 www.samsongroup.com.

For product descriptions of the valve, refer to Mounting and Operating Instructions EB 8039.

Referenced technical standards and/or specifications:
- VCI, VDMA, VGB: "Leitfaden Maschinenrichtlinie (2006/42/EG) — Bedeutung für Armaturen, Mai 2018" [German only]
- VCI, VDMA, VGB: "Zusatzdokument zum „Leitfaden Maschinenrichtlinie (2006/42/EG) — Bedeutung für Armaturen vom Mai 2018" [German only], based on DIN EN ISO 12100:201 1-03

Comments:
- See mounting and operating instructions for residual hazards.
- Also observe the referenced documents listed in the mounting and operation instructions.

Persons authorized to compile the technical file:
SAMSON REGULATION SAS – 1 rue Jean Corona – FR-69120 VAULX-EN-VELIN
Vaulx-en-Velin, 23rd December 2022

Bruno Soulas
General Director
Head of Strategy and Development

Joséphine Signoles-Fontaine
Head of QSE department

DECLARATION OF CONFORMITY

DC007
2021-12

Regulation (EU) No. 1907/2006 (REACH, Registration, Evaluation, Authorisation and Restriction of Chemicals); United Nations Globally Harmonised System (UN GHS); and WFD, Waste Framework Directive (EU) 2008/98/EC, Article 9(1)(i) as amended by Directive (EU) 2018/851 of 30 May 2018, and their national implementations

---

We hereby certify that we are well informed about the REACH regulation, which entered into force on 1 June 2007 and have determined the applicable consequences and obligations, especially pre-registration and registration of substances, notifications to public bodies, authorization, and restriction. We manufacture "articles" as defined in the REACH Regulation Article 2. As a result, we are a "downstream user" in most cases. We do not produce any substances or mixtures that we sell.

Concerning the registration of the relevant substances we use to manufacture our products, we can inform you based on REACH Article 10 that, on the basis of the information presently available to us, we do not currently reach the threshold of one ton per year. It is possible for us to provide more precise data if required.

Concentration of SVHC (substances of very high concern) in SAMSON Products

We have a duty to communicate information to our customers on substances contained in our products according to Article 33 of the REACH Regulation: SAMSON calculate the contents of the substances in every individual article (e.g. nuts, bolts etc.) included in a bill of materials separately, following the judgment by the Court of Justice of the European Union concerning case C-106/14 of 16 October 2015, "Once an article, always an article" (O5A). SAMSON refer to a Candidate List of SVHC, that lists up the substances that we report:

These substances are often determined based on the classification of chemical substances and mixtures in the United Nations Global Harmonized System (UN GHS). We implement these systematics in Europe by following the Regulation (EC) No. 1272/2008 (CLP) on classification, labeling and packaging of substances and mixtures, forming a unified approach with the REACH Regulation. Both Safety Data Sheets (SDS, MSDS) for chemicals and chemical mixtures as well as SAMSON Material Data Sheets (MDS) for declaring a material and its substance content are prescribed by these regulations, based on an official list:

Compliance with the Candidate List of SVHC for Authorisation

Should you need to make reference to the most recent list, kindly see to the version published on the Internet, with the latest SAMSON references. Go to the following website to check whether the duty to communicate information according to REACH Article 33 applies to a SAMSON product:
https://www.samsongroup.com/en/about-samson/material-compliance/reach-regulation/#c2723
Also, we frequently cite further SVHC details on the delivery papers.

The Candidate List according to Article 59 (1, 10) of Regulation (EC) No. 1907/2006 (REACH) was first published on 1 September 2008. Since then, it is constantly expanded every six months by the European Chemicals Agency (ECHA). The Candidate List is regularly updated around the middle and end of every year. It now comprises of over 200 substances:
https://www.echa.europa.eu/web/guest/candidate-list-table (in English).

As a result, it is an on-going process to check whether our products contain SVHC in a concentration greater than 0.1% (w/w). We are in close contact with our suppliers as part of this process and we will inform you if we discover that any changes apply to us.

SCIP Database, "Substances of Concern In articles as such or in complex objects (Products)"

As legally requested by the Waste Framework Directive (WFD) since 5 January 2021 and the respective national implementation, SAMSON AG input the necessary data into the European Chemical Agency's (ECHA) SCIP Database.

The REACH Candidate List is updated every six months. SAMSON will not issue, every half a year, any more statements or fill in specific, non-standardized documents of proof in over 20 different formats that our articles are not affected.

It is legally only required to communicate the affected articles and (if the need be) their sub-articles to customers if SVHC surpass 0.1 % weight of weight in in articles or in separate articles as a part of more complex articles., as specified in REACH Article 33. Also, protective measures against SVHC have to be stated where applicable.

SAMSON REGULATION SAS
Vaulx-en-Velin, 14 December 2021

Bruno Soulas
Director of Strategy and Development

Joséphine Signoles-Fontaine
Head of QSE Department

SAMSON REGULATION S.A.S.

DECLARATION UE DE CONFORMITE
EU DECLARATION OF CONFORMITY
EU KONFORMITÄTSERKLÄRUNG

DC008
2021-12

La présente déclaration de conformité est établie sous la seule responsabilité du fabricant.
This declaration of conformity is issued under the sole responsibility of the manufacturer.
Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller.

Nous certifions pour les produits suivants en exécution standard :
For the following products in standard execution:
Für die folgenden Produkte in Standard-Ausführung:

Type / type / Typ : 2371, 3252, 3310, 3331, 3347, 3349, 3351, 3710, 3711, 3776, 3777, 3812, 3963, 3964, 3967, 4708, 4746, 5090, Samstation

sont conformes à la législation applicable harmonisée de l'Union :
the conformity with the relevant Union harmonization legislation is declared with:
wird die Konformität mit den einschlägigen Harmonisierungsrechtsvorschriften der Union bestätigt:

RoHS 2011/65/EU, 2015/863/EU **EN 50581:2012, IEC 63000:2016**

Fabricant :
Manufacturer:
Hersteller:

SAMSON REGULATION S.A.S.
1, rue Jean Corona
69520 Vaulx-en-Velin
France

Vaulx-en-Velin, le 14/12/21

Au nom du fabricant,
On behalf of the Manufacturer,
Im Namen des Herstellers,

SAMSON REGULATION S.A.S.

Joséphine SIGNOLES-FONTAINE
Responsable QSE

UK DECLARATION OF CONFORMITY

DC062
2022-12

The Pressure Equipment (Safety) Regulations 2016 Module A

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

Devices	Type	Version	Body Material	PN Class	DN NPS	Fluids
Back pressure reducing valve	2371-0	DIN	Steel	$P_{max\ T = 20°C}$ 10 bar	DN 32 – 50	All fluids
		ANSI		$P_{max\ T= 70°F}$ 150 psi	NPS 1 ¼ – 2	
Pressure reducing valve	2371-1	DIN		$P_{max\ T = 20°C}$ 10 bar	DN 32 – 50	
		ANSI		$P_{max\ T= 70°F}$ 150 psi	NPS 1 ¼ – 2	
Globe valve	2423	à membrane with diaphragm	Cast iron	PN25	DN 65 - 125	G2 /L2 [1]
		à soufflet with bellow	Spheroidal graphite iron	PN25	DN 50 - 125	
			Steel	PN16 PN25 PN40	DN 65 – 100 DN 50 - 100 DN 40 - 100	
Globe valve	3241	DIN	Cast iron	PN10	DN 125 – 150	G2, L1, L2 [1]
		DIN	Cast iron & spheroidal graphite iron	PN16	DN 65 – 125	
		DIN	Spheroidal graphite	PN 25	DN 50 - 80	
		ANSI	Cast iron	Cl 125 Cl 250	NPS 2 ½ - 4 NPS 1 ½ - 2	
		DIN	Steel	PN10 PN16 PN25	DN 32 – 100 DN 32 – 50 DN 32 - 40	All fluids
		ANSI		Cl 150	NPS 1 ¼ - 2	
3-way Valve	3244	DIN	Cast iron	PN10 PN16	DN 125 – 150 DN 65 – 125	G2, L1, L2 [1]
		DIN	Steel	PN10 PN16 PN25	DN 32 – 100 DN 32 – 50 DN 32 - 40	All fluids
		ANSI		Cl 150	NPS 1 ¼ - 2	
Globe valve	3251	DIN	Steel	PN16 PN25	DN 32 – 50 DN 32 – 40	All fluids
		ANSI		Cl 150	NPS 1 ¼ - 2	
Angle valve	3256	DIN	Steel	PN16	DN 32 – 50	All fluids
		ANSI		Cl 150	NPS 1 ¼ - 2	
Segment ball valve	3310	DIN	Steel	PN10 PN16 PN25	DN 40 – 50 DN 80 – 100 DN 40	All fluids
		ANSI		Cl 150	NPS 1 ½ – 2	
Globe valve	3321	DIN	Cast iron	PN16	DN 65 – 100	G2, L1, L2 [1]
		ANSI		Cl 125	NPS 2 ½ - 4	
		DIN	Spheroidal graphite iron	PN25	DN 50 – 80	
		ANSI	Steel	Cl 150	NPS 1 ½ - 2	All fluids
3-way Valve	3323	DIN	Cast iron : GJL-250	PN16	DN 65 – 100	G2, L1, L2 [1]
		DIN	Spheroidal graphite iron	PN25	DN 50 – 80	
Butterfly valve	3331	DIN	Steel	PN10	DN 100	All fluids
Diaphragm valve	3345	DIN	Steel	$P_{max\ T = 20°C}$ 10 bar $P_{max\ T = 20°C}$ 16 bar	DN 32 – 100 DN 32 – 50	All fluids
		ANSI		$P_{max\ T= 70°F}$ 150 psi or 230 psi	NPS 1 ¼ – 2	
		DIN	Cast iron & spheroidal graphite iron	$P_{max\ T = 20°C}$ 10 bar $P_{max\ T = 20°C}$ 16 bar $P_{max\ T = 20°C}$ 40 bar	DN 125 – 150 DN 65 – 125 DN 40 – 50	G2, L1, L2 [1]
		ANSI		$P_{max\ T= 70°F}$ 150 psi $P_{max\ T= 70°F}$ 230 psi $P_{max\ T= 70°F}$ 580 psi	NPS 2 ½ – 4 NPS 2 ½ – 5 NPS 1 ½ – 2	

SAMSON REGULATION SAS • 1 rue Jean Corona • 69120 Vaulx-en-Velin
Tel.: +33 (0)4 72 04 75 00 • E-mail: france@samsongroup.com • Internet: www.samson.fr

Société par actions simplifiée au capital de 10 000 000 € • Siège social : Vaulx-en-Velin
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 00000603SB41 • Banque 3000201936
IBAN FR9830002019360000060035B41 • BIC (code SWIFT) CRLYFRPP

WEEE N° FR023665

UK DECLARATION OF CONFORMITY

DC062
2022-12

Devices	Type	Version	Body Material	PN Class	DN NPS	Fluids
Sanitary valve	3347	DIN	Steel	$P_{max\ T=20°C}$ 10 bar	DN 125 – 150	G2, L1, L2 [1]
		ANSI		$P_{max\ T=70°F}$ 150 psi	NPS 5 – 6	
Aseptic valve	3349	DIN	Steel	$P_{max\ T=20°C}$ 10 bar $P_{max\ T=20°C}$ 16 bar $P_{max\ T=20°C}$ 25 bar	DN 32 – 100 DN 32 – 50 DN 32 – 40	All fluids
		ANSI		$P_{max\ T=70°F}$ 150 psi $P_{max\ T=70°F}$ 230 psi $P_{max\ T=70°F}$ 360 psi	NPS 1 ¼ – 4 NPS 1 ¼ – 2 NPS 1 ¼ – 1 ½	
On-Off Valve	3351	DIN	Steel	PN16 PN25	DN 32 – 50 DN 32 – 40	All fluids
		ANSI		Cl 150	NPS 1 ¼ – 2	
		DIN	Cast iron & spheroidal graphite iron	PN16	DN 65 – 100	G2, L1, L2 [1]
			Spheroidal graphite iron	PN25	DN 50 – 80	
		ANSI	Cast iron	Cl 125	NPS 2 ½ – 4	
Measure flange	5090	DIN	Steel	PN6 PN10 PN16 PN25 PN40	DN 200 – 500 DN 125 – 350 DN 65 – 200 DN 50 – 125 DN 40 – 100	G2, L2 [1]

[1] Gases Acc. to article 4 paragraphs 1.c) i)
Liquids Acc. to article 4 paragraphs 1.c) ii)

the conformity with the following Union harmonization legislation:

Legislation : STATUTORY INSTRUMENTS – 2016 No. 1105 – CONSUMER PROTECTION HEALTH AND SAFETY – The Pressure Equipment (Safety) Regulations 2016	**PE(S)R 2016**	**2022**
Applied conformity assessment procedure for fluids according to Article 4 § 1	**2014/68/UE Modul A**	

Applied designated standards and technical specifications: EN 12516-2, EN 12516-3, ASME B16.34, EN 60534-4, EN 1092-1

Manufacturer : Samson Régulation SAS, 1, rue Jean Corona, FR-69120 VAULX-EN-VELIN

Vaulx-en-Velin, 23rd December 2022

Bruno Soulas
General Director
Head of Strategy and Development

Joséphine Signoles-Fontaine
Head of QSE department

UK DECLARATION OF CONFORMITY

DC064
2022-12

The Pressure Equipment (Safety) Regulations 2016 Module H / N° CE-0062-PED-H-SAM 001-20-FRA-rev-A

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

Devices	Type	Version	Body Material	PN Class	DN NPS	Fluids
Globe valve	3241	DIN	Cast iron & spheroidal graphite iron	PN 16	DN 150	G2, L1, L2 [1]
		ANSI		Cl 125	NPS 6	
		DIN	Spheroidal graphite iron	PN 25	DN 100 – 150	
		DIN	Steel	PN10 PN16 PN25 PN40	DN 125 – 150 DN 65 – 150 DN 50 – 150 DN 32 – 150	All fluids
		ANSI		Cl 150 Cl 300	NPS 2 ½ - 6 NPS 1¼ – 6	
3-way Valve	3244	DIN	Cast iron	PN 16	DN 150	G2, L1, L2 [1]
		DIN	Steel	PN10 PN16 PN25 PN40	DN 125 – 150 DN 65 – 150 DN 50 – 150 DN 32 – 150	All fluids
		ANSI		Cl 150 Cl 300	NPS 2 ½ – 6 NPS 1¼ – 6	
Globe valve	3251	DIN	Steel	PN16 PN25 PN40 – 400	DN 65 – 150 DN 50 – 150 DN 32 – 150	All fluids
		ANSI		Cl 150 Cl 300 - 2500	NPS 2 ½ – 6 NPS 1 ¼ – 6	
High pressure valve	3252	DIN	Steel	PN40 – 400	DN 32 – 80	All fluids
		ANSI		Cl 300 - 2500	NPS 1 ¼ – 3	
Angle valve	3256	DIN	Steel	PN16 PN40 – 400	DN 65 – 150 DN 32 – 150	All fluids
		ANSI		Cl 150 Cl 300 - 2500	NPS 2 ½ – 6 NPS 1 ¼ – 6	
Segment ball valve	3310	DIN	Steel	PN10 PN16 PN25 PN40	DN 150 DN 80 – 150 DN 50 – 150 DN 40 – 150	All fluids
		ANSI		Cl 150 Cl 300	NPS 3 – 6 NPS 1 ½ – 6	
Globe valve	3321	DIN	Spheroidal graphite iron	PN 25	DN 100	G2, L1, L2 [1]
		DIN	Steel	PN16 PN40	DN 65 – 100 DN 32– 100	All fluids
		ANSI		Cl 150 Cl 300	NPS 2 ½ – 4 NPS 1½ – 4	
3-way Valve	3323	DIN	Spheroidal graphite iron	PN 25	DN 100	G2, L1, L2 [1]
		DIN	Steel	PN16 PN40	DN 65 – 100 DN 32 – 100	All fluids
		ANSI		Cl 150 Cl 300	NPS 2 ½ – 4 NPS 1¼ – 2	
Butterfly valve	3331	DIN	Steel	PN10 PN16 – 50	DN 150 – 400 DN 100 – 400	All fluids
		ANSI		Cl 150 – 300	NPS 4 – 16	
Diaphragm valve	3345	ANSI	Cast iron & spheroidal graphite iron	$P_{max\ T=70°F}$ 150 psi	NPS 5 – 6	G2, L1, L2 [1]
				$P_{max\ T=70°F}$ 230 psi	NPS 6	
			Steel	$P_{max\ T=70°F}$ 150 - 230 psi	NPS 2 ½ – 6	All fluids

WEEE N° FR023665

SAMSON REGULATION SAS • 1 rue Jean Corona • 69120 Vaulx-en-Velin
Tel.: +33 (0)4 72 04 75 00 • E-mail: france@samsongroup.com • Internet: www.samson.fr

Société par actions simplifiée au capital de 10 000 000 € • Siège social : Vaulx-en-Velin
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 0000060035B41 • Banque 3000201936
IBAN FR9830002019360000060035B41 • BIC (code SWIFT) CRLYFRPP

UK DECLARATION OF CONFORMITY

DC064
2022-12

Devices	Type	Version	Body Material	PN Class	DN NPS	Fluids
Sanitary valve	3347	DIN	Steel	$P_{max\ T=20°C}$ 16 bar $P_{max\ T=20°C}$ 40 bar $P_{max\ T=20°C}$ 63 bar	DN 150 DN 65 – 150 DN 32 – 150	G2, L1, L2 [1]
		ANSI		$P_{max\ T=70°F}$ 230 psi $P_{max\ T=70°F}$ 580 psi $P_{max\ T=70°F}$ 910 psi	NPS 6 NPS 2 ½ – 6 NPS 1 ¼ – 6	
Aseptic valve	3349	DIN	Steel	$P_{max\ T=20°C}$ 16 bar $P_{max\ T=20°C}$ 25 bar	DN 65 – 100 DN 50 – 100	All fluids
		ANSI		$P_{max\ T=70°F}$ 230 psi $P_{max\ T=70°F}$ 360 psi	NPS 2 ½ – 4 NPS 2 – 4	
On-Off Valve	3351	DIN	Spheroidal graphite iron	PN 25	DN 100	G2, L1, L2 [1]
		DIN	Steel	PN16 PN25 PN40	DN 65 – 100 DN 50 – 100 DN 32 – 100	All fluids
		ANSI		Cl 150 Cl 300	NPS 2 ½ – 4 NPS 1 ¼ – 4	
Measure flange	5090	DIN	Steel	PN10	DN 400 – 500	G2, L2 [1]
				PN16	DN 250 – 500	
				PN25	DN 150 – 500	
				PN40	DN 125 – 500	

[1] Gases Acc. to article 4 paragraphs 1.c) i)
Liquids Acc. to article 4 paragraphs 1.c) ii)

the conformity with the following Union harmonization legislation:

Legislation : STATUTORY INSTRUMENTS – 2016 No. 1105 – CONSUMER PROTECTION HEALTH AND SAFETY – The Pressure Equipment (Safety) Regulations 2016	**PE(S)R 2016**	**2022**
Applied conformity assessment procedure for fluids according to Article 4 § 1	**2014/68/UE Modul H**	**Certificate n° CE-0062-PED-H-SAM 001-20-FRA-rev-A**

Applied designated standards and technical specifications: EN 12516-2, EN 12516-3, ASME B16.34, EN 60534-4, EN 1092-1

The manufacturer's quality management system is monitored by the following notified body:
Bureau Veritas Services SAS N°/Nr 0062, 8 Cours du Triangle, 92800 PUTEAUX - LA DEFENSE

Manufacturer : Samson Régulation SAS, 1, rue Jean Corona, FR-69120 VAULX-EN-VELIN

Vaulx-en-Velin, 23rd December 2022

Bruno Soulas
General Director
Head of Strategy and Development

Joséphine Signoles-Fontaine
Head of QSE department

UK DECLARATION OF CONFORMITY

DC053
2022-12

Declaration of Conformity of Final Machinery

in accordance with Annex II, section 1. A. of the Machinery (Safety) Regulations 2008

For the following products:
Pneumatic On / Off Valve Type 3351

We hereby declare that the machinery mentioned above complies with all applicable requirements stipulated in Machinery (Safety) Regulations 2008.

For product descriptions of the valve and actuator, refer to:
- Type 3351 Valve: Mounting and Operating Instructions EB 8039

Valve accessories (e.g. positioners, limit switches, solenoid valves, lock-up valves, supply pressure regulators, volume boosters and quick exhaust valves) are classified as machinery components in this declaration of conformity and do not fall within the scope of the Machinery Directive as specified in § 35 and § 46 of the Guide to Application of the Machinery (Safety) Regulations 2008. In the SAMSON Manual H 02 titled "Appropriate Machinery Components for SAMSON Pneumatic Control Valves with a Declaration of Conformity of Final Machinery", SAMSON defines the specifications and properties of appropriate machinery components that can be mounted onto the above specified final machinery.

Referenced technical standards and/or specifications:
- VCI, VDMA, VGB: "Leitfaden Maschinenrichtlinie (2006/42/EG) — Bedeutung für Armaturen, Mai 2018" [German only]
- VCI, VDMA, VGB: "Zusatzdokument zum „Leitfaden Maschinenrichtlinie (2006/42/EG) — Bedeutung für Armaturen vom Mai 2018" [German only], based on DIN EN ISO 12100:201 1-03

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

Persons authorized to compile the technical file:
SAMSON REGULATION SAS – 1 rue Jean Corona – FR-69120 VAULX-EN-VELIN
Vaulx-en-Velin, 23rd December 2022

Bruno Soulas
General Director
Head of Strategy and Development

Joséphine Signoles-Fontaine
Head of QSE department

SAMSON REGULATION SAS • 1 rue Jean Corona • 69120 Vaulx-en-Velin
Tel.: +33 (0)4 72 04 75 00 • E-mail: france@samsongroup.com • Internet: www.samson.fr

Société par actions simplifiée au capital de 10 000 000 € • Siège social : Vaulx-en-Velin
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 0000060035B41 • Banque 3000201936
IBAN FR9830002019360000060035B41 • BIC (code SWIFT) CRLYFRPP

WEEE N° FR023665

UK DECLARATION OF INCORPORATION

DC061
2022-12

Declaration of Incorporation of Partly Completed Machinery

In accordance with Schedule 2 Part 2 Annex II, section 1.B of the Directive 2008 No. 1597 Supply of Machinery (Safety) Regulations 2008

For the following products:
Type 3351 Pneumatic ON/OFF Valve

We certify that the Type 3351 Pneumatic ON/OFF Valves industries are partly completed machinery as defined in the Directive 2008 No. 1597 Supply of Machinery (Safety) Regulations 2008 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 7 of Schedule 2) 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 Directive 2008 No. 1597 Supply of Machinery (Safety) Regulations 2008.

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 www.samsongroup.com.

For product descriptions of the valve, refer to Mounting and Operating Instructions EB 8039.

Referenced technical standards and/or specifications:
- VCI, VDMA, VGB: "Leitfaden Maschinenrichtlinie (2006/42/EG) — Bedeutung für Armaturen, Mai 2018" [German only]
- VCI, VDMA, VGB: "Zusatzdokument zum „Leitfaden Maschinenrichtlinie (2006/42/EG) — Bedeutung für Armaturen vom Mai 2018" [German only], based on DIN EN ISO 12100:201 1-03

Comments:
- See mounting and operating instructions for residual hazards.
- Also observe the referenced documents listed in the mounting and operation instructions.

Persons authorized to compile the technical file:
SAMSON REGULATION SAS – 1 rue Jean Corona – FR-69120 VAULX-EN-VELIN
Vaulx-en-Velin, 23rd December 2022

Bruno Soulas
General Director
Head of Strategy and Development

Joséphine Signoles-Fontaine
Head of QSE department

SAMSON REGULATION SAS • 1 rue Jean Corona • 69120 Vaulx-en-Velin
Tel.: +33 (0)4 72 04 75 00 • E-mail: france@samsongroup.com • Internet: www.samson.fr

Société par actions simplifiée au capital de 10 000 000 € • Siège social : Vaulx-en-Velin
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 0000060035B41 • Banque 3000201936
IBAN FR9830002019360000060035B41 • BIC (code SWIFT) CRLYFRPP

WEEE N° FR023665

SAMSON REGULATION S.A.S.

DECLARATION DE CONFORMITE **DC027**
DECLARATION OF CONFORMITY **2020-04**
符合性声明

La présente déclaration de conformité est établie sous la seule responsabilité du fabricant.
This declaration of conformity is issued under the sole responsibility of the manufacturer.
制造商对发布的符合性声明全权负责。

Nous certifions que les produits suivants en exécution standard :
For the following products in standard execution:
适用于下述型号的产品：

Type / type / 型号 : 2371, 3249, 3252, 3310, 3331, 3347, 3349, 3351, 3710, 3711, 5090, Samstation

sont conformes à la législation applicable :
the conformity with the relevant legislation is declared with:
声明符合相关法规：

China RoHS 2.0 GB/T26572-2011

Fabricant :
Manufacturer :
制造商

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

Vaulx-en-Velin, le 20/04/2020

Au nom du fabricant,
On behalf of the Manufacturer,
制造商的代表人

SAMSON REGULATION S.A.S.

Joséphine SIGNOLES-FONTAINE
Responsable QSE
QSE Manager
QSE 负责人

SAMSON REGULATION • 1 rue Jean Corona • 69120 Vaulx-en-Velin
Tél.: +33 (0)4 72 04 75 00 • Fax: +33 (0)4 72 04 75 75 • E-mail: samson@samson.fr • Internet: www.samson.fr

Société par actions simplifiée au capital de 10 000 000 € • Siège social : Vaulx-en-Velin
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 0000060035B41 • Banque 3000201936
IBAN FR9830002019360000060035B41 • BIC (code SWIFT) CRLYFRPP

DECLARATION OF CONFORMITY

DC022

For the following product

2022-05

Industrial valves in special execution used in food or pharmaceutical environment types 3241, 3321 CT, 3310, 3351 and 3252.

For these valves, the materials (seals, glands and bodies), the preparation of the parts and the conditions of assembly are in accordance with:

- European Regulation (EC) No. 1935/2004
- American rules FDA 21 CFR §177.1550 (PTFE) & §177.2415 (PEEK) & §177.2600 (Rubber).

Grease used for the assembly of parts in contact with the fluid is in conformity with the requirements of NSF-H1.

Metals used for the metal components of the valve(s) listed above and in contact with the fluid belong to the list of AISI 300 series materials recognized by the FDA.

On 02/05/22

SAMSON REGULATION S.A.S.

Bruno Soulas
Director of Strategy and Innovation

Joséphine Signoles-Fontaine
QSE Manager

DECLARATION OF CONFORMITY

DC021

For the following product

2022-05

Industrial valves in special execution with seals and packings for food contact types 3241, 3321 CT, 3310, 3351 and 3252

Seals and packings comply with:

- European Regulation (EC) No. 1935/2004
- American rules FDA 21 CFR §177.1550 (PTFE) & §177.2415 (PEEK) & §177.2600 (Rubber).

Grease used for the assembly of parts in contact with the fluid is in conformity with the requirements of NSF-H1.

On 02/05/22

SAMSON REGULATION S.A.S.

Bruno Soulas
Director of Strategy and Innovation

Joséphine Signoles-Fontaine
QSE Manager

15 Annex

15.1 Tightening torques, lubricants and tools

Tightening torques

Table 15-1: *Tightening torques*

Part	Tightening torques			
Nuts (1.1)	M10/20 Nm	M12/35 Nm	M16/90 Nm	M20/170 Nm
Packing (5.2)	M20x1.5/ 20 Nm	M20x1.5/ 80 Nm	M26x1.5/ 110 Nm	M26x1.5/ 110 N
Nuts (5.9)	M6/13 Nm	M8/18 Nm	M8/18 Nm	M8/18 Nm
Seat (2)	150 Nm	400 Nm	850 Nm	1050 Nm

Lubricants

Table 15-2: *Recommended lubricant*

Application	Trade name	Temperature range in °C	Color	Material no.
Chemical-resistant, high-temperature grease [1)]	Gleitmo® 591	–25 to +260	White	8150-0111

1) Components that are to be lubricated and tools used for lubrication must be free of oil and grease.

Tools

In addition to the standard tool, special tools are required to assemble and remove some parts (see Table 15-3). Use adjustable torque wrenches with a stop signal or that indicate the torque being applied to achieve the right tightening torques. Valves in large valve sizes often require tightening torques that can only be achieved through additional torque multiplication by using a torque multiplier or hydraulic power tool. The required special tools can be purchased from SAMSON.

➔ Contact After-sales service.

Table 15-3: *Special tools*

Valve size	DN 15 to 25 NPS ½ to 1	DN 32 to 50 NPS 1½ to 2	DN 65 and 80 NPS 2½ and 3	DN 100 NPS 4
Tool	**Order no.**			
Mounting device	1281-0036	1281-0037	1281-0038	–
Seat wrench	1281-0040	1281-0041	1281-0042	1281-0043
Seat wrench extension for fail-close valves	1281-0044	1281-0045	1281-0046	1281-0051 [1]
Plug wrench	1281-0049	1281-0049	–	–

[1] An intermediate flange (1281-0052) is required when a torque multiplier with 1" square end drive is used.

15.2 Spare parts

Contact SAMSON's After-sales Service if you need spare parts.

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

15.4 Information on the UK sales region

The following information corresponds to the 2016 Regulations No. 1105 Pressure Equipment (Safety) Regulations 2016, STATUTORY INSTRUMENTS, 2016 No. 1105 (UKCA marking). It does not apply to Northern Ireland.

Importer

SAMSON Controls Ltd
Perrywood Business Park
Honeycrock Lane
Redhill, Surrey RH1 5JQ

Phone: +44 1737 766391
E-mail: sales-uk@samsongroup.com
Website: uk.samsongroup.com

EB 8039 EN

SAMSON AKTIENGESELLSCHAFT
Weismüllerstraße 3 · 60314 Frankfurt am Main, Germany
Phone: +49 69 4009-0 · Fax: +49 69 4009-1507
samson@samsongroup.com · www.samsongroup.com

2023-09-04 · English