

MOUNTING AND OPERATING INSTRUCTIONS

SAMSON

EB 8113/8114 EN

Translation of original instructions



Type 3323 Valve · DIN and ANSI versions

In combination with actuators,
e.g. Type 3372 Electropneumatic Actuator,
Type 3371 Pneumatic Actuator or
Type 5827 or Type 3374 Electric Actuator

CE Ex
certified

Note on these mounting and operating instructions

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

- ⇒ For the safe and proper use of these instructions, read them carefully and keep them for later reference.
- ⇒ If you have any additional questions not related to the contents of this document, contact SAMSON's After-sales Service (aftersaleservice@samsongroup.com).



Documents relating to the device, such as the mounting and operating instructions, are available on our website:

▶ <https://www.samsongroup.com/en/downloads/documentation>

Definition of signal words

⚠ DANGER

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

⚠ WARNING

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

ⓘ NOTICE

Property damage message or malfunction

ℹ Note

Additional information

💡 Tip

Recommended action

1	Safety instructions and measures.....	5
1.1	Notes on possible severe personal injury.....	7
1.2	Notes on possible personal injury.....	7
1.3	Notes on possible property damage.....	9
1.4	Warnings on the device.....	10
2	Markings on the device.....	11
2.1	Valve nameplate.....	11
2.2	Actuator nameplate.....	12
2.3	Material numbers.....	12
2.4	Label when an adjustable packing is installed.....	12
3	Design and principle of operation.....	13
3.1	Fail-safe positions.....	14
3.2	Variants.....	14
3.3	Additional fittings.....	14
3.4	Valve accessories.....	15
3.5	Technical data.....	15
4	Shipment and on-site transport.....	19
4.1	Accepting the delivered goods.....	19
4.2	Removing the packaging from the valve.....	19
4.3	Transporting and lifting the valve.....	19
4.3.1	Transporting the valve.....	20
4.3.2	Lifting the valve.....	20
4.4	Storing the valve.....	20
5	Installation.....	22
5.1	Installation conditions.....	22
5.2	Preparation for installation.....	25
5.3	Mounting the device.....	25
5.4	Mounting the actuator onto the valve.....	26
5.5	Installing the valve into the pipeline.....	27
5.6	Testing the installed valve.....	28
5.6.1	Leak test.....	29
5.6.2	Travel motion.....	29
5.6.3	Fail-safe position.....	30
5.6.4	Pressure test.....	30
6	Start-up.....	31
7	Operation.....	32
8	Malfunctions.....	33
8.1	Troubleshooting.....	33
8.2	Emergency action.....	34
9	Servicing.....	35
9.1	Periodic testing.....	37
9.2	Service work preparations.....	39
9.3	Installing the valve after service work.....	39
9.4	Service work.....	40
9.4.1	Replacing the body gasket.....	40
9.4.2	Replacing the packing.....	41
9.4.3	Replacing the seat and plug.....	42
9.5	Ordering spare parts and operating supplies.....	46
10	Decommissioning.....	47

Contents

11	Removal.....	49
11.1	Removing the valve from the pipeline.....	49
11.2	Removing the actuator from the valve.....	49
12	Repairs.....	50
12.1	Returning devices to SAMSON.....	50
13	Disposal.....	51
14	Certificates.....	52
15	Appendix.....	62
15.1	Tightening torques, lubricants and tools.....	62
15.2	Spare parts.....	62
15.3	After-sales service.....	65

1 Safety instructions and measures

Intended use

The SAMSON Type 3323 Three-way Valve in combination with an actuator (e.g. Type 3372 Electropneumatic Actuator, Type 3371 Pneumatic Actuator, Type 5827 Electric Actuator or Type 3374 Electric Actuator) is designed to regulate the flow rate, pressure or temperature of liquids, gases or vapors in mixing or diverting service.

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

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

Reasonably foreseeable misuse

The control valve is not suitable for the following applications:

- Use outside the limits defined during sizing and by the technical data
- Use outside the limits defined by the valve accessories connected to the control valve

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

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

Qualifications of operating personnel

The control valve must be mounted, started up, serviced and repaired by fully trained and qualified personnel only; the accepted industry codes and practices must be observed. According to these mounting and operating instructions, trained personnel refers to individuals who are able to judge the work they are assigned to and recognize possible hazards due to their specialized training, their knowledge and experience as well as their knowledge of the applicable standards.

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

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

Personal protective equipment

SAMSON recommends checking the hazards posed by the process medium being used (e.g. ► GESTIS 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

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

SAMSON pneumatic actuators with fail-safe action:

- Type 3371

SAMSON electropneumatic actuator with fail-safe action:

- Type 3372

Safety instructions and measures

SAMSON electric actuators with fail-safe action:

- Type 3374-2x/-3x

Warning against residual hazards

To avoid personal injury or property damage, plant operators and operating personnel must prevent hazards that could be caused in the control valve by the process medium, the operating pressure, the signal pressure or by moving parts by taking appropriate precautions. Plant operators and operating personnel must observe all hazard statements, warning and caution notes in these mounting and operating instructions.

Hazards resulting from the special working conditions at the installation site of the valve must be identified in a risk assessment and prevented through the corresponding standard operating procedures drawn up by the operator.

Responsibilities of the operator

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

Operators are additionally responsible for ensuring that the limits for the product defined in the technical data are observed. This also applies to the start-up and shutdown procedures. Start-up and shutdown procedures fall within the scope of the operator's duties and, as such, are not part of these mounting and operating instructions. SAMSON is unable to make any statements about these procedures since the operative details (e.g. differential pressures and temperatures) vary in each individual case and are only known to the operator.

Responsibilities of operating personnel

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

Referenced standards, directives and regulations

The control valves comply with the requirements of the European Pressure Equipment Directive

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

Non-electric valve versions whose bodies are not lined with an insulating material coating do not have their own potential ignition source according to the risk assessment stipulated in Clause 5.2 of DIN EN ISO 80079-36, even in the rare incident of an operating fault. Therefore, such valve versions do not fall within the scope of ATEX Directive 2014/34/EU.

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

Referenced documents

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

- Mounting and operating instructions for mounted valve accessories (positioner, solenoid valve etc.)
- Mounting and operating instructions for the mounted actuator, for example:
 - ► EB 8313-1 for Type 3372 Electropneumatic Actuator (with integrated positioner)
 - ► EB 8313-3 for Type 3372 Electropneumatic Actuator (with Type 3725 Positioner)
 - ► EB 8317 for Type 3371 Pneumatic Actuator
 - ► EB 8331-3 for Type 3374 Electric Actuator (version with three-step signal)
 - ► EB 8331-4 for Type 3374 Electric Actuator (version with positioner)
 - ► EB 5827-1 for Type 5827 Electric Actuator (version with three-step signal)
 - ► EB 5827-2 for Type 5827 Electric Actuator (version with positioner)
- ► AB 0100 for tools, tightening torques and lubricants
- Manual ► H 02: Appropriate Machinery Components for SAMSON Pneumatic Control Valves with a Declaration of Conformity of Final Machinery

- If a device contains a substance listed as a substance of very high concern (SVHC) on the candidate list of the REACH regulation, the document "Additional Information on Your Inquiry/Order" is added to the SAMSON order documents. This document includes the SCIP number assigned to the devices concerned. This number can be entered into the database on the European Chemicals Agency (ECHA) website (▶ <https://www.echa.europa.eu/scip-database>) to find out more information on the SVHC contained in the device.

Further information on material compliance at SAMSON is available at ▶ www.samsongroup.com > About SAMSON > Environment, Social & Governance > Material Compliance

1.1 Notes on possible severe personal injury

⚠ DANGER

Risk of bursting in pressure equipment.

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

- ⇒ Observe the maximum permissible pressure for valve and plant.
- ⇒ Before starting any work on pressure-bearing or pressure-retaining parts belonging to the valve assembly, depressurize all plant sections affected as well as the valve.
- ⇒ Drain the process medium from the plant sections affected as well as from the valve.

⚠ DANGER

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

- ⇒ While working on electric devices or before opening the device, disconnect the supply voltage and protect it against unintentional reconnection.
- ⇒ Do not remove any covers to perform adjustment work on live parts.
- ⇒ Only use protective equipment that can be protected against unintentional reconnection of the power supply.

- ⇒ SAMSON electric actuators are protected against spray water. Avoid jets of water.
- ⇒ Observe all other safety instructions in the associated documentation of the electric device (e.g. electric actuator).

1.2 Notes on possible personal injury

⚠ WARNING

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

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

- ⇒ Follow the standard operating procedures provided by the plant operator.

In the event of a potential risk:

- ⇒ Allow components and pipelines to cool down or warm up to the ambient temperature.
- ⇒ Wear protective clothing and safety gloves.

⚠ WARNING

Risk of hearing loss or deafness due to loud noise.

Noise emission (e.g. cavitation or flashing) may occur during operation caused by the process medium and the operating conditions. Additionally, a loud noise may briefly occur through the sudden venting of the pneumatic actuator or pneumatic valve accessories not fitted with noise-reducing elements. Both can damage hearing.

- ⇒ Follow the standard operating procedures provided by the plant operator.

In the event of a potential risk:

- ⇒ Wear hearing protection when working near the valve.

⚠ WARNING

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

When the valve is operated with a pneumatic actuator or pneumatic valve accessories, exhaust air is vented from the actuator, for example, while the

Safety instructions and measures

valve is operating and when the valve opens or closes.

- ⇒ Install the control valve in such a way that vent openings are not located at eye level and the actuator does not vent at eye level in the work position.
- ⇒ Use suitable mufflers and vent plugs.
- ⇒ Wear eye protection when working in close proximity to pneumatic fittings and in the danger zone of the vent openings.

⚠ WARNING

Crush hazard arising from moving parts.

The control valve contains moving parts (actuator and plug stem), which can injure hands or fingers if inserted into the valve.

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

⚠ WARNING

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

Valves in combination with pneumatic actuators with preloaded springs are under tension. These control valves with SAMSON pneumatic linear actuators (e.g. Type 3271/3277 or Type 3371) can be identified by the long bolts protruding from the bottom of the actuator.

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

⚠ WARNING

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

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

- ⇒ Follow the standard operating procedures provided by the plant operator.
In the event of a potential risk:
 - ⇒ If possible, drain the process medium from the plant sections affected and from the valve.
 - ⇒ Wear protective clothing, safety gloves, respiratory protection and eye protection.

⚠ WARNING

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

Over time, markings, labels and nameplates on the control valve may become covered with dirt or become illegible in some other way. As a result, hazards may go unnoticed and the necessary instructions not followed. There is a risk of personal injury.

- ⇒ Keep all relevant markings and inscriptions on the device in a constantly legible state.
- ⇒ Immediately renew damaged, missing or incorrect nameplates or labels.

⚠ WARNING

Exposure to hazardous substances poses a serious risk to health.

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

- ⇒ Make sure that an MSDS is available for any hazardous substance used. If necessary, contact the manufacturer to obtain an MSDS.
- ⇒ Inform yourself about the hazardous substances and their correct handling.

1.3 Notes on possible property damage

ⓘ NOTICE

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

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

- ⇒ Flush the pipelines before start-up.

ⓘ NOTICE

Risk of valve damage due to unsuitable medium properties.

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

- ⇒ Only use the process medium specified for sizing the equipment.

ⓘ NOTICE

Risk of damage to the electric control valve due to the supply voltage exceeding the permissible tolerances.

Electric control valves with ≥ 50 V supply voltage are designed for use according to regulations for low-voltage installations. The following applies to all electric control valves:

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

ⓘ NOTICE

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

Observe the specified torques when tightening control valve components. Over-torquing leads to parts

wearing out more quickly. Under-torquing may cause leakage.

- ⇒ Observe the tightening torques specified in ► AB 0100.

ⓘ NOTICE

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

Certain tools are required to work on the valve.

- ⇒ Only use tools approved by SAMSON (► AB 0100).

ⓘ NOTICE

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

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


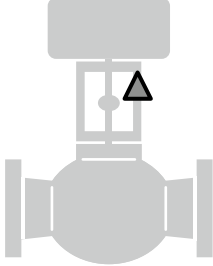
- ⇒ Only use lubricants approved by SAMSON (► AB 0100).

ⓘ NOTICE

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

- ⇒ If necessary (e.g. for oxygen service), keep the 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	Location on the device
	
Meaning of the warning	
<p>Warning against moving parts There is a risk of injury to hands or fingers due to the stroking movement of the actuator and plug stem if they are inserted into the yoke while the air supply is connected to the actuator.</p>	

2 Markings on the device

2.1 Valve nameplate

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

In nominal sizes DN 15 to 50 or NPS ½ to 2, the valve nameplate is affixed to the valve on the body flange. The nameplate is affixed to the top of the bonnet in nominal sizes DN 65 or NPS 2½ and larger.

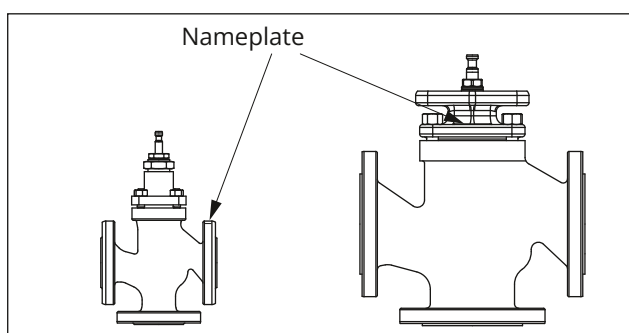


Fig. 1: Left: DN 15 to 50 or NPS ½ to 2 · Nameplate on body flange
Right: DN 65 or NPS 2½ and larger · Nameplate on top of the bonnet

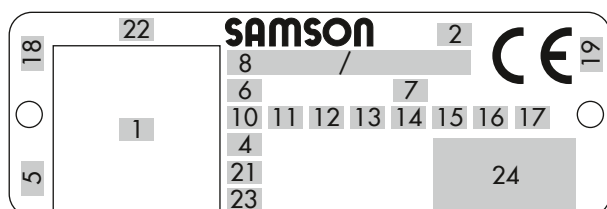


Fig. 2: Inscriptions on the valve nameplate

Item	Inscription meaning
1	Identification code (scannable)
2	Type designation
4	Material
5	Month and year of manufacture
6	Nominal size: DIN: DN · ANSI: NPS · JIS: DN
7	Pressure rating: DIN: PN · ANSI: CL · JIS: K
8	Order number/item
10	Flow coefficient: DIN: KV · ANSI/JIS: CV

Item	Inscription meaning
11	Characteristic: % : Equal percentage LIN : Linear mod-lin : Modified linear NO/NC : On/off service
12	Seat-plug seal: ME : Metal HA : Carbide metal ST : Metal base material with Stellite® facing KE : Ceramic PT : PTFE soft seal PK : PEEK soft seal
13	Seat code (trim material): On request
14	Pressure balancing: D : DIN · B : ANSI/JIS
	Version: M : Mixing valve V : Diverting valve
15	Noise reduction: 1 : Flow divider (ST) 1 2 : ST 2 3 : ST 3 1/PSA : ST 1 standard and integrated in seat for PSA valve AC-1/AC-2/AC-3/AC-5 : Anti-cavitation trim, versions 1 to 5 LK : Perforated plug LK1/LK2/LK3 : Perforated plug with flow divider ST 1 to 3 MHC1 : Multi-Hole Cage CC1 : Combi Cage ZT1 : Zero Travel LDB : Low dB CDST : Multi-stage trim (cavitation dirty service trim)
16	PSA version: PSA
17	Cage/seat style: RT : Seat with retainer CG : Guided cage TH : Screwed-in seat SF : Suspended cage, flanged seat
18	Country of origin
19	ID of the notified body (EU), for example: – 0062 for Bureau Veritas Services SAS, 4 place des Saisons, 92400 Courbevoie – France
21	PED : Pressure Equipment Directive G1/G2 : Gases and vapors Fluid group 1 = Hazardous Fluid group 2 = Other L1 : Liquids Fluid group 1 = Hazardous Fluid group 2 = Other I/II/III : Category 1 to 3

Markings on the device

Item	Inscription meaning
22	Serial number
23	NE 53 (NAMUR Recommendation)
24	Other marks of conformity

i Note

Fig. 2 and the inscription table list all possible characteristics and options that may appear on a valve nameplate. Only the inscriptions relevant to the ordered Type 3323 Valve actually appear on the nameplate.

💡 Tip

SAMSON recommends to include the device's serial number (item 22 on the nameplate) and/or its material number (as specified in the order confirmation) in the plant documentation for the associated tag number.

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

► www.samsongroup.com > Products > Electronic nameplate

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

2.2 Actuator nameplate

See associated actuator documentation.

2.3 Material numbers

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

2.4 Label when an adjustable packing is installed

An instructional label is affixed to the valve when an adjustable packing is installed (see Fig. 3).



Fig. 3: Label when an adjustable packing is installed

3 Design and principle of operation

The Type 3323 is a three-way valve which can be used either as a mixing or diverting valve. The design of the mixing and diverting valves in nominal sizes DN 15 to 25 (NPS ½ to 1) is identical.

The Type 3323 Valve is preferably to be combined with the following SAMSON actuators:

- Type 3372 Electropneumatic Actuator
- Type 3371 Pneumatic Actuator
- Type 3374 Electric Actuator
- Type 5827 Electric Actuator

The two seats, plugs and plug stem are installed in the body. The plug stem is connected to the actuator stem by a stem connector and is sealed by a packing.

The medium flows through the valve in the direction indicated by the arrow.

In **mixing valves**, the process media to be mixed enter at valve ports **A** and **B**. The combined flow exits the valve at port **AB** (see Fig. 4).

In **diverting valves**, the process medium enters at the valve port **AB** and the partial flows exit at ports **A** and **B** (see Fig. 5).

The flow rate from ports A or B to AB and vice versa depends on the cross-sectional area of flow between the seats and plugs. The plugs are moved by changing the control signal applied to the actuator.

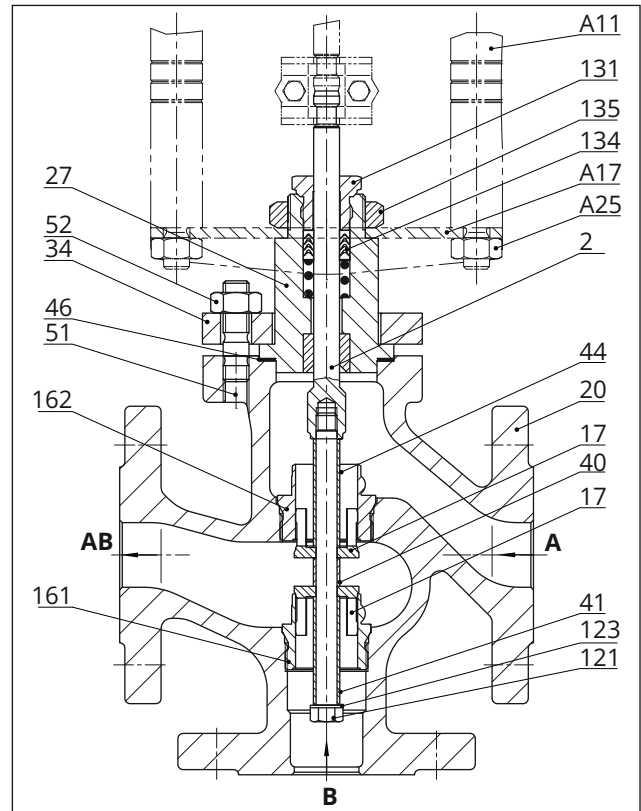


Fig. 4: Type 3323 Valve (mixing valve), DN 15 to 50/NPS ½ to 2 · Mounting using a central nut (form B attachment)

2	Plug stem	121	Hex nut (self-locking)
17	Plug	123	Shim
20	Body	131	Threaded bushing (packing nut)
27	Valve bonnet	133	V-ring packing
34	Flange	135	Central nut
40	Spacer	161	Bottom seat
41	Spacer	162	Top seat
44	Spacer	A11	Rod
46	Body gasket	A17	Crossbeam
51	Stud	A25	Nut
52	Body nut		

Design and principle of operation

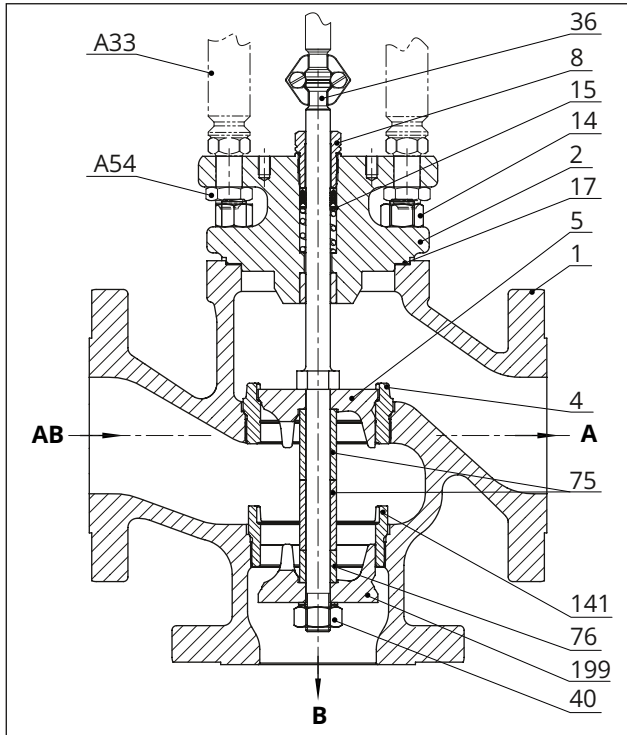


Fig. 5: Type 3323 Valve (diverting valve), DN 65 to 100/NPS 2½ to 4 · Mounting using rods (form C attachment)

1	Body	36	Plug stem
2	Valve bonnet	40	Hex nut (self-locking)
4	Top seat	75	Spacer
5	Top plug	76	Spacer
8	Threaded bushing (packing nut)	141	Bottom seat
14	Body nut	199	Bottom plug
15	Packing set	A33	Rod
17	Body gasket	A54	Nut

3.1 Fail-safe positions

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

The fail-safe action of SAMSON actuators is specified on the actuator nameplate.

Upon failure of the air supply or supply voltage, the valve fitted with the corresponding actuator moves to one of the following fail-safe positions.

- **Actuator stem extends:**
Port **B** in mixing valves is closed and port **A** in diverting valves is closed when the supply air fails. Port **B** of diverting valves in DN 15 to 25 (NPS ½ to 1) is closed since these valves have the same construction as mixing valves.

- **Actuator stem retracts:**
Port **A** in mixing valves is closed and port **B** in diverting valves is closed when the supply air fails. Port **A** of diverting valves in DN 15 to 25 (NPS ½ to 1) is closed since these valves have the same construction as mixing valves.

Tip

The direction of action of the electric and electropneumatic actuators is determined by the actuator version. The direction of action of the Type 3371 Pneumatic Actuator can be reversed, if required. See the Mounting and Operating Instructions ► EB 8317.

3.2 Variants

With insulating section

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

Actuators

In these instructions, the preferable combination with one of the following SAMSON actuators is described.

- Type 5827 Electric Actuator
- Type 3374 Electric Actuator
- Type 3372 Electropneumatic Actuator
- Type 3371 Pneumatic Actuator

3.3 Additional fittings

Strainer

SAMSON recommends installing a SAMSON strainer upstream of the valve. We recommend installing a strainer upstream of both valve inlet ports in mixing valves. It prevents solid particles in the process medium from damaging the control valve.

Bypass and shut-off valves

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

Insulation

Control valves can be insulated to reduce heat energy transfer.

If applicable, read the instructions in Chapter 5.

Safety guard

For operating conditions that require increased safety (e.g. in cases where the control 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.

3.4 Valve accessories

See Information Sheet ► T 8350

3.5 Technical data

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

i Note

More information on Type 3323 Valve is available in the following data sheets:

- ► T 8113 · DIN version
- ► T 8114 · ANSI version

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 1: Technical data for Type 3323 · DIN version

Material		Cast iron EN-GJL-250	Spheroidal graphite iron EN-GJS-400-18-LT	Cast steel 1.0619		Stainless steel 1.4408	
Nominal size	DN	15 to 100	15 to 100	15 to 50	65 to 100	15 to 50	65 to 100
Pressure rating	PN	16	25	40	16 and 40	40	16
Seat-plug seal		Metal seal					
Characteristic		Linear					
Rangeability		30:1 up to DN 25 · 50:1 for DN 40 and larger					
Conformity		CE					
Temperature range		-10 to +220 °C					
	With insulating section ¹⁾	-10 to +300 °C ²⁾					
Leakage class according to DIN EN 60534-4		Metal seal: I (0.05 % of K _{vS})					

¹⁾ Not in stainless steel with DN 65 to 100
²⁾ Version for lower temperatures on request

Design and principle of operation

Table 2: Technical data for Type 3323 · ANSI version

Material		Cast steel A216 WCC	Cast stainless steel A351 CF8M
Nominal size	NPS	½ · ¾ · 1 · 1½ · 2 · 2½ · 3 · 4	
Pressure rating	Class	Up to NPS 2: Class 300 NPS 2½ and larger: Class 150 and 300	Up to NPS 2: Class 300 NPS 2½ and larger: Class 150
Type of end connections	Flanges	Raised face (RF) · Ra = 3.2 to 6.3 µm	
Seat-plug seal		Metal seal	
Characteristic		Linear	
Rangeability		30:1 up to NPS 1 · 50:1 for NPS 1½ and larger	
Conformity		CE	
Temperature range		14 to 430 °F (-10 to +220 °C)	
	With insulating section	14 to 572 °F ¹⁾ (-10 to +300 °C)	
Leakage class according to ANSI FCI 70-2		Metal seal: I (0.05 % of C _v)	

¹⁾ Version for lower temperatures on request

Table 3: Materials for Type 3323 · DIN version

Valve body	Cast iron EN-GJL-250	Spheroidal graphite iron EN-GJS-400-18-LT	Cast steel 1.0619	Stainless steel 1.4408
Valve bonnet	Up to DN 50: 1.0460 DN 65 and larger: EN-GJL-250	Up to DN 50: 1.0460 DN 65 and larger: EN-GJL-250	Up to DN 50: 1.0460 DN 65 and larger: 1.0619	Up to DN 50: 1.4404 DN 65 and larger: 1.4408
Valve flange ¹⁾	1.0460			
Seat	DN 15 to 25: 1.4104 ²⁾ DN 32 to 50: 1.4104 DN 65 and larger: 1.4006			DN 15 to 25: 1.4104 ²⁾ DN 32 and larger: 1.4401/1.4404
Plug	Up to DN 50: 1.4305 DN 65 and larger: 1.4006			1.4404
Guide bushing	1.4104			
Packing	PTFE			
Body gasket	Graphite on metal core			

¹⁾ No contact with process medium; only up to DN 50. For DN 65 and larger: one-pieced (see valve bonnet for material)

²⁾ Top seat made of 1.4305

Table 4: Materials for Type 3323 · ANSI version

Valve body	Cast steel A216 WCC	Cast stainless steel A351 CF8M
Valve bonnet	Up to NPS 2: A105 NPS 2½ and larger: A216 WCC	Up to NPS 2: A182 F316 NPS 2½ and larger: CF8M
Valve flange ¹⁾	A105	
Seat	NPS ½ to 1: A582 430F ²⁾ NPS 1½ to 2: A582 430F NPS 2½ and larger: A276 410T	NPS ½ to 1: A582 430F ²⁾ NPS 1½ and larger: A479 316/A479 316L
Plug	Up to NPS 2: 1.4305 NPS 2½ and larger: A276 410T	A479 316L
Guide bushing	A582 430F	

Valve body	Cast steel A216 WCC	Cast stainless steel A351 CF8M
Packing	PTFE	
Body gasket	Graphite on metal core	

¹⁾ No contact with process medium; only up to NPS 2. For NPS 2½ and larger: one-pieced (see valve bonnet for material)

²⁾ Top seat made of 1.4305

Dimensions and weights

Table 5: Dimensions for Type 3323 Valve · DIN version

Valve	DN	15	20	25	32	40	50	65	80	100
With standard bonnet										
Length L	mm	130	150	160	180	200	230	290	310	350
Height H	mm	123			126			182		206
Height H2	mm	70	80	85	100	105	120	130	140	150
With insulating section										
Length L	mm	130	150	160	180	200	230	290	310	350
Height H4	mm	274			278			330		330

Table 6: Dimensions for Type 3323 Valve · ANSI version

Valve	NPS	½	¾	1	1½	2	2½	3	4	
	DN	15	20	25	40	50	65	80	100	
Height H	in	4.84			4.96		7.17		8.11	
	mm	123			126		182		206	
With standard bonnet										
Class 150										
Length L	in	7.25	7.25	7.25	8.75	10	10.87	11.73	13.86	
	mm	184	184	184	222	254	276	298	352	
Height H2	in	3.62	3.62	3.62	4.37	5	5.43	5.87	1.93	
	mm	92	92	92	111	127	138	149	176	
Class 300										
Length L	in	7.5	7.62	7.75	9.25	10.5	11.5	12.5	14.5	
	mm	190	194	197	235	267	292	318	368	
Height H2	in	3.76	3.82	3.88	4.63	5.26	5.75	6.26	7.24	
	mm	95	97	98.5	117.5	133.5	146	159	184	
With insulating section										
Height H4	in	10.79	10.79	10.79	10.95	10.95	12.99	12.99	12.99	
	mm	274	274	274	278	278	330	330	330	

Table 7: Weights¹⁾ for Type 3323 Valve

Valve	DN	15	20	25	32	40	50	65	80	100
	NPS	½	¾	1	-	1½	2	2½	3	4
With standard bonnet										
Weight, approx.	kg	5	6	7	11	12	15	31	37	49
	lbs	11	13.2	15.4	-	26.5	33.1	68.3	81.6	108
With insulating section										
Weight, approx.	kg	8	9	10	17	18	21	40	45	68
	lbs	17.6	19.8	22	-	39.7	46.3	88.2	99.2	150

¹⁾ The weights specified apply to a specific standard device configuration. Weights of other valve configurations may differ depending on the version (material, trim etc.).

Design and principle of operation

Dimensional drawings

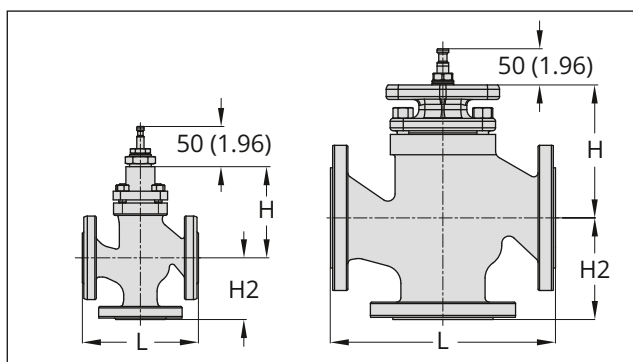


Fig. 6: Type 3323 Three-way Valve

Left: DN 15 to 50/NPS ½ to 2

Right: DN 65 to 100/NPS 2½ to 4

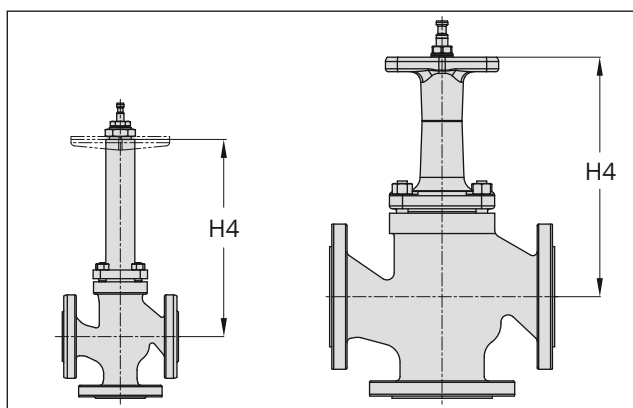


Fig. 7: Type 3323 Three-way Valve with insulating section

Left: DN 15 to 50/NPS ½ to 2

Right: DN 65 to 100/NPS 2½ to 4

i Note

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

- ▶ T 8313 for Type 3372 Electropneumatic Actuator
- ▶ T 8317 for Type 3371 Pneumatic Actuator
- ▶ T 5827 for Type 5827 Electric Actuator
- ▶ T 8331 for Type 3374 Electric Actuator

4 Shipment and on-site transport

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

4.1 Accepting the delivered goods

After receiving the shipment, proceed as follows:

1. Check the scope of delivery. Check that the specifications on the valve nameplate match the specifications in the delivery note. See Chapter 2 for more details on the nameplate.
2. Check the shipment for transportation damage. Report any damage to SAMSON and the forwarding agent (refer to delivery note).
3. Determine the weight and dimensions of the units to be lifted and transported in order to select the appropriate lifting equipment and lifting accessories. Refer to the transport documents and Chapter 3.5.

4.2 Removing the packaging from the valve

Observe the following sequence:

- ⇒ Do not open or remove the packaging until immediately before lifting the control valve to install it into the pipeline.
- ⇒ 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 control valve's center of gravity.
- ⇒ Secure the control 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 injuries in particular) depending on its weight.

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

ⓘ NOTICE

Risk of control 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.
- ⇒ Do not attach load-bearing slings to the actuator, handwheel or any other parts.
- ⇒ Only use slings which are not attached to the valve body to protect the control valve from tilting while being lifted.
- ⇒ Observe lifting instructions (see Chapter 4.3.2).

💡 Tip

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

Shipment and on-site transport

4.3.1 Transporting the valve

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

- ⇒ Leave the control valve in its transport container or on the pallet to transport it.
- ⇒ Observe the transport instructions.

Transport instructions

- Protect the control valve against external influences (e.g. impact).
- Do not damage the corrosion protection (paint, surface coatings). Repair any damage immediately.
- Protect the piping and any mounted valve accessories against damage.
- Protect the control valve against moisture and dirt.
- The permissible transportation temperature of standard control valves is -20 to +65 °C (-4 to +149 °F).

i Note

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

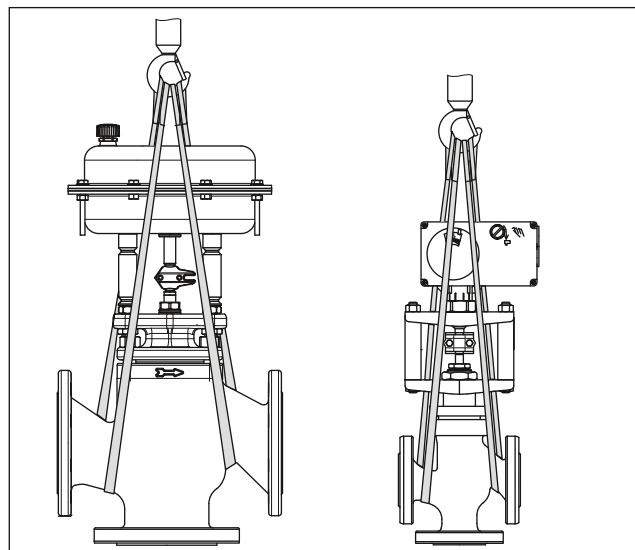


Fig. 8: Lifting points on the control valve

4.3.2 Lifting the valve

See Fig. 8

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

Lifting instructions

- Use a hook with safety latch 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 device 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.

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.
2. If necessary, attach further slings to the control valve and rigging equipment to secure the position of the control valve 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 control valve into the pipeline (see Chapter 5).
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 longer storage periods.
- ⇒ Contact SAMSON in case of different storage conditions or longer storage times.

i Note

SAMSON recommends 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 control valve assembly in the stored position against slipping or tipping over.
- Do not damage the corrosion protection (paint, surface coatings). Repair any damage immediately.
- Protect the control valve against moisture and dirt. Store it at a relative humidity of less than 75 %. In damp spaces, prevent condensation. If necessary, use a drying agent or heating.
- Make sure that the ambient air is free of acids or other corrosive media.
- The permissible storage temperature of standard control valves is -20 to +65 °C (-4 to +149 °F). Contact our after-sales service for the storage temperatures of other valve versions.
- Do not place any objects on the control valve.

Special storage instructions for elastomers

Elastomer, e.g. actuator diaphragm

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

 **Tip**

Our after-sales service can provide more detailed storage instructions on request.

5 Installation

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

5.1 Installation conditions

Work position

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

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

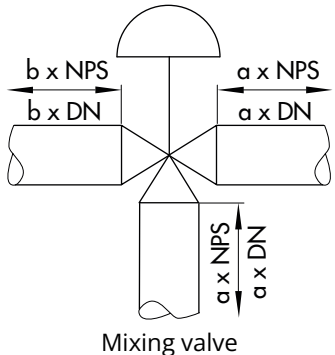
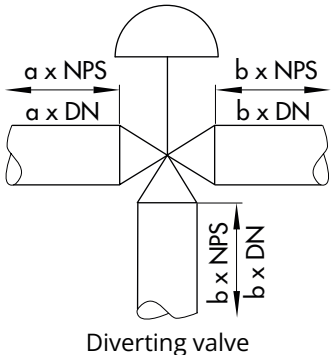
Pipeline routing

The inlet and outlet lengths (see Table 8) 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 control valve functions properly, proceed as follows:

- ⇒ Observe the recommended inlet and outlet lengths (see Table 8). Contact SAMSON if the valve conditions or state of the process medium are different from those specified.
- ⇒ Install the control valve free of stress and with the least amount of vibrations as possible. Read sections 'Mounting position' and 'Support and suspension' in this chapter.
- ⇒ Install the control valve allowing sufficient space to remove the actuator and valve or to perform service and repair work on them.

Table 8: Inlet and outlet lengths

			
		a Inlet length b Outlet length	
State of process medium	Valve conditions	Inlet length a	Outlet length b
Gases	$Ma \leq 0.3$	2	4
	$0.3 \leq Ma \leq 0.7$	2	10
Vapor	$Ma \leq 0.3$	2	4
	$0.3 \leq Ma \leq 0.7$	2	10
	Wet steam (percentage of condensate >5 %)	2	20
Liquids	Free of cavitation/ $w < 10$ m/s	2	4
	Cavitation producing noise/ $w \leq 3$ m/s	2	4
	Cavitation producing noise/ $3 < w < 5$ m/s	2	10
	Critical cavitation/ $w \leq 3$ m/s	2	10
	Critical cavitation/ $3 < w < 5$ m/s	2	20
Flashing	-	2	20
Multi-phase	-	10	20

i Note

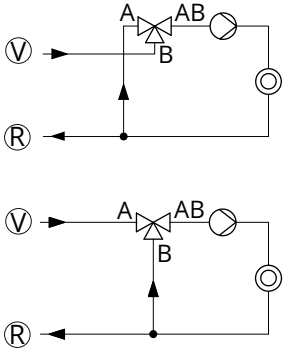
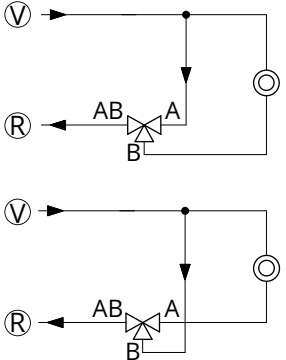
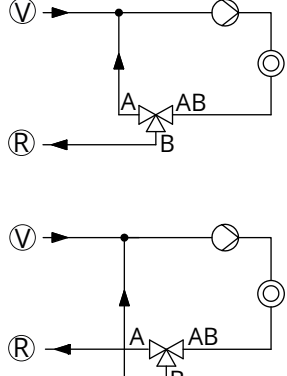
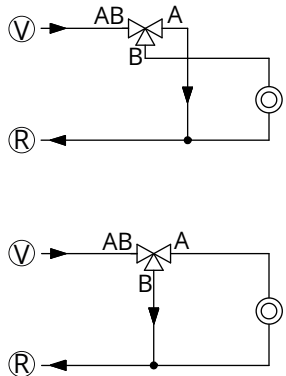
In the version as diverting valve (see Fig. 5), the inlet length a applies to the port AB. The outlet length b applies to the ports A and B.

In the version as mixing valve (see Fig. 4), the inlet length a applies to the ports A and B. The outlet length b applies to the port AB.

Installation

In heating or cooling applications, the valve can be installed in the flow pipe or return pipe.

Table 9: Typical installations

Mixing service Temperature control Q = constant	Diverting service Flow control Q = 0 to 100 %
<p>Fail-safe action: FA = Actuator stem extends, FE = Actuator stem retracts In heating applications with FA, the heating medium (flow) is shut off in the fail-safe position, in cooling applications with FE, cooling is maintained in the fail-safe position.</p>	
<p align="center">Heating with mixing valve (FA) or cooling with mixing valve (FE)</p>	
<p>Installation in the flow pipe</p> 	<p>Installation in the return pipe</p> 
<p align="center">Heating with diverting valve (FA) or cooling with diverting valve (FE)</p>	
<p>Installation in the return pipe</p> 	<p>Installation in the flow pipe</p> 
<p>A Process medium A B Process medium B AB Mixture of process medium A and process medium B V Flow R Return</p>	

Mounting position

Generally, SAMSON recommends 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 and suspension

i Note

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

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

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

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

NOTICE

Risk of control valve damage due to incorrect insulation.

- ⇒ Only insulate control valves up to the bonnet flange of the valve body (see Fig. 9). This also applies to versions with insulating section at medium temperatures below 0 °C (32 °F) or above 220 °C (428 °F). If the insulating section is insulated, it will not function properly.

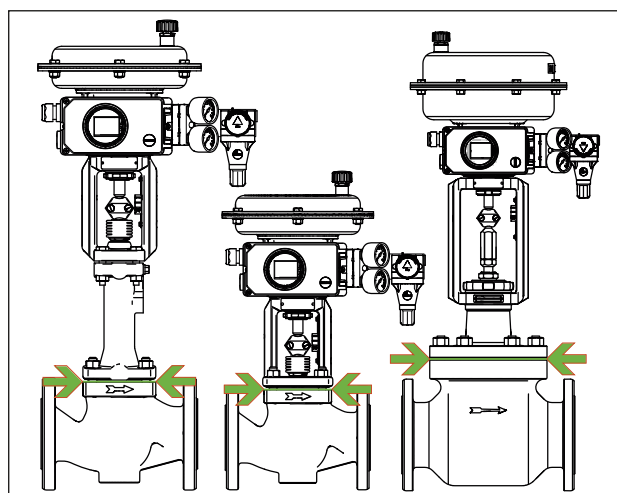


Fig. 9: Limit of insulation for control valves (example shown)

Proceed as follows:

- ⇒ Lay out the necessary material and tools to have them ready during installation work.
- ⇒ Flush the pipelines.

i Note

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

- ⇒ For steam applications, dry the pipelines. Moisture will damage the inside of the valve.
- ⇒ Check any mounted pressure gauges to make sure they function properly.
- ⇒ When the valve and actuator are already assembled, check the tightening torques of the bolted joints. Components may loosen during transport.

5.3 Mounting the device

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

NOTICE

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

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

- ⇒ Observe the tightening torques specified in ▶ AB 0100.

NOTICE

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

Certain tools are required to work on the valve.

- ⇒ Only use tools approved by SAMSON ▶ AB 0100).

5.4 Mounting the actuator onto the valve

DANGER

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

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

WARNING

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

Valves in combination with pneumatic actuators with preloaded springs are under tension. These control valves with SAMSON pneumatic linear actuators (e.g. Type 3271/3277 or Type 3371) can be identified by the long bolts protruding from the bottom of the actuator.

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

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

Table 10: Possible combinations and types of actuator mounting

Actuator		Type of mounting	
Type 3371	Actuator area	120 cm ²	350 cm ²
For nominal size	DN 15 to 50/ NPS ½ to 2	Form B	-
	DN 65 to 100/ NPS 2½ to 4	Form C	Form C
Type 3372	Actuator area	120 cm ²	350 cm ²
For nominal size	DN 15 to 50/ NPS ½ to 2	Form B	-
	DN 65 to 100/ NPS 2½ to 4	Form C	Form C
Type 3374		Form-fit attachment using stem connector and yoke	
Type 5827		Form-fit attachment using stem connector and yoke	

Mounting the actuator

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

a) Pneumatic or electropneumatic actuator

There are two different ways to mount the pneumatic or electropneumatic actuator onto the valve depending on the version (nominal size etc.): mounting using crossbeam or mounting using rods (see Table 10).

Mounting using crossbeam and central nut

When the actuator is mounted to the valve using a crossbeam (form B, see Fig. 12), the actuator is fastened to the valve bonnet using a central nut.

Mounting using rods

When the actuator is mounted on rods (form C, see Fig. 17) the actuator is connected to the valve bonnet using rods. In this case, a crossbeam is not required for mounting the actuator. A plate keeps the correct distance between rods.



Fig. 10: Type 3323-PP



Fig. 11: Type 3323-IP



Fig. 13: Type 3323-E1



Fig. 14: Type 3323-E3

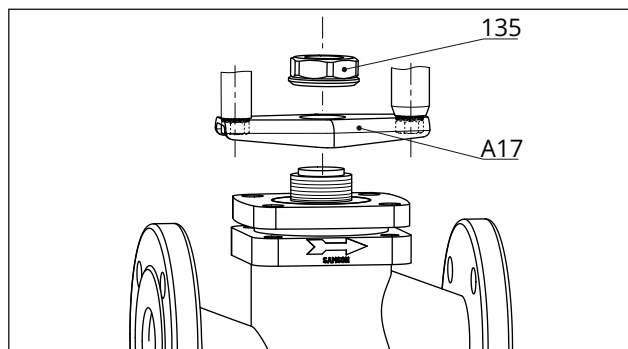


Fig. 12: Mounting using crossbeam and central nut (form B)

- 135 Central nut
- A17 Crossbeam



Fig. 15: Type 3323-PP



Fig. 16: Type 3323-IP

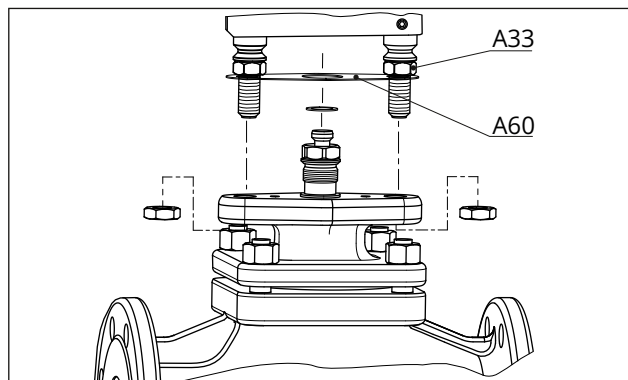


Fig. 17: Mounting using rods (form C)

- A33 Rod
- A60 Plate

b) Electric actuator

When an electric actuator is mounted onto the valve, it is mounted with a form-fit connection using a stem connector and yoke.

5.5 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.

Version with flanges

1. Close the shut-off valves in the pipeline at the inlet and outlet of the plant section while the valve is being installed.
2. Prepare the relevant section of the pipeline for installing the valve.
3. Remove the protective caps from the valve ports before installing the valve.
4. Lift the valve using suitable lifting equipment to the site of installation (see Chapter 4.3.2).
5. Install the control valve as shown in Table 9 depending on whether it is to be used for mixing or diverting service. The plug arrangement (i.e.

Installation

either mixing or diverting valve) is indicated on a label attached to the valve body.

6. Make sure that the correct flange gaskets are used.
7. Bolt the pipe to the valve free of stress.
8. Attach a support or suspension on the valve, if necessary.

5.6 Testing the installed valve

⚠ DANGER

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

Control valves and pipelines are pressure equipment that may burst when handled incorrectly. Flying projectile fragments or the release of process medium under pressure can cause serious injury or even death. Before starting any work on pressure-bearing or pressure-retaining parts belonging to the valve assembly:

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

⚠ DANGER

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

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

⚠ WARNING

Risk of hearing loss or deafness due to loud noise.

Noise emission (e.g. cavitation or flashing) may occur during operation caused by the process medium and the operating conditions. Additionally, a loud noise may briefly occur through the sudden venting of the pneumatic actuator or pneumatic valve accessories not fitted with noise-reducing elements. Both can damage hearing.

- ⇒ Follow the standard operating procedures provided by the plant operator.

In the event of a potential risk:

- ⇒ Wear hearing protection when working near the valve.

⚠ WARNING

Crush hazard arising from moving parts.

The control valve contains moving parts (actuator and plug stem), which can injure hands or fingers if inserted into the valve.

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

⚠ WARNING

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

When the valve is operated with a pneumatic actuator or pneumatic valve accessories, exhaust air is vented

from the actuator, for example, while the valve is operating and when the valve opens or closes.

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

⚠ WARNING

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

Valves in combination with pneumatic actuators with preloaded springs are under tension. These control valves with SAMSON pneumatic linear actuators (e.g. Type 3271/3277 or Type 3371) can be identified by the long bolts protruding from the bottom of the actuator.

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

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

5.6.1 Leak test

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

💡 Tip

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

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

Adjusting the packing

A label on the yoke indicates whether an adjustable packing is installed (see Chapter 2).

📌 NOTICE

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

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

1. Tighten the threaded bushing gradually (by turning it clockwise) until the packing seals the valve.
 2. Open and close the valve several times.
 3. Check the valve for leakage to the atmosphere.
 4. Repeat steps 1 and 2 until the packing completely seals the valve.
- ⇒ If the adjustable packing does not seal properly, contact our after-sales service.

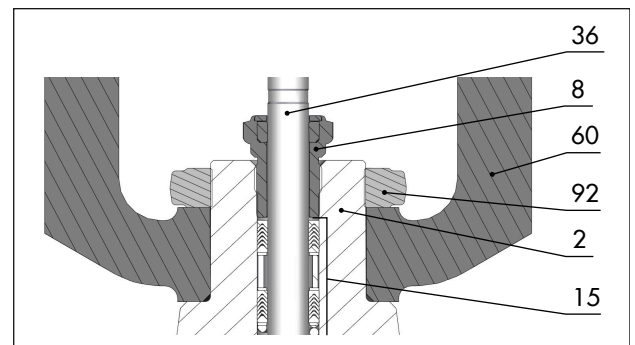


Fig. 18: Packing with threaded bushing (centrally fastened) (example shown)

2	Valve bonnet	36	Plug or piston stem
8	Threaded bushing	60	Yoke
15	Packing set	92	Castellated nut

5.6.2 Travel motion

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

- ⇒ Apply the maximum and minimum control signals to check the end positions of the valve while observing the movement of the actuator stem.
- ⇒ Check the travel reading at the travel indicator scale.

5.6.3 Fail-safe position

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

Fail-safe position with pneumatic actuators with integrated springs

- ⇒ Shut off the signal pressure line.
- ⇒ Check whether the valve moves to the fail-safe position (see Chapter 3.1).

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

- ⇒ Disconnect the supply voltage from the actuator.
- ⇒ Check whether the valve moves to the fail-safe position (see Chapter 3.1).

5.6.4 Pressure test

The plant operator is responsible for performing the pressure test.



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:

- Move the plug to the mid-position to open the valve.
- Observe the maximum permissible pressure for both the valve and plant.

6 Start-up

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

⚠ WARNING

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

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

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

In the event of a potential risk:

- ⇒ Allow components and pipelines to cool down or warm up to the ambient temperature.
- ⇒ Wear protective clothing and safety gloves.

⚠ WARNING

Risk of hearing loss or deafness due to loud noise.

Noise emission (e.g. cavitation or flashing) may occur during operation caused by the process medium and the operating conditions. Additionally, a loud noise may briefly occur through the sudden venting of the pneumatic actuator or pneumatic valve accessories not fitted with noise-reducing elements. Both can damage hearing.

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

In the event of a potential risk:

- ⇒ Wear hearing protection when working near the valve.

⚠ WARNING

Crush hazard arising from moving parts.

The control valve contains moving parts (actuator and plug stem), which can injure hands or fingers if inserted into the valve.

- ⇒ Do not insert hands or finger into the yoke while the air supply or voltage supply is connected to the actuator.
- ⇒ Before working on the pneumatic control valve, disconnect and lock the pneumatic air supply as well as the control signal.

- ⇒ Before working on the electric control valve, disconnect the supply voltage and protect it against unintentional reconnection.
- ⇒ Do not impede the movement of the actuator and plug stem by inserting objects into the yoke.
- ⇒ Before unblocking the actuator and plug stem after they have become blocked (e.g. due to seizing up after remaining in the same position for a long time), release any stored energy in the actuator (e.g. spring compression). See associated actuator documentation.

⚠ WARNING

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

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

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

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

- The control valve is properly installed into the pipeline (see Chapter 5).
- The leak and function tests have been completed successfully (see Chapter 5.6).
- The prevailing conditions in the plant section affected meet the valve sizing requirements (see section 'Intended use' in Chapter 1).

Start-up/putting the device back into operation

1. Allow the valve to cool down or warm up to reach ambient temperature before start-up when the ambient temperature and process medium temperature differ greatly or the medium properties require such a measure.
2. Slowly open the shut-off valves in the pipeline. Slowly opening these valves prevents a sudden surge in pressure and high flow velocities which may damage the valve.
3. Check the valve to ensure it functions properly.

7 Operation

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

⚠ WARNING

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

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

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

In the event of a potential risk:

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

⇒ Wear protective clothing and safety gloves.

⚠ WARNING

Risk of hearing loss or deafness due to loud noise.

Noise emission (e.g. cavitation or flashing) may occur during operation caused by the process medium and the operating conditions. Additionally, a loud noise may briefly occur through the sudden venting of the pneumatic actuator or pneumatic valve accessories not fitted with noise-reducing elements. Both can damage hearing.

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

In the event of a potential risk:

⇒ Wear hearing protection when working near the valve.

⚠ WARNING

Crush hazard arising from moving parts.

The control valve contains moving parts (actuator and plug stem), which can injure hands or fingers if inserted into the valve.

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

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

⇒ Before working on the electric control valve, disconnect the supply voltage and protect it against unintentional reconnection.

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

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

⚠ WARNING

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

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

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

8 Malfunctions

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

8.1 Troubleshooting

Malfunction	Possible reasons	Recommended action
Actuator and plug stem does not move on demand.	Actuator is blocked.	Put the control valve out of operation (see Chapter 10) and remove the blockage. WARNING! A blocked actuator or plug stem (e.g. due to seizing up after remaining in the same position for a long time) can suddenly start to move uncontrollably. Injury to hands or fingers is possible if they are inserted into the actuator or valve. Before trying to unblock the actuator or plug stem, disconnect and lock the pneumatic air supply as well as the control signal or disconnect the supply voltage and protect it against unintentional reconnection. Before unblocking the actuator, release any stored energy in the actuator (e.g. spring compression). See associated actuator documentation.
	Electric actuator: No or incorrect supply voltage connected.	Check the supply voltage and connections.
	Pneumatic actuators: Diaphragm in the actuator defective	See associated actuator documentation.
	Pneumatic actuator: Signal pressure too low	Check the signal pressure. Check the signal pressure line for leakage.
Jolting movement of the actuator and plug stem	Version with adjustable packing ¹⁾ : Packing tightened too far	Tighten the packing correctly (see section 'Adjusting the packing' in Chapter 5.6.1).
Actuator and plug stem do not stroke through the full range.	Pneumatic actuator: Signal pressure too low	Check the signal pressure. Check the signal pressure line for leakage.
	Electric actuator: No or incorrect supply voltage connected.	Check the supply voltage and connections.
	Travel stop active	See associated actuator documentation.
	Incorrect setting of valve accessories	Check the settings of the valve accessories.
Increased flow through closed valve (seat leakage)	Dirt or other foreign particles deposited between the seat and plug.	Shut off the section of the pipeline and flush the valve.
	Valve trim is worn out.	Replace valve trim (see Chapter 9) or contact our after-sales service.
The valve leaks to the atmosphere (fugitive emissions).	Defective packing	Replace packing (see Chapter 9) or contact our after-sales service.
	Version with adjustable packing ¹⁾ : Packing not tightened correctly	Adjust the packing (see section 'Adjusting the packing' in Chapter 5.6.1). Contact our after-sales service when it continues to leak.
	Flanged joint loose or body gaskets worn out	Check the flanged joint. Replace gaskets at the flanged joint (see Chapter 9) or contact our after-sales service.

¹⁾ See Chapter 2

i Note

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

8.2 Emergency action

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

In the event of a valve malfunction:

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

Putting the device back into operation after a malfunction

See Chapter 6.

9 Servicing

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

The following documents are also required for servicing the control valve:

- Mounting and operating instructions for the mounted actuator, for example:
 - ▶ EB 8313-1 for Type 3372 Electropneumatic Actuator (with integrated positioner)
 - ▶ EB 8313-3 for Type 3372 Electropneumatic Actuator (with Type 3725 Positioner)
 - ▶ EB 8317 for Type 3371 Pneumatic Actuator
 - ▶ EB 8331-3 for Type 3374 Electric Actuator (version with three-step signal)
 - ▶ EB 8331-4 for Type 3374 Electric Actuator (version with positioner)
 - ▶ EB 5827-1 for Type 5827 Electric Actuator (version with three-step signal)
 - ▶ EB 5827-2 for Type 5827 Electric Actuator (version with positioner)
- ▶ AB 0100 for tools, tightening torques and lubricants

⚠ DANGER

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

Control valves and pipelines are pressure equipment that may burst when handled incorrectly. Flying projectile fragments or the release of process medium under pressure can cause serious injury or even death. Before starting any work on pressure-bearing or pressure-retaining parts belonging to the valve assembly:

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

⚠ DANGER

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

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

⚠ WARNING

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

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

- ⇒ Follow the standard operating procedures provided by the plant operator.
- In the event of a potential risk:
- ⇒ Allow components and pipelines to cool down or warm up to the ambient temperature.
 - ⇒ Wear protective clothing and safety gloves.

⚠ WARNING

Risk of hearing loss or deafness due to loud noise.

Noise emission (e.g. cavitation or flashing) may occur during operation caused by the process medium and the operating conditions. Additionally, a loud noise may briefly occur through the sudden venting of the pneumatic actuator or pneumatic valve accessories not fitted with noise-reducing elements. Both can damage hearing.

- ⇒ Follow the standard operating procedures provided by the plant operator.
- In the event of a potential risk:
- ⇒ Wear hearing protection when working near the valve.

⚠ WARNING

Crush hazard arising from moving parts.

The control valve contains moving parts (actuator and plug stem), which can injure hands or fingers if inserted into the valve.

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

⚠ WARNING

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

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

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

⚠ WARNING

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

Valves in combination with pneumatic actuators with preloaded springs are under tension. These control valves with SAMSON pneumatic linear actuators (e.g. Type 3271/3277 or Type 3371) can be identified by the long bolts protruding from the bottom of the actuator.

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

⚠ WARNING

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

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

- ⇒ Follow the standard operating procedures provided by the plant operator.
In the event of a potential risk:
 - ⇒ If possible, drain the process medium from the plant sections affected and from the valve.
 - ⇒ Wear protective clothing, safety gloves, respiratory protection and eye protection.

ⓘ NOTICE

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

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

- ⇒ Observe the tightening torques specified in **▶ AB 0100**.

ⓘ NOTICE

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

Certain tools are required to work on the valve.

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

ⓘ NOTICE

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

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

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

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 control valve at certain intervals to prevent possible failure before it can occur. Plant operators are responsible for drawing up an inspection and test plan.

💡 Tip

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

SAMSON recommends the following inspections and tests:

Inspection and testing	Recommended action to be taken in the event of a negative result
Check the markings, labels and nameplates on the control valve for their readability and completeness.	Immediately renew damaged, missing or incorrect nameplates or labels.
	Clean any inscriptions that are covered with dirt and are illegible.
External leakage ¹⁾ : Inspect the control valve at the possible points of leakage to ensure there is no leakage (see following image).	Check the bolted joint (tightening torque).
	Replace the gaskets at the flanged joints. To do so, put the control valve out of operation (see Chapter 10).
	Version with adjustable packing ²⁾ : Adjust the packing (see section 'Adjusting the packing' in Chapter 5.6.1) or replace the packing (see Chapter 9.4).
Seat leakage ¹⁾ (see following image) (without testing to check that the leakage class requirements are met)	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.
	Renew seat and plug, if necessary (see Chapter 9.4). To do so, put the control valve out of operation (see Chapter 10).
Check the control valve for external damage that could impair the proper functioning of the control valve or even its safe operation.	Repair any damage immediately. If necessary, put the control valve out of operation to do so (see Chapter 10).
Check the valve accessories to ensure they are firmly mounted.	Tighten the connections of the valve accessories.

Servicing

Inspection and testing	Recommended action to be taken in the event of a negative result
Check to ensure that the actuator and plug stems move smoothly.	Version with adjustable packing ²⁾ : Tighten the packing correctly (see section 'Adjusting the packing' in Chapter 5.6.1).
	If the actuator stem or plug stem is blocked, put the control valve out of operation (see Chapter 10) and remove the blockage. WARNING! A blocked actuator or plug stem (e.g. due to seizing up after remaining in the same position for a long time) can suddenly start to move uncontrollably. Injury to hands or fingers is possible if they are inserted into the actuator or valve. Before trying to unblock the actuator or plug stem, disconnect and lock the pneumatic air supply as well as the control signal. Before unblocking the actuator, release any stored energy in the actuator (e.g. spring compression). See associated actuator documentation.
	SAMSON recommends the use of positioners with integrated diagnostic firmware for control valves used for on/off service. The partial stroke test included in this software helps prevent a shut-off valve normally in its end position from seizing up or getting jammed.
If possible, check the valve's fail-safe position by briefly interrupting the air supply.	Put the control valve out of operation (see Chapter 10). Identify the cause for the malfunction and rectify it (see Chapter 8).

¹⁾ EXPERTplus valve diagnostics can help identify external leakage at dynamic sealing systems as well as seat leakage in valve versions without balanced plugs while the valve is in use. EXPERTplus comes as standard in the digital positioners (Type 3730, TROVIS 3730, Type 3731, TROVIS 3793, TROVIS 3797).

²⁾ See Chapter 2

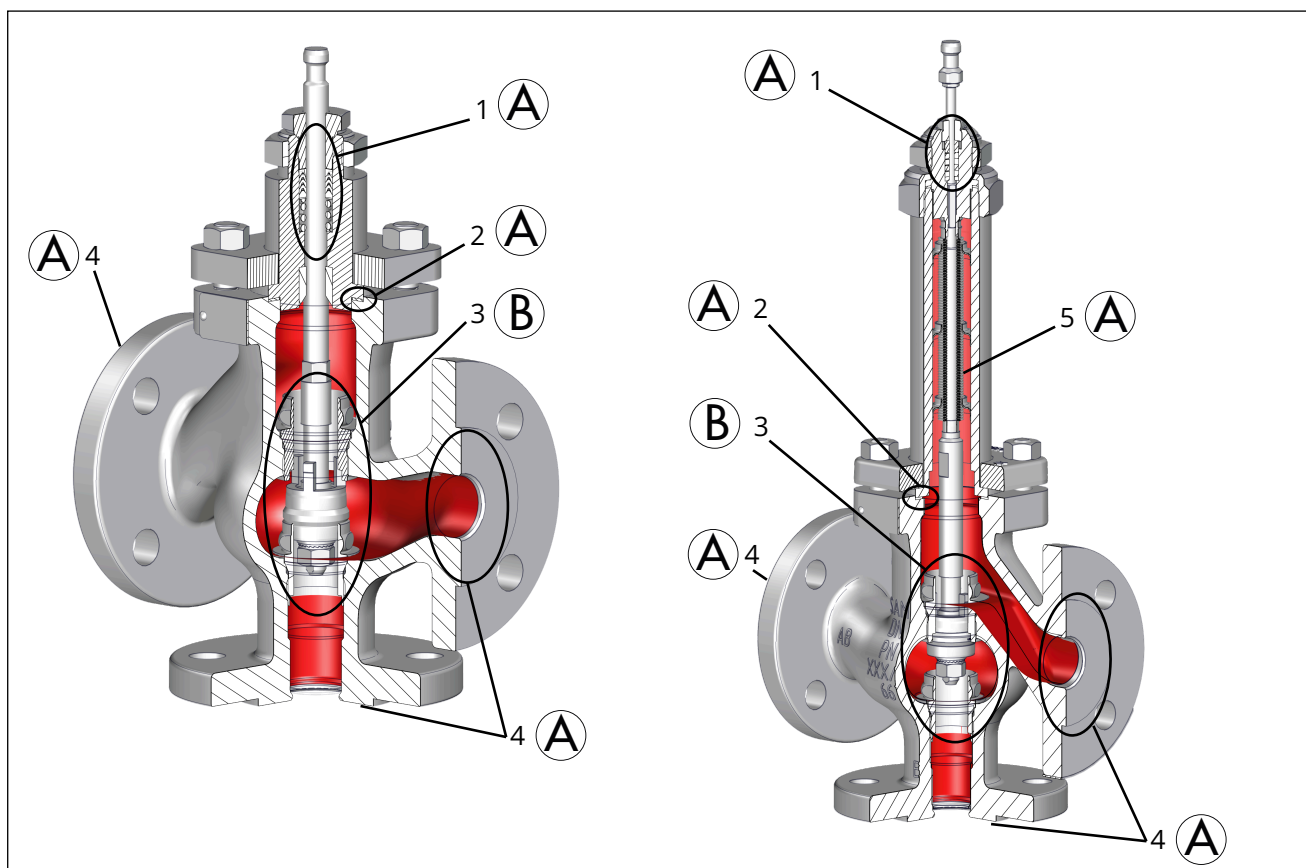


Fig. 19: Possible points of leakage on the three-way valve: Version with standard bonnet (left) and version with bellows seal (right), which also applies to versions with insulating section or intermediate piece.

- | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> Ⓐ External leakage Ⓑ Seat leakage 1 Plug stem guide (packing) (dynamic sealing) 2 Body gaskets (static seals) | <ul style="list-style-type: none"> 3 Seats/body and plug/seats 4 Connection to the pipeline (static sealing) 5 Metal bellows (dynamic sealing) |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

9.2 Service work preparations

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 Chapter 10).
3. Remove the actuator from the valve (see associated actuator documentation).

i Note

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

Tip

SAMSON recommends removing the valve from the pipeline before performing any service work (see Chapter 11).

Once preparation is completed, the service and/or conversion work can be performed as described in the subchapters of Chapter 9.4.

9.3 Installing the valve after service work

1. Mount actuator. See associated actuator documentation.
2. Adjust lower or upper signal bench range (see associated actuator documentation).

Servicing

- If the valve has been removed, re-install the valve into the pipeline (see Chapter 5).
- Put the control valve back into operation (see Chapter 6). Observe the requirements and conditions for start-up or putting the device back into operation.

9.4 Service work

- ⇒ Before performing any service work, preparations must be made to the control valve (see Chapter 9.2).
- ⇒ After all service work is completed, check the control valve before putting it back into operation (see Chapter 5.6).

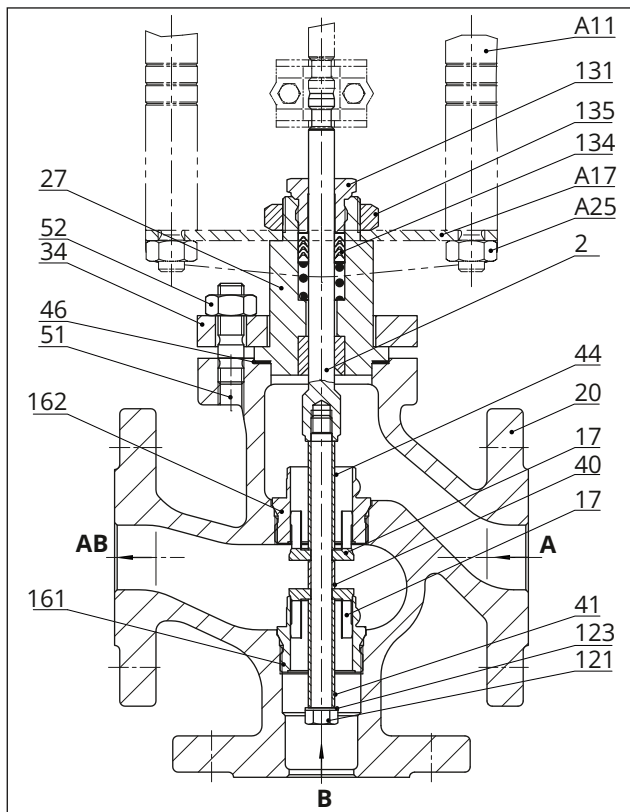


Fig. 20: Type 3323 Valve (mixing valve), DN 15 to 50/NPS ½ to 2 · Mounting using a central nut (form B attachment)

2 Plug stem	121 Hex nut (self-locking)
17 Plug	123 Shim
20 Body	131 Threaded bushing (packing nut)
27 Valve bonnet	133 V-ring packing
34 Flange	135 Central nut
40 Spacer	161 Bottom seat
41 Spacer	162 Top seat
44 Spacer	A11 Rod
46 Body gasket	A17 Crossbeam
51 Stud	A25 Nut
52 Body nut	

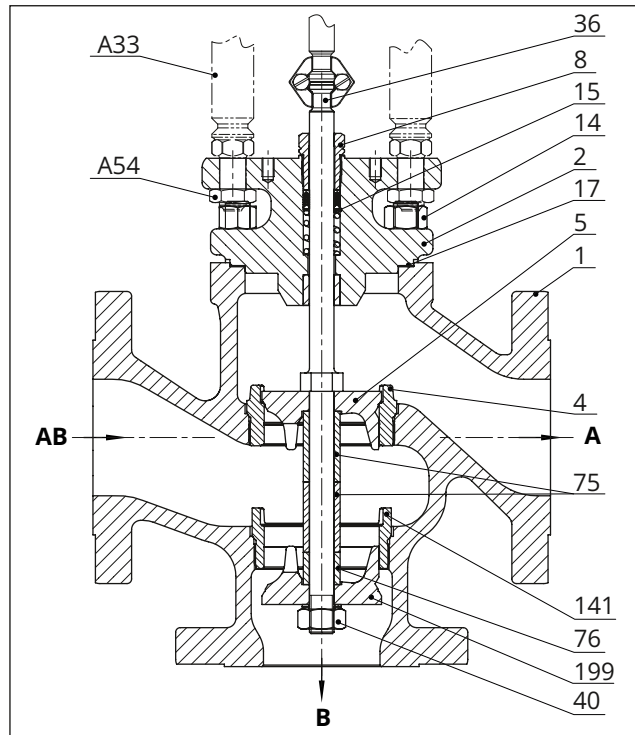


Fig. 21: Type 3323 Valve (diverting valve), DN 65 to 100/NPS 2½ to 4 · Mounting using rods (form C attachment)

1 Body	36 Plug stem
2 Valve bonnet	40 Hex nut (self-locking)
4 Top seat	75 Spacer
5 Top plug	76 Spacer
8 Threaded bushing (packing nut)	141 Bottom seat
14 Body nut	199 Bottom plug
15 Packing set	A33 Rod
17 Body gasket	A54 Nut

9.4.1 Replacing the body gasket

a) Valves up to DN 50/NPS 2

- Unscrew the threaded bushing (131).
- Unscrew the body nuts (52) gradually in a criss-cross pattern and remove them.
- Carefully lift the flange (34) and valve bonnet (27) off the valve body (20) over the plug stem (2).
- Remove the gasket (46). Carefully clean the sealing faces in the valve body (20) and on the valve bonnet (27).
- Apply a suitable lubricant to the new gasket (46) and insert it into the body (20).
- Carefully place the valve bonnet (27) and flange (34) over the plug stem (2) and the studs (51) onto the body (20).

7. Fasten down the flange (34) with the body nuts (52). Tighten the body nuts gradually in a criss-cross pattern. Observe tightening torques.
8. Apply a suitable lubricant to the thread of the threaded bushing (131). Screw in the threaded bushing and tighten it. Observe tightening torques.

b) Valves in DN 65/NPS 2½ and larger

1. Unscrew the threaded bushing (8).
2. Unscrew the body nuts (14) gradually in a criss-cross pattern and remove them.
3. Carefully lift the valve bonnet (2) off the valve body (1) over the plug stem (36).
4. Remove the gasket (17). Carefully clean the sealing faces in the valve body (1) and on the valve bonnet (2).
5. Apply a suitable lubricant to the new gasket (17) and insert it into the body (1).
6. Carefully place the valve bonnet (2) over the plug stem (36) and the studs (13) onto the body (1).
7. Fasten the valve bonnet (2) with body nuts (14). Tighten the body nuts gradually in a crisscross pattern. Observe tightening torques.
8. Apply a suitable lubricant to the thread of the threaded bushing (8). Screw in the threaded bushing and tighten it. Observe tightening torques.

9.4.2 Replacing the packing

i Note

The Type 3323 Valve is either fitted with a standard packing or a form D packing. The packings have an identical design, but contain different materials.

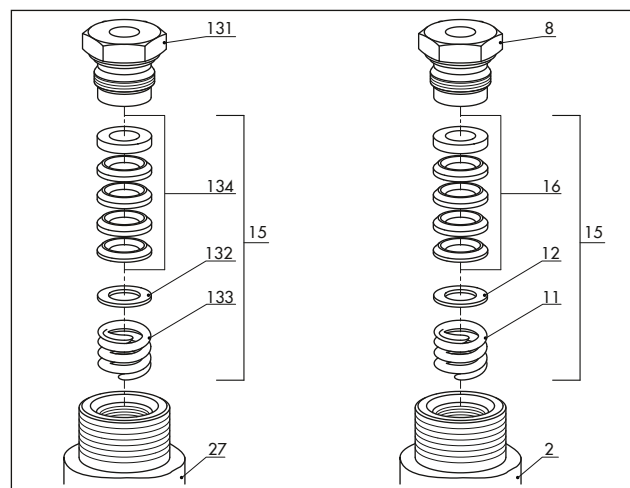


Fig. 22: Left: Packing for valves up to DN 50/NPS 2
Right: Packing for valves in DN 65/NPS 2½ and larger

2/27	Valve bonnet	12/132	Washer
8/131	Threaded bushing	15	Packing set
11/133	Spring	16/134	V-ring packing

a) Valves up to DN 50/NPS 2

1. Unscrew the threaded bushing (131).
2. Unscrew the body nuts (52) gradually in a criss-cross pattern and remove them.
3. Carefully lift the flange (34) and valve bonnet (27) off the valve body (20) over the plug stem (2).
4. Pull the entire packing out of the packing chamber using a suitable tool.
5. Renew damaged parts. Clean the packing chamber thoroughly.
6. Apply a suitable lubricant to all packing parts and the plug stem (2).
7. Carefully place the valve bonnet (27) and flange (34) over the plug stem (2) and the studs (51) onto the body (20). Make sure that the gasket (46) is properly seated in the body.
8. Carefully slide the packing parts over the plug stem into the packing chamber using a suitable tool. Observe the proper sequence (see Fig. 22).
9. Fasten down the flange (34) with the body nuts (52). Tighten the body nuts gradually in a criss-cross pattern. Observe tightening torques.
10. Apply a suitable lubricant to the thread of the threaded bushing (131). Screw in the threaded bushing and tighten it. Observe tightening torques.

b) Valves in DN 65/NPS 2½ and larger

1. Unscrew the threaded bushing (8).
2. Unscrew the body nuts (14) gradually in a criss-cross pattern and remove them.
3. Carefully lift the valve bonnet (2) off the valve body (1) over the plug stem (36).
4. Pull the entire packing out of the packing chamber using a suitable tool.
5. Renew damaged parts. Clean the packing chamber thoroughly.
6. Apply a suitable lubricant to all packing parts and the plug stem (36).
7. Carefully place the valve bonnet (2) over the plug stem (36) and the studs (13) onto the body (1). Make sure that the gasket (17) is properly seated in the body.
8. Carefully slide the packing parts over the plug stem into the packing chamber using a suitable tool. Observe the proper sequence (see Fig. 22).
9. Fasten the valve bonnet (2) with body nuts (14). Tighten the body nuts gradually in a crisscross pattern. Observe tightening torques.
10. Apply a suitable lubricant to the thread of the threaded bushing (8). Screw in the threaded bushing and tighten it. Observe tightening torques.

9.4.3 Replacing the seat and plug

NOTICE

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

⇒ Always replace both the seat and plug.

Tip

SAMSON recommends using new packing parts and gaskets when replacing the trim.

a) Valves in DN 15 and 25/NPS ½ and 1

Note

The design of the mixing and diverting valves in nominal sizes DN 15 to 25 or NPS ½ to 1 is identical.

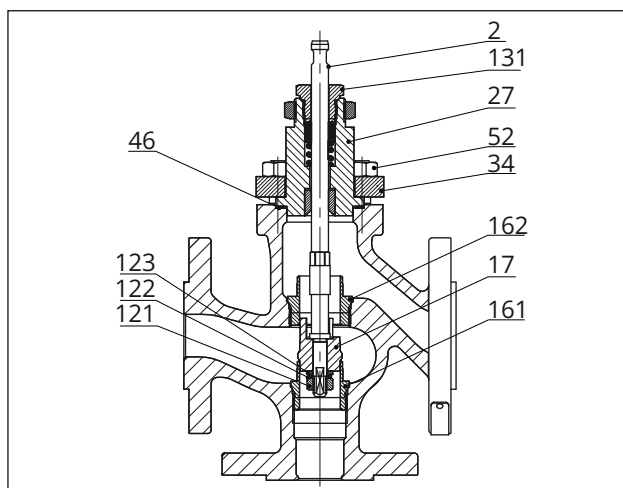


Fig. 23: Valve in DN 15 and 25/NPS ½ and 1

2	Plug stem	121	Hex nut (self-locking)
17	Plug	122	Retaining washer
27	Valve bonnet	123	Shim
34	Flange	131	Threaded bushing (packing nut)
46	Body gasket	161	Bottom seat
52	Body nut	162	Top seat

1. Unscrew the threaded bushing (131).
2. Unscrew the body nuts (52) gradually in a criss-cross pattern and remove them.
3. Carefully lift the flange (34) and valve bonnet (27) off the valve body (20) over the plug stem (2).
4. Hold the plug stem (2) stationary from above at the hexagonal part with a suitable tool and undo the hex nut (121).
5. Remove the retaining washer and shim (122, 123) from the plug stem (2).
6. Carefully pull the plug stem (2) upward out of the body (20).
7. Pull the entire packing out of the packing chamber using a suitable tool.
8. Renew damaged parts. Clean the packing chamber thoroughly.
9. Unscrew the top seat (162) using a suitable tool.
10. Remove plug (17).
11. Unscrew the bottom seat (161) using a suitable tool.
12. Apply a suitable lubricant to the thread and sealing cone of the new bottom seat (161).
13. Screw in the bottom seat (161). Observe tightening torques.
14. Insert new plug (17). Make sure that the three skirt projections face upwards.

15. Apply a suitable lubricant to the thread and sealing cone of the new top seat (162).
16. Screw in the top seat (162). Observe tightening torques.
17. Carefully guide the plug stem (2) from above through the plug (17).
18. Slide the retaining washer and shim (122, 123) from below onto the plug stem (2).
19. Thread and tighten the hex nut (121) onto the plug stem (2). Observe tightening torques.
20. Apply a suitable lubricant to all packing parts and the plug stem (2).
21. Carefully place the valve bonnet (27) and flange (34) over the plug stem (2) and the studs (51) onto the body (20). Make sure that the gasket (46) is properly seated in the body.
22. Carefully slide the packing parts over the plug stem into the packing chamber using a suitable tool. Observe the proper sequence (see Fig. 23).
23. Fasten down the flange (34) with the body nuts (52). Tighten the body nuts gradually in a criss-cross pattern. Observe tightening torques.
24. Apply a suitable lubricant to the thread of the threaded bushing (131). Screw in the threaded bushing and tighten it. Observe tightening torques.

b) Valves in DN 32 and 50/NPS 3 and 4

Tip

On mounting the spacers (40, 41, 44) and plug (17), use a rod or long screw to hold them in position.

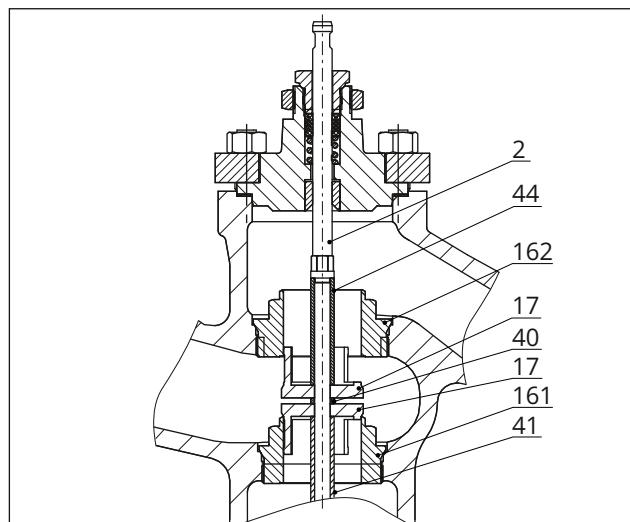


Fig. 24: Valve in DN 32 and 50/NPS 3 and 4 · Mixing valve

2	Plug stem	44	Top spacer
17	Plug	161	Bottom seat
40	Spacer (middle)	162	Top seat
41	Bottom spacer		

Mixing valve

1. Unscrew the threaded bushing (131).
2. Unscrew the body nuts (52) gradually in a criss-cross pattern and remove them.
3. Carefully lift the flange (34) and valve bonnet (27) off the valve body (20) over the plug stem (2).
4. Hold the plug stem (2) stationary from above at the hexagonal part with a suitable tool and undo the hex nut (121).
5. Remove the retaining washer and shim (122, 123) and the bottom spacer (41) from the plug stem (2).
6. Carefully pull the plug stem (2) upward out of the body (20).
7. Pull out the middle spacer (40) sideways.
8. Pull the entire packing out of the packing chamber using a suitable tool.
9. Renew damaged parts. Clean the packing chamber thoroughly.
10. Unscrew the top seat (162) using a suitable tool.
11. Remove the top and bottom plug (17).
12. Unscrew the bottom seat (161) using a suitable tool.
13. Apply a suitable lubricant to the thread and sealing cone of the new seats (161, 162).
14. Screw in the bottom seat (161). Observe tightening torques.

Servicing

15. Insert the bottom plug (17) into the bottom seat (161).
16. Screw in the top seat (162). Observe tightening torques.
17. Carefully guide the plug stem (2) with top spacer (44) from above through the top plug (17), middle spacer (40) and bottom plug (17).
18. Slide the bottom spacer (41) and retaining washer and shim (122, 123) from below onto the plug stem (2).
19. Apply a suitable lubricant to the hex nut (121) and the threaded end of the plug stem (2).
20. Thread and tighten the hex nut (121) onto the plug stem (2). Observe tightening torques.
21. Apply a suitable lubricant to all packing parts and the plug stem (2).
22. Carefully place the valve bonnet (27) and flange (34) over the plug stem (2) and the studs (51) onto the body (20). Make sure that the gasket (46) is properly seated in the body.
23. Carefully slide the packing parts over the plug stem into the packing chamber using a suitable tool. Observe the proper sequence (see Fig. 24).
24. Fasten down the flange (34) with the body nuts (52). Tighten the body nuts gradually in a criss-cross pattern. Observe tightening torques.
25. Apply a suitable lubricant to the thread of the threaded bushing (131). Screw in the threaded bushing and tighten it. Observe tightening torques.

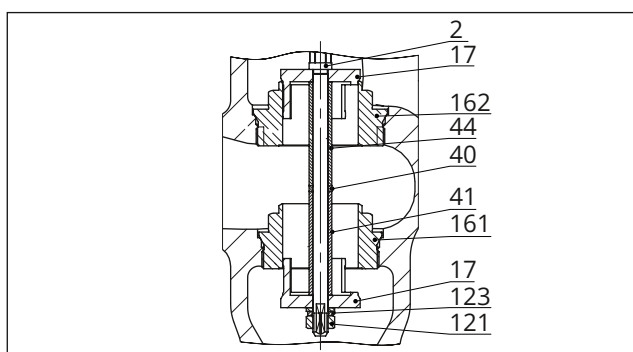


Fig. 25: Valve in DN 32 and 50/NPS 3 and 4 · Diverting valve

2	Plug stem	121	Hex nut (self-locking)
17	Plug	123	Washer
40	Spacer (middle)	161	Bottom seat
41	Bottom spacer	162	Top seat
44	Top spacer		

Diverting valve

1. Unscrew the threaded bushing (131).

2. Unscrew the body nuts (52) gradually in a criss-cross pattern and remove them.
3. Carefully lift the flange (34) and valve bonnet (27) off the valve body (20) over the plug stem (2).
4. Hold the plug stem (2) stationary from above at the hexagonal part with a suitable tool and undo the hex nut (121).
5. Remove the retaining washer and shim (122, 123) from the plug stem (2).
6. Hold the bottom plug (17). Carefully pull the plug stem (2) upward out of the body. Catch the spacers (40, 41, 44) as they fall out.
7. Pull the entire packing out of the packing chamber using a suitable tool.
8. Renew damaged parts. Clean the packing chamber thoroughly.
9. Remove the top plug (17).
10. Unscrew the top seat (162) and bottom seat (161) using a suitable tool.
11. Remove the bottom plug (17).
12. Apply a suitable lubricant to the thread and sealing cone of the new seats (161, 162).
13. Place the bottom plug (17) into the body (20).
14. Screw in the bottom seat (161). Observe tightening torques.
15. Use a suitable tool to catch the bottom plug (17) and the spacers (41, 40, 44).
16. Screw in the top seat (162). Observe tightening torques.
17. Place the top plug (17) into the top seat (162).
18. Carefully guide the plug stem (2) from above through the top plug (17), top spacer (44), middle spacer (40), bottom spacer (41) and bottom plug (17).
19. Apply a suitable lubricant to the hex nut (121) and the threaded end of the plug stem (2).
20. Slide the retaining washer and shim (122, 123) from below onto the plug stem (2).
21. Thread and tighten the hex nut (121) onto the plug stem (2). Observe tightening torques.
22. Apply a suitable lubricant to all packing parts and the plug stem (2).
23. Carefully place the valve bonnet (27) and flange (34) over the plug stem (2) and the studs (51) onto the body (20). Make sure that the gasket (46) is properly seated in the body.

24. Carefully slide the packing parts over the plug stem into the packing chamber using a suitable tool. Observe the proper sequence (see Fig. 25).
25. Fasten down the flange (34) with the body nuts (52). Tighten the body nuts gradually in a criss-cross pattern. Observe tightening torques.
26. Apply a suitable lubricant to the thread of the threaded bushing (131). Screw in the threaded bushing and tighten it. Observe tightening torques.

b) Valves in DN 65/NPS 2½ and larger

Tip

On mounting the spacers (75, 76) and plugs (5, 199), use a rod or long screw to hold them in position.

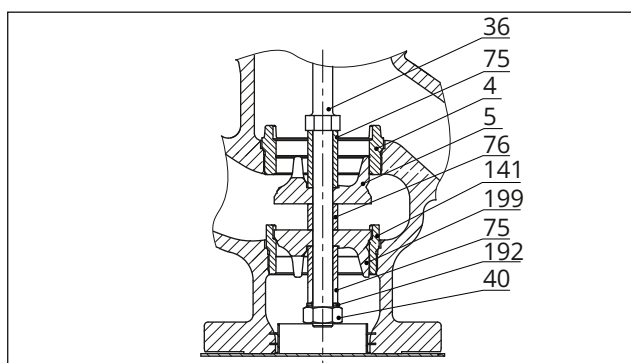


Fig. 26: Valve in DN 65/NPS 2½ and larger · Mixing valve

4	Top seat	76	Spacer (short)
5	Top plug	141	Bottom seat
36	Plug stem	192	Retaining washer
40	Hex nut (self-locking)	199	Bottom plug
75	Spacer		

Mixing valve

1. Unscrew the threaded bushing (8).
2. Unscrew the body nuts (14) gradually in a criss-cross pattern and remove them.
3. Carefully lift the valve bonnet (2) off the valve body (1) over the plug stem (36).
4. Hold the plug stem (36) stationary from above at the hexagonal part with a suitable tool and undo the hex nut (40).
5. Remove the retaining washer (192) and bottom spacer (75) from the plug stem (36).
6. Carefully pull the plug stem (36) upward out of the body (1). Pull out the short spacer (76) sideways.
7. Pull the entire packing out of the packing chamber using a suitable tool.

8. Renew damaged parts. Clean the packing chamber thoroughly.
9. Unscrew the top seat (4) using a suitable tool.
10. Remove the top plug (5) and bottom plug (199).
11. Unscrew the bottom seat (141) using a suitable tool.
12. Apply a suitable lubricant to the thread and sealing cone of the new seats (4, 141).
13. Screw in the bottom seat (161). Observe tightening torques.
14. Insert the bottom plug (199) into the bottom seat (141).
15. Screw in the top seat (4). Observe tightening torques.
16. Carefully guide the plug stem (36) with top spacer (75) from above through the top plug (5), short spacer (76) and bottom plug (199).
17. Slide the bottom spacer (75) and retaining washer (192) from below onto the plug stem (36).
18. Apply a suitable lubricant to the hex nut (40) and the threaded end of the plug stem (36).
19. Thread and tighten the hex nut (40) onto the plug stem (36). Observe tightening torques.
20. Apply a suitable lubricant to all packing parts and the plug stem (36).
21. Carefully place the valve bonnet (2) over the plug stem (36) and the studs (13) onto the body (1). Make sure that the gasket (17) is properly seated in the body.
22. Carefully slide the packing parts over the plug stem into the packing chamber using a suitable tool. Observe the proper sequence (see Fig. 26).
23. Fasten the valve bonnet (2) with body nuts (14). Tighten the body nuts gradually in a crisscross pattern. Observe tightening torques.
24. Apply a suitable lubricant to the thread of the threaded bushing (8). Screw in the threaded bushing and tighten it. Observe tightening torques.

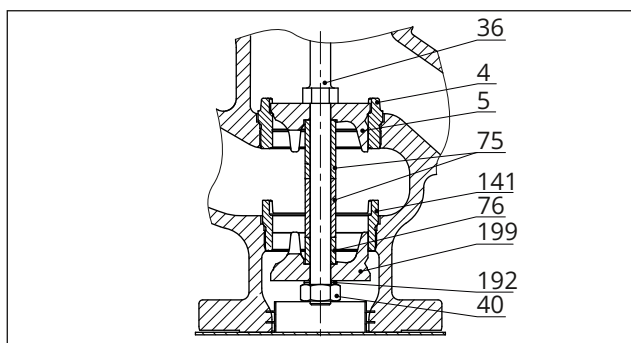


Fig. 27: Valve in DN 65/NPS 2½ and larger · Diverting valve

4	Top seat	76	Spacer (short)
5	Top plug	141	Bottom seat
36	Plug stem	192	Retaining washer
40	Hex nut (self-locking)	199	Bottom plug
75	Spacer		

Diverting valve

1. Unscrew the threaded bushing (8).
2. Unscrew the body nuts (14) gradually in a criss-cross pattern and remove them.
3. Carefully lift the valve bonnet (2) off the valve body (1) over the plug stem (36).
4. Hold the plug stem (36) stationary from above at the hexagonal part with a suitable tool and undo the hex nut (40).
5. Remove the retaining washer (192) from the plug stem (36).
6. Hold the bottom plug (199). Carefully pull the plug stem (36) upward out of the body. Catch the spacers (75,76) as they fall out.
7. Pull the entire packing out of the packing chamber using a suitable tool.
8. Renew damaged parts. Clean the packing chamber thoroughly.
9. Remove the top plug (5).
10. Unscrew the top seat (4) and bottom seat (141) using a suitable tool.
11. Remove the bottom plug (199).
12. Apply a suitable lubricant to the thread and sealing cone of the new seats (4, 141).
13. Place the bottom plug (199) into the body (1).
14. Screw in the bottom seat (141). Observe tightening torques.
15. Use a suitable tool to catch the bottom plug (199) and the spacers (75, 76).
16. Screw in the top seat (4). Observe tightening torques.
17. Place the top plug (5) into the top seat (4).

18. Carefully guide the plug stem (36) from above through the top plug (5), spacers (75, 76) and bottom plug (199).
19. Apply a suitable lubricant to the hex nut (40) and the threaded end of the plug stem (36).
20. Slide the retaining washer (192) from below on to the plug stem (36).
21. Thread and tighten the hex nut (40) onto the plug stem (36). Observe tightening torques.
22. Apply a suitable lubricant to all packing parts and the plug stem (36).
23. Carefully place the valve bonnet (2) over the plug stem (36) and the studs (13) onto the body (1). Make sure that the gasket (17) is properly seated in the body.
24. Carefully slide the packing parts over the plug stem into the packing chamber using a suitable tool. Observe the proper sequence (see Fig. 27).
25. Fasten the valve bonnet (2) with body nuts (14). Tighten the body nuts gradually in a crisscross pattern. Observe tightening torques.
26. Apply a suitable lubricant to the thread of the threaded bushing (8). Screw in the threaded bushing and tighten it. Observe tightening torques.

9.5 Ordering spare parts and operating supplies

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

Spare parts

See Appendix for details on spare parts.

Lubricants

See document ► AB 0100 for details on suitable lubricants.

Tools

See document ► AB 0100 for details on suitable tools.

10 Decommissioning

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

⚠ DANGER

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

Control valves and pipelines are pressure equipment that may burst when handled incorrectly. Flying projectile fragments or the release of process medium under pressure can cause serious injury or even death. Before starting any work on pressure-bearing or pressure-retaining parts belonging to the valve assembly:

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

⚠ DANGER

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

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

⚠ WARNING

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

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

- ⇒ Follow the standard operating procedures provided by the plant operator.

In the event of a potential risk:

- ⇒ Allow components and pipelines to cool down or warm up to the ambient temperature.
- ⇒ Wear protective clothing and safety gloves.

⚠ WARNING

Risk of hearing loss or deafness due to loud noise.

Noise emission (e.g. cavitation or flashing) may occur during operation caused by the process medium and the operating conditions. Additionally, a loud noise may briefly occur through the sudden venting of the pneumatic actuator or pneumatic valve accessories not fitted with noise-reducing elements. Both can damage hearing.

- ⇒ Follow the standard operating procedures provided by the plant operator.

In the event of a potential risk:

- ⇒ Wear hearing protection when working near the valve.

⚠ WARNING

Crush hazard arising from moving parts.

The control valve contains moving parts (actuator and plug stem), which can injure hands or fingers if inserted into the valve.

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

⚠ WARNING

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

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

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

⚠ WARNING

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

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

- ⇒ *Follow the standard operating procedures provided by the plant operator.*
In the event of a potential risk:
 - ⇒ *If possible, drain the process medium from the plant sections affected and from the valve.*
 - ⇒ *Wear protective clothing, safety gloves, respiratory protection and eye protection.*

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

1. Close the shut-off valves upstream and downstream of the control valve to stop the process medium from flowing through the valve.
2. Completely drain the pipelines and valve.
3. **Pneumatic control valve:** disconnect and lock the pneumatic air supply to depressurize the actuator.
Electric control valve: disconnect and lock the control signal or disconnect the supply voltage and protect it against unintentional reconnection.
4. Release any stored energy.
5. If necessary, allow the pipeline and valve components to cool down or warm up to the ambient temperature.

11 Removal

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

⚠ WARNING

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

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

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

In the event of a potential risk:

- ⇒ Allow components and pipelines to cool down or warm up to the ambient temperature.
- ⇒ Wear protective clothing and safety gloves.

⚠ WARNING

Crush hazard arising from moving parts.

The control valve contains moving parts (actuator and plug stem), which can injure hands or fingers if inserted into the valve.

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

⚠ WARNING

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

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

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

In the event of a potential risk:

- ⇒ If possible, drain the process medium from the plant sections affected and from the valve.
- ⇒ Wear protective clothing, safety gloves, respiratory protection and eye protection.

⚠ WARNING

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

Valves in combination with pneumatic actuators with preloaded springs are under tension. These control valves with SAMSON pneumatic linear actuators (e.g. Type 3271/3277 or Type 3371) can be identified by the long bolts protruding from the bottom of the actuator.

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

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

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

11.1 Removing the valve from the pipeline

Version with flanges

1. Support the control valve to hold it in place when separated from the pipeline (see Chapter 4).
2. Unbolt the flanged joint.
3. Remove the valve from the pipeline (see Chapter 4).

11.2 Removing the actuator from the valve

See associated actuator documentation.

12 Repairs

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

NOTICE

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

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

12.1 Returning devices to SAMSON

Defective devices can be returned to SAMSON for repair.

Proceed as follows to return devices:

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

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

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

i Note

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

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

13 Disposal



SAMSON is a producer registered in Europe, agency in charge

▶ www.samsongroup.com > About SAMSON > Environment, Social & Governance > Material Compliance > Waste electrical and electronic equipment (WEEE)
WEEE reg. no.: DE 62194439

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

i Note

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

💡 Tip

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

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

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: Germany
 - Country of origin: France
- Declaration of conformity in compliance with Machinery Directive 2006/42/EC for the control valves listed on the certificate with Type 3323 Valve
- Declaration of incorporation in compliance with Machinery Directive 2006/42/EC for Type 3323 Valve without actuator

The certificates shown were up to date at the time of publishing. The latest certificates can be found on our website: ► www.samsongroup.com > Products > Valves > 3323

Other optional certificates are available on request.



EU-KONFORMITÄTSERKLÄRUNG EU DECLARATION OF CONFORMITY

Modul A/Module A

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

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

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

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

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

Richtlinie des Europäischen Parlaments und des Rates zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die Bereitstellung von Druckgeräten auf dem Markt/Directive of the European Parliament and of the Council on the harmonization of the laws of the Member States relating to the making available on the market of pressure equipment	2014/68/EU	vom 15. Mai 2014/ of 15 May 2014
Angewandtes Konformitätsbewertungsverfahren für Fluide nach Art. 4 Abs. 1/ Applied conformity assessment procedure for fluids according to Article 4(1)	Modul A/Module A	

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

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

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

Klaus Hörschken
Zentralabteilungsleiter/Head of Central Department
Entwicklung Ventile und Antriebe/R&D, Valves and Actuators

Dr. Michael Heß
Zentralabteilungsleiter/Head of Central Department
Product Management & Technical Sales

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EU DECLARATION OF CONFORMITY



Translation of the German original

Module H / N° CE-0062-PED-H-SAM 001-25-DEU

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

Devices	Series	Type	Version
Globe valve	240	3241	EN, cast iron body, DN 150 and larger, body of spheroidal graphite iron, DN 100 and larger, fluids G2, L1, L2 ¹⁾
			ENANSI, body of steel etc., all fluids
Three-way valve	240	3244	EN, cast iron body, DN 150 and larger, body of spheroidal graphite iron, DN 100 and larger, fluids G2, L1, L2 ¹⁾
			ENANSI, body of steel etc., all fluids
Cryogenic valve	240	3248	EN/ANSI, all fluids
Globe valve	250	3251	EN/ANSI, all fluids
Globe valve	250	3251-E	EN/ANSI, all fluids
Three-way valve	250	3253	ENANSI, body of steel etc., all fluids
Globe valve	250	3254	EN/ANSI, all fluids
Angle valve	250	3256	EN/ANSI, all fluids
Angle valve (IG standard)	250	3259	EN, all fluids
Globe valve	V2001	3321	EN, body of steel etc., all fluids
			ANSI, all fluids
Three-way valve	V2001	3323	EN, body of steel etc., all fluids
			ANSI, all fluids
Silencer	3381	3381-1	EN/ANSI, single attenuation plate with welding ends, all fluids
		3381-3	EN/ANSI, all fluids
		3381-4	EN/ANSI, single multi-stage attenuation plate with welding ends, all fluids
Globe valve	240	3241	ANSI, cast iron body, Class 125, NPS 5 and larger, fluids G2, L1, L2 ¹⁾
Cryogenic valve	240	3246	EN/ANSI, all fluids
Three-way valve	250	3253	EN, cast iron body, DN 200 and larger, PN 16, fluids G2, L1, L2 ¹⁾
Globe valve	290	3291	ANSI, all fluids
Angle valve	290	3296	ANSI, all fluids
Cryogenic valve	-	3588	ANSI, up to NPS 6, Class 600, all fluids
Globe valve	590	3591	ANSI, all fluids
Cryogenic valve	590	3598	ANSI, NPS 3 to 8, Class 900, all fluids
Control valve	590	3595	ANSI, all fluids
Globe valve	SMS	241GR	EN/ANSI, all fluids
Globe valve	SMS	251GR	EN/ANSI, all fluids
Globe valve	SMS	261GR	EN/ANSI, all fluids
Cryogenic valve	SMS	251GC	EN/ANSI, all fluids

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

Conformity with the following requirement:

Directive of the European Parliament and of the Council on the harmonization of the laws of the Member States relating to the making available on the market of pressure equipment	2014/68/EU	of 15 May 2014
Conformity assessment procedure applied for liquids according to Article 4(1)	Module H	Certificate no.: N°CE-0062-PED-H-SAM 001-25-DEU by Bureau Veritas 0062

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

Bureau Veritas Services SAS, 4 place des Saisons, 92400 Courbevoie, France

Applied harmonized standards and technical standards: EN 16668, ASME B16.34

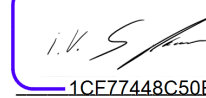
Manufacturer: SAMSON AKTIENGESELLSCHAFT, Weismüllerstraße 3, 60314 Frankfurt am Main, Germany

Frankfurt am Main, 15 October 2025



Dr. Andreas Widl
Chairman of the Executive Board (CEO)

Signiert von:



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i.V. Sebastian Krause
Vice President Product Development



DECLARATION UE DE CONFORMITE
EU DECLARATION OF CONFORMITY

DC014
2025-08

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 – 65	Tous fluides / all fluids	
		ANSI		P _{max} T= 70°F 150 psi	NPS 1 ¼ – 2 ½		
Détendeur alimentaire / Pressure reducing valve	2371-1	DIN	Acier / steel	P _{max} T= 20°C 10 bar	DN 32 – 65		
		ANSI		P _{max} T= 70°F 150 psi	NPS 1 ¼ – 2 ½		
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	CI 125 CI 250	NPS 2 ½ - 4 NPS 1 ½ - 2	Tous fluides / all fluids	
		DIN	Acier / steel	PN10 PN16 PN25	DN 32 – 100 DN 32 – 50 DN 32 - 40		
		ANSI		CI 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		CI 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		CI 150	NPS 1 ¼ - 2		
Vanne équerre / Angle valve	3256	DIN	Acier / steel	PN16	DN 32 – 50	Tous fluides / all fluids	
		ANSI		CI 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		CI 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		CI 125	NPS 2 ½ - 4		
		DIN	Fonte sphéroïdale / spheroidal graphite iron	PN25	DN 50 – 80	Tous fluides / all fluids	
		ANSI	Acier / steel	CI 150	NPS 1 ½ - 2		
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 PN 16-20	DN 50 – 100 DN 50	Tous fluides / all fluids	
		ANSI		Acier / steel	CI 150		NPS 2
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		



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**DC014
2025-08**

Module A / Modul A

Appareils / Devices	Type	Exécution / Version	Matériel du corps / body Mate- rial	PN Class	DN NPS	Fluides / fluids
Vanne alimentaire / Sanitary valve	3347	DIN ANSI	Acier / steel	P _{max} T= 20°C 10 bar P _{max} T= 70°F 150 psi	DN 125 – 150 NPS 5 – 6	G2, L1, L2 ¹⁾
Vanne aseptique / Aseptic valve	3349	DIN ANSI	Acier / steel	P _{max} T= 20°C 10 bar P _{max} T= 20°C 16 bar P _{max} T= 20°C 25 bar P _{max} T= 70°F 150 psi P _{max} T= 70°F 230 psi P _{max} T= 70°F 360 psi	DN 32 – 100 DN 32 – 50 DN 32 – 40 NPS 1 ¼ – 4 NPS 1 ¼ – 2 NPS 1 ¼ – 1 ½	Tous fluides / all fluids
Vanne Tout ou Rien / On-Off Valve	3351	DIN	Acier / steel	PN16	DN 32 – 50	Tous fluides / all fluids
		ANSI		PN25	DN 32 – 40	
		DIN	Fonte grise & fonte sphéroïdale / cast iron & spheroidal graphite iron Fonte sphéroïdale / spheroidal graphite iron	PN16	DN 65 – 100	G2, L1, L2 ¹⁾
		ANSI		CI 150	NPS 1 ¼ – 2	
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 13/08/25

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



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DC012
2025-08

Module H / Modul H, N°/ Nr CE-0062-PED-H-SAM 001-23-FRA-rev-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 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		CI 125	NPS 6	
		DIN	Fonte sphéroïdale / spheroidal graphite iron	PN 25	DN 100 – 150	Tous fluides / all fluids
		ANSI	Acier / steel	PN10 PN16 PN25 PN40	DN 125 – 150 DN 65 – 150 DN 50 – 150 DN 32 – 150	
ANSI	CI 150 CI 300	NPS 2 ½ - 6 NPS 1 ¼ - 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		CI 150 CI 300	NPS 2 ½ – 6 NPS 1 ¼ – 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		CI 150 CI 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		CI 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		CI 150 CI 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		CI 150 CI 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		CI 150 CI 300	NPS 2 ½ – 4 NPS 1 ½ – 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		CI 150 CI 300	NPS 2 ½ – 4 NPS 1 ¼ – 2	
Vanne papillon / Butterfly valve	3331	DIN	Acier / steel	PN10 PN16 - 20 PN25 – 50	DN 150 – 400 DN 80 - 400 DN 50 – 400	Tous fluides / all fluids
		ANSI		CI 150 CI 300	NPS 3 – 16 NPS 2 - 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⁾
			Acier / steel	P _{max T= 70°F} 230 psi	NPS 6	Tous fluides / all fluids
				P _{max T= 70°F} 150 - 230 psi	NPS 2 ½ – 6	



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EU DECLARATION OF CONFORMITY**

**DC012
2025-08**

Module H / Modul H, N°/ Nr CE-0062-PED-H-SAM 001-23-FRA-rev-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 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 aseptique / Aseptic valve	3349_HV01	DIN	Acier / steel	P _{max} T = 20°C 16 bar P _{max} T = 20°C 25 bar	DN 65 – 100 DN 50 – 100	Tous fluides / all fluids
		ANSI		P _{max} T = 70°F 230 psi P _{max} T = 70°F 360 psi	NPS 2 ½ – 4 NPS 2 – 4	
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	DN 400 – 500	G2, L2 ¹⁾
				PN16	DN 250 – 500	
				PN25	DN 150 – 500	
				PN40	DN 125 – 500	

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-rev-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

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, 4 place des Saisons 92400 COURBEVOIE
Fabricant / manufacturer : Samson Régulation SAS, 1, rue Jean Corona, FR-69120 VAULX-EN-VELIN

Vaulx-en-Velin, le 13/08/25

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

EU DECLARATION OF CONFORMITY TRANSLATION



Declaration of Conformity of Final Machinery

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

For the following products:

Types 3323-IP/-PP Pneumatic Control Valves consisting of the Type 3323 Valve and Type 3371 Pneumatic Actuator or Type 3372 Electropneumatic Actuator

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 3323 Valve: Mounting and Operating Instructions EB 8113/8114
- Type 3371 Actuator: Mounting and Operating Instructions EB 8317
- Type 3372 Actuator: Mounting and Operating Instructions EB 8313-X

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 12100:2011-03

Comment:

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

Persons authorized to compile the technical file:

SAMSON AG, Weismüllerstraße 3, 60314 Frankfurt am Main, Germany
Frankfurt am Main, 04 March 2021

Peter Arzbach
Director
Product Management

Peter Scheermesser
Director
Product Life Cycle Management and ETO
Development for Valves and Actuators

DECLARATION OF INCORPORATION TRANSLATION



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

For the following products:

Type 3323 Pneumatic Control Valve

We certify that the Type 3323 Pneumatic Control 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:

- Type 3323 Valve: Mounting and Operating Instructions EB 8113/8114

Referenced technical standards and/or specifications:

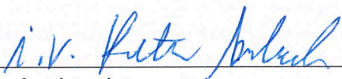
- VCI, VDMA, VGB: Leitfaden Maschinenrichtlinie (2006/42/EG) – Bedeutung für Armaturen, May 2018 [German only]
- VCI, VDMA, VGB: Zusatzdokument zum „Leitfaden Maschinenrichtlinie (2006/42/EG) – Bedeutung für Armaturen“ vom Mai 2018 [German only], based on DIN EN ISO 12100:2011-03

Comments:

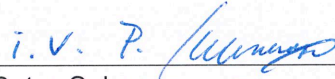
- See mounting and operating instructions for residual hazards.
- Also observe the referenced documents listed in the mounting and operating instructions.

Persons authorized to compile the technical file:

SAMSON AG, Weismüllerstraße 3, 60314 Frankfurt am Main, Germany
Frankfurt am Main, 04 March 2021



Peter Arzbach
Director
Product Management



Peter Scheermesser
Director
Product Life Cycle Management and ETO
Development for Valves and Actuators

15 Appendix

15.1 Tightening torques, lubricants and tools

▶ AB 0100 tools, tightening torques and lubricants

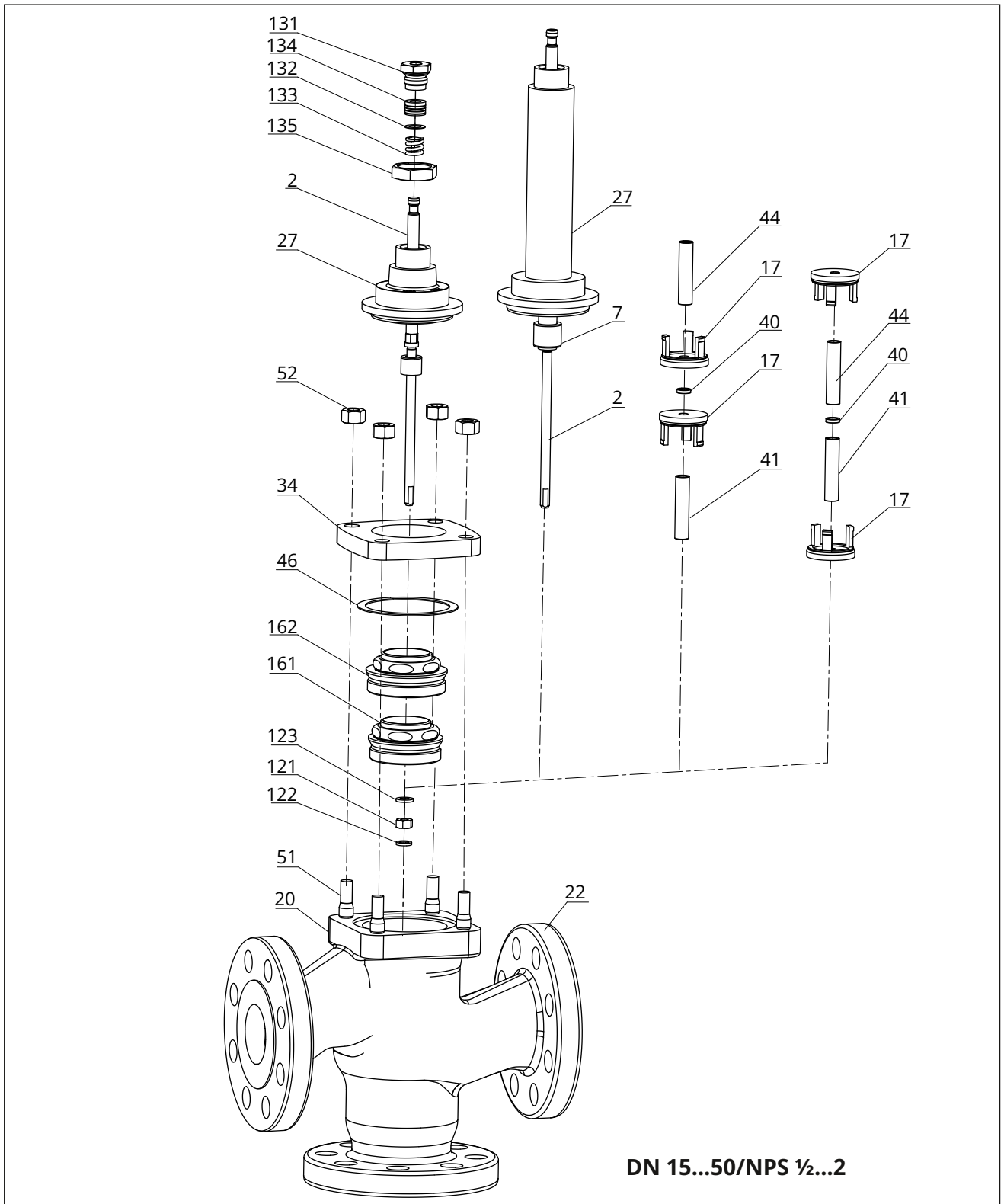
15.2 Spare parts

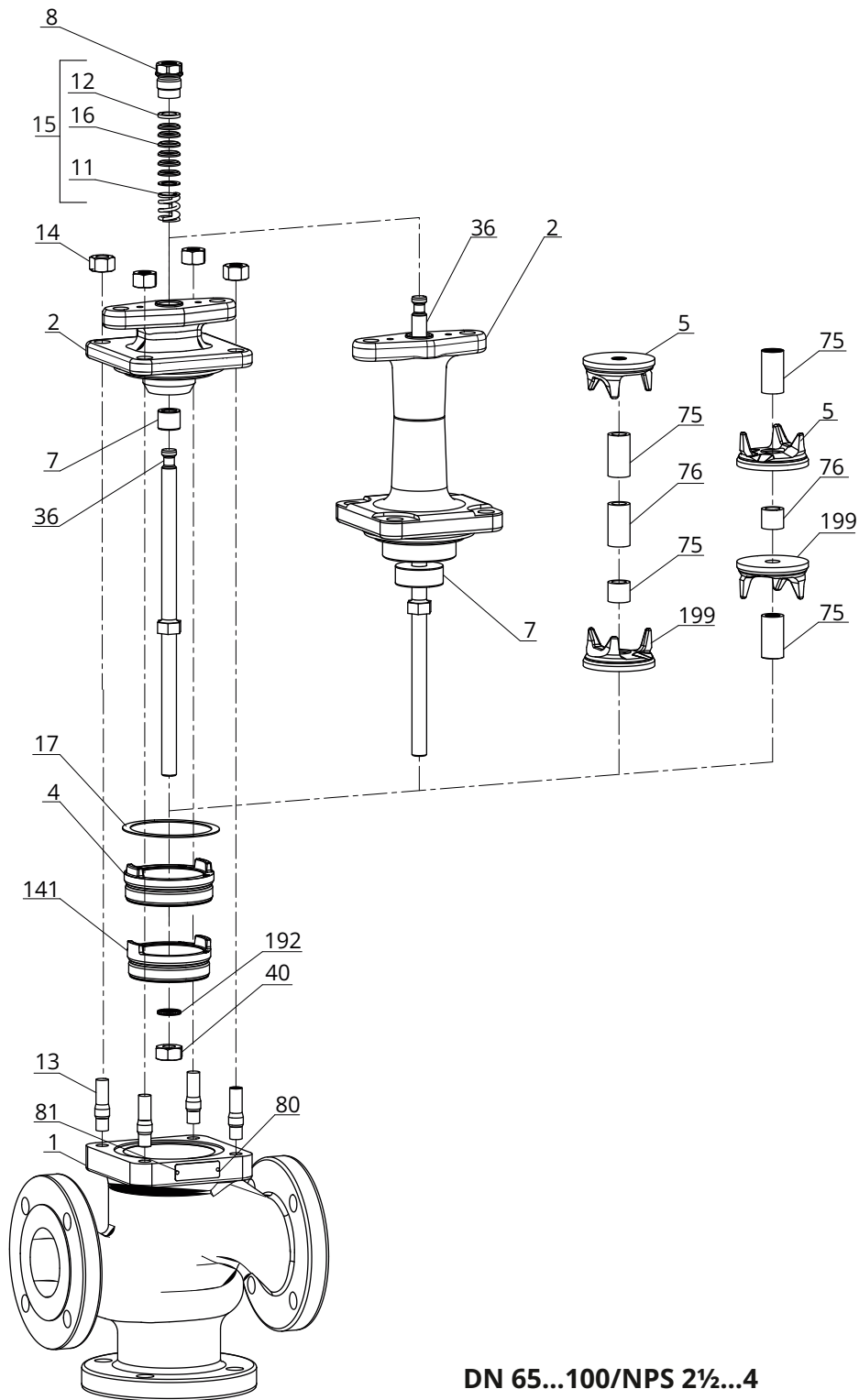
DN 15 to 50/NPS ½ to 2

2	Plug stem
7	Guide bushing
17	Plug
20	Body
22	Nameplate
27	Valve bonnet/insulating section
34	Flange
40	Spacer
41	Spacer
46	Body gasket
51	Stud
52	Body nut
121	Hex nut (self-locking)
122	Retaining washer
123	Washer
131	Threaded bushing (packing nut)
132	Washer
133	Spring
134	V-ring packing
135	Central nut
161	Top seat
162	Bottom seat

DN 65 to 100/NPS 2½ to 4

1	Body
2	Valve bonnet/insulating section
4	Top seat
5	Top plug
7	Guide bushing
8	Threaded bushing (packing nut)
11	Spring
12	Washer
13	Stud
14	Body nut
15	Packing set
16	V-ring packing
17	Body gasket
36	Plug stem
40	Hex nut (self-locking)
75	Spacer
76	Spacer
80	Nameplate
81	Grooved pin
141	Bottom seat
192	Washer
199	Bottom plug





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 contact

You can reach our after-sales service at the following e-mail address:
aftersalesservice@samsongroup.com

Addresses of SAMSON AG and its subsidiaries

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

Required specifications

Please submit the following details:

- Order number and position number in the order
- Type, model number, nominal size and valve version
- Pressure and temperature of the process medium
- Flow rate in m³/h or cu.ft/min
- Bench range of the actuator (e.g. 0.2 to 1 bar)
- Is a strainer installed?
- Installation drawing



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