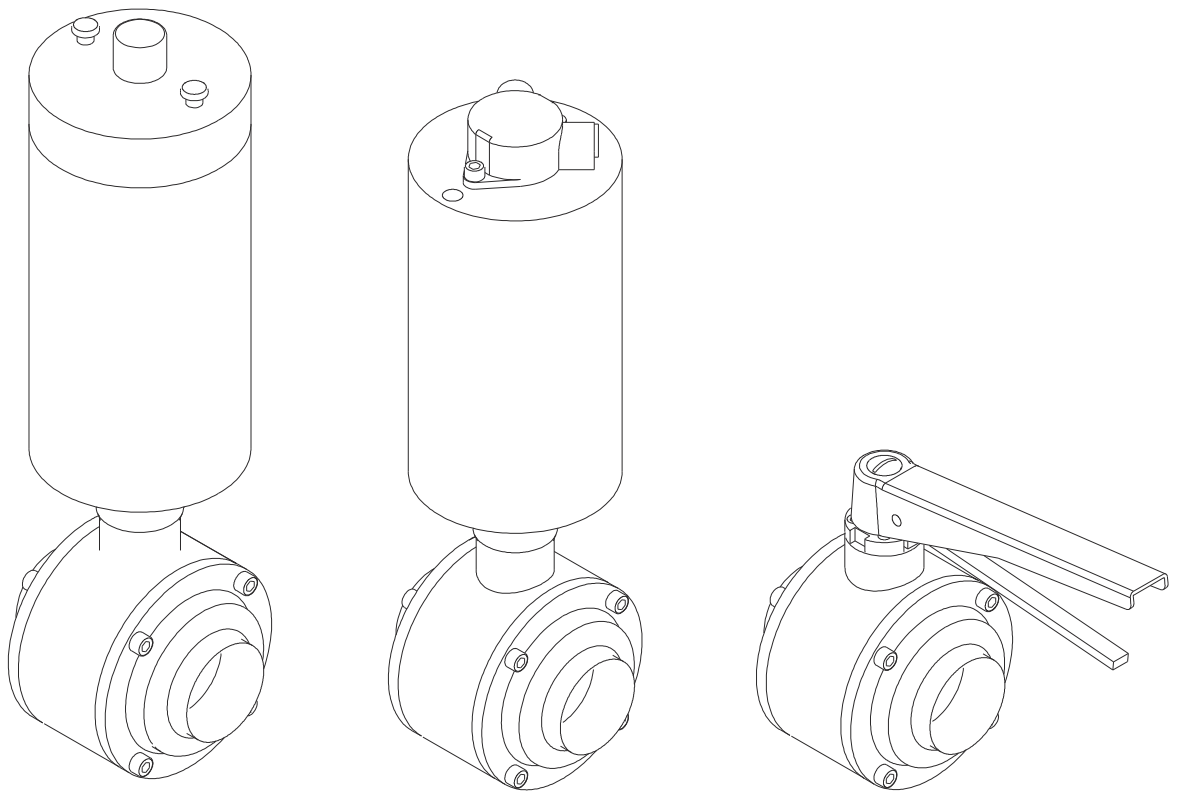


Alfa Laval SBV Sanitary Ball Valve

Ball valves



2800-0008

Lit. Code

200007940-1-EN-GB

Instruction Manual

Published by
Alfa Laval Kolding A/S
Albuen 31
DK-6000 Kolding, Denmark
+45 79 32 22 00

The original instructions are in English

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1 Declaration of Conformity

1.1 EU Declaration of Conformity

The designated company

Alfa Laval Kolding A/S, Albuen 31, DK-6000 Kolding, Denmark, +45 79 32 22 00

Company name, address and phone number

Hereby declare that

Valve

Designation

SBV

Type

is in conformity with the following directives with amendments:

- Machinery Directive 2006/42/EC
- Pressure Equipment Directive (PED) 2014/68/EU Diameters \geq DN125 may not be used for fluids group 1.

The person authorised to compile the technical file is the signer of this document.

Vice President BU Hygienic Fluid Handling
Head of Product Management

Title

Mikkel Nordkvist

Name

Kolding, Denmark

Place

2024-04-01

Date (YYYY-MM-DD)



Signature

DoC Revison_ 01_042024 / This Declaration of Conformity replaces Declaration of Conformity dated 2022-10-01



1.2 UK Declaration of Conformity

The designated company

Alfa Laval Kolding A/S, Albuen 31, DK-6000 Kolding, Denmark, +45 79 32 22 00

Company name, address and phone number

Hereby declare that

Valve

Designation

SBV

Type

is in conformity with the following directives with amendments:

- The Supply of Machinery (Safety) Regulations 2008
- The Pressure Equipment (Safety) Regulations 2016 Diameters \geq DN125 may not be used for fluids group 1.

Signed on behalf of: Alfa Laval Kolding A/S.

Vice President BU Hygienic Fluid Handling
Head of Product Management

Mikkel Nordkvist

Title

Name

Kolding, Denmark

2024-04-01



Place

Date (YYYY-MM-DD)

Signature

DoC Revison_ 02_042024



2 Safety

Read this first



This Instruction Manual is designed for operators and service engineers working with the supplied Alfa Laval product.

Operators must read and understand the **“Safety, Installation and Operating Instructions”** of the supplied Alfa Laval product before carrying out any work or before you put the supplied Alfa Laval product into service!

Not following the instructions can result in serious accidents.

This documentation describes the authorized way to use the supplied Alfa Laval product. Alfa Laval will take no responsibility for injury or damage if the equipment is used in any other way.

This Instruction Manual is designed to provide the user with the information to perform tasks safely for all phases in the lifetime of the supplied Alfa Laval product.

The operator shall always read the **“Safety”** chapter first. Hereafter the operator can skip to the relevant section for the task to be carried out or for the information needed.

Always read the **“Technical Data”** thoroughly.

This is the complete Instruction Manual for the supplied Alfa Laval product.

NOTE

The illustrations and specifications in this Instruction Manual were effective at the date of printing. However, as continuous improvements are our policy, we reserve the right to alter or modify the Instruction Manual without prior notice or any obligation.






The English version of the Instruction Manual is the original manual. Alfa Laval cannot be held responsible for incorrect translations. In case of doubt, the English version applies.




2.1 Safety Signs

Mandatory Action Signs

	General mandatory action sign.
	Refer to instruction manual.
	Use eye protection - safety glasses.
	Use protective hand wear - safety gloves.
	Wear protective equipment - safety helmet.
	Use ear protection in noisy environments - noise protector.
	Wear protective equipment - safety shoes.

Warning Signs


	General warning.
	Corrosive substance.
	Hot surface and burning danger.
	Cutting danger.
	Transportation with forklift truck or other industrial vehicles if heavy.

	<p>Danger of injury (lasermarked on the actuator).</p> <p>Do not attempt to disassemble the actuator due to spring under load danger! (The lock wire opening is blocked).</p>
	<p>Danger of injury (lasermarked on the actuator).</p> <p>Do not attempt to cut open actuator due to spring under load danger! (The lock wire opening is blocked).</p>
	<p>Danger of injury (label marked on actuator).</p> <p>Do not attempt to cut the actuator open due to spring under load (the lock wire opening is locked).</p>






2.2 Safety Precautions

All warnings in the Instruction Manual are summarised on these pages. Pay special attention to the instructions below so that severe personal injury and/or damage to the supplied Alfa Laval product is avoided.

General

	<p>To prevent unexpected start and contact with electrical live and moving parts.</p> <p>Always disconnect the power supply safely:</p> <ul style="list-style-type: none"> • The power supply disconnecting device must be disconnected (in off position) and locked.
---	---

Transportation and Lifting

    	<p>Never lift or elevate in any way other than described in this manual.</p> <p>Always use the original packaging or similar during transportation.</p> <p>Always use suitable transport device ie. forklift or pallet lifter.</p> <p>Always ensure that personnel must have experience with lifting operations.</p> <p>Always ensure that all connections are disconnected before attempting to remove the valve from the installation.</p> <p>Always ensure that no leakage of lubricants can occur.</p> <p>Always drain liquid out of the valves before transportation.</p> <p>Always ensure sufficient fixing of the valve during transportation - if specially designed packaging material is available , it must be used.</p> <p>Always ensure that compressed air is released.</p> <p>Always use predesigned lifting points if defined. Ensure that the lifting equipment is suitable for the supplied Alfa Laval product.</p> <p>Always ensure that the unit is securely fixed during transportation.</p> <p>Always ensure the lifting point to be in line with center of gravity. Adjust lifting point if necessary.</p> <p>Always use appropriate lifting equipment for heavy parts when relevant. Use lifting logs when available.</p> <p>Always keep an eye on the load and stay clear during the lifting operation.</p>
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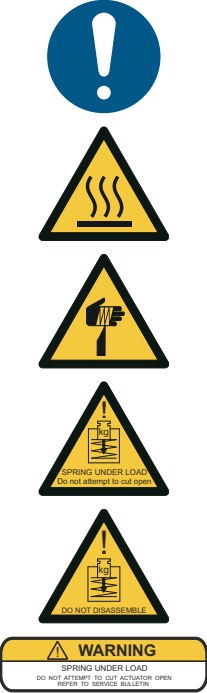
Installation

	<p>If the local safety regulations prescribe that the installation has to be inspected and approved by responsible authorities before the valve is put into service, consult with such authorities before installing the equipment and have the projected installation approved by them.</p>
	<p>Always ensure all pipe lines (product, air, and water) are depressurized and emptied before installation, inspection, assembling and disassembling.</p>
	<p>Always assemble the valve completely before start and make sure everything is in place and properly tightened.</p>
	<p>Always release compressed air after use.</p> <p>Never work on the valve or touch moving parts if the actuator is supplied with compressed air.</p>
	<p>Never dismantle or touch the valve or pipelines when processing hot liquids or when sterilising.</p> <p>Never dismantle the valve with valve and pipelines under pressure.</p>
	<p>Do NOT attempt to disassemble the actuator due to spring under load danger!</p> <p>Do NOT attempt to cut the actuator open due to spring under load.</p>


Operation

	<p>Necessary precautions must be taken if leakage occurs as this can lead to hazardous situations.</p>
	<p>Never operate the valve unless it is properly mounted or installed.</p>
	<p>Never work on the valve or touch moving parts if the actuator is supplied with compressed air.</p>
	<p>Never dismantle or touch the valve or pipelines when processing hot liquids or when sterilising.</p>
	<p>Never dismantle the valve with valve and pipelines under pressure.</p>
	<p>Always release compressed air after use.</p>
	<p>Always rinse well with clean water after cleaning.</p>
	<p>Always handle lye and acid with great care.</p>
	<p>Always follow the instructions in the safety data sheets from the suppliers of cleaning agents, detergents, oils etc.</p>


Maintenance

	<p>In order to optimise the operation of the supplied Alfa Laval product and to minimize the down time due repair activities, the maintenance should consist of:</p> <ul style="list-style-type: none"> • Inspection and maintenance of the supplied Alfa Laval product: strictly follow the technical documentation • Preventive maintenance: visual inspection of the supplied Alfa Laval product followed by necessary adjustments and planned periodic replacement of wear and tear parts • Repairs: unscheduled break-down of a component, often causing the system to stop. Damaged components shall be replaced or repaired • Stock of Alfa Laval genuine spare parts: Alfa Laval recommend keeping a stock of genuine spare parts facilitating preventive maintenance and reducing down time in case of unplanned break-downs <p>Always use Alfa Laval genuine spare parts.</p> <p>Always release compressed air after use.</p> <p>Never work on the valve or touch moving parts if the actuator is supplied with compressed air.</p> <p>Never dismantle or touch the valve or pipelines when processing hot liquids or when sterilising.</p> <p>Never service the valve with valve and pipelines under pressure.</p> <p>Never pressurize the valve/actuator when the valve is serviced unless specifically prescribed.</p> <p>Do NOT attempt to disassemble the actuator due to spring under load danger!</p> <p>Do NOT attempt to cut the actuator open due to spring under load.</p>
--	---


Storage


	<p>Alfa Laval recommend:</p> <ul style="list-style-type: none"> • Store the supplied Alfa Laval product as supplied in original packaging • Port opening(s) should be protected against any ingress • Bare steel (not stainless) should be lightly oiled/greased • Store in a clean, dry place without direct sunlight or UV light • Temperature range -5 °C to 40 °C (23 °F - 104 °F) • Relative humidity less than 60% • No exposure to corrosive substances (including contained air)
---	--


Noise

	<ul style="list-style-type: none"> • One metre away from and 1.6 metres above the exhaust, the noise level of a valve actuator will be approximately 77db (A) without noise damper and approximately 72 db (A) with damper - measured at 7 bar air-pressure
---	--




Hazards

	<p>Burn Hazard</p> <ul style="list-style-type: none"> Lubrication oil, machine parts and various machine surfaces can be hot and cause burns. Wear protective gloves
---	--

	<p>Corrosive Hazard</p> <ul style="list-style-type: none"> Always handle cleaning liquids, lye and acid with great care and in accordance with separate instructions for those fluids When using chemical cleaning agents and lubricants, make sure you follow the general rules and suppliers recommendation regarding ventilation, personnel protection etc.
---	---

	<p>Cut Hazard</p> <ul style="list-style-type: none"> Sharp edges, especially on bowl discs and threads, can cause cuts. Wear protective gloves Avoid placing hands into valve orifice pinch points
--	---

Health Hazard

	<p>Danger of injury: (an extra yellow label marked on the actuator from June 2016). Do NOT attempt to cut the actuator open due to spring under load. (The lock wire opening is locked).</p>
	<p>Danger of injury (laser marked on the actuator). Do NOT attempt to disassemble the actuator due to spring under load danger! (The lock wire opening is locked).</p>
	<p>Danger of injury (label marked on actuator). Do NOT attempt to cut the actuator open due to spring under load. (The lock wire opening is locked).</p>

Safety check



A visual inspection of any protective device (shield, guard, cover or other) on the supplied Alfa Laval product shall be carried out at least every 12 months. If the protective device is lost or damaged, especially when this leads to deterioration of safety performance, it shall be replaced. The fixing of the protective device should only be replaced with fixings of the same or an equivalent type.

Inspection acceptance criteria:

- It should not be possible to reach moving parts originally protected by a protective device
- The protective device must be securely mounted
- Ensure that screws for the protective device are securely tightened

Procedure in case of non-acceptance:

- Fix and/or replace the protective device

2.3 Warning Signs in Text

Pay attention to the safety instructions in this Instruction Manual.

Below are definitions of the four grades of warning signs used in the text where there is a risk for injury to personnel or damage to the supplied Alfa Laval product.



Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate damage to the supplied Alfa Laval product.



Indicates important information to simplify or clarify procedures.

2.4 Requirements of Personnel

Operators

The operators shall read and understand this Instruction Manual.

Maintenance personnel

The maintenance personnel shall read and understand this Instruction Manual. The maintenance personnel or technicians shall be skilled within the field required to carry out the maintenance work safely.

Trainees

Trainees can perform tasks under the supervision of an experienced employee.

People in general

The public shall not have access to the supplied Alfa Laval product.

In some cases, specially skilled personnel may need to be hired (i.e. electricians, welders). In some cases the personnel has to be certified according to local regulations with experience of similar types of work.

2.5 Recycling Information

Unpacking

Packing material may consist of wood, plastics, cardboard boxes and in some cases metal straps.



- Wood and cardboard boxes can be reused, recycled or used for energy recovery
- Plastics should be recycled or burnt at a licensed waste incineration plant
- Metal straps should be sent for material recycling



If the actuator is marked with one of the below warnings, do **NOT** attempt to disassemble it.

The spring inside is under load — any type of breakage of the actuator can lead to severe injury or even death!



Maintenance

During maintenance, oil (if used) and wear parts in the supplied Alfa Laval product should be replaced.

- Oil and all non-metal wear parts must be disposed of in accordance with local regulations
- Rubber and plastics should be burnt at a licensed waste incineration plant. If not available they should be disposed of in accordance with local regulations
- Bearings and other metal parts should be sent to a licensed handler for material recycling
- Seal rings and friction linings should be disposed of to a licensed land fill site. Check your local regulations
- All metal parts should be sent for material recycling
- Worn out or defected electronic parts should be sent to a licensed handler for material recycling

Scrapping

At end of use, the equipment must be recycled in accordance with the relevant local regulations. Besides the equipment itself, any hazardous residues from the process liquid must be considered and dealt with in a proper manner. When in doubt, or in the absence of local regulations, please contact your local Alfa Laval sales company.

How to contact Alfa Laval

Contact details for all countries are continually updated on our website.

Please visit www.alfalaval.com to access the information directly.

3 Introduction

The Alfa Laval Safety Valve is a versatile hygienic spring-loaded relief valve that prevents pressure buildup in process tanks, vessels and equipment due to blocked discharge, thermal expansion, chemical reactions, or a combination of these events.

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4 Installation

4.1 Unpacking/delivery

NOTE

This instruction manual is part of the delivery.

Study the instructions carefully.

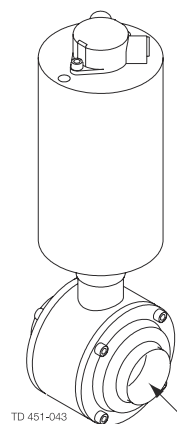
CAUTION

Alfa Laval cannot be held responsible for incorrect unpacking.

Check the delivery:

1. Complete valve.
2. Delivery note.

- 1 Clean the valve for possible packing materials.



- 2 Inspect the valve for visible transport damage.
- 3 Avoid damaging air and pipe connections.

4.2 General installation

NOTE

Always read the technical data carefully. See [Technical Data](#) on page 39

CAUTION

Alfa Laval cannot be held responsible for incorrect installation.

DANGER

Always release compressed air after use.

For further information on installation of valves, please see Guidelines for installation of valve clusters and other installations, ESE00041

1

Avoid stressing the valve as this can cause deformation of the sealing area and malfunction of the valve (leakage or faulty indication).

Pay special attention to:

- Vibrations
- Thermal expansion of the tubes
- Excessive welding
- Overloading of the pipelines

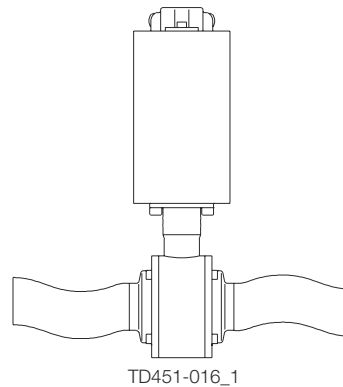
Fittings:

Ensure that the connections are tight.

Air connection of actuator:

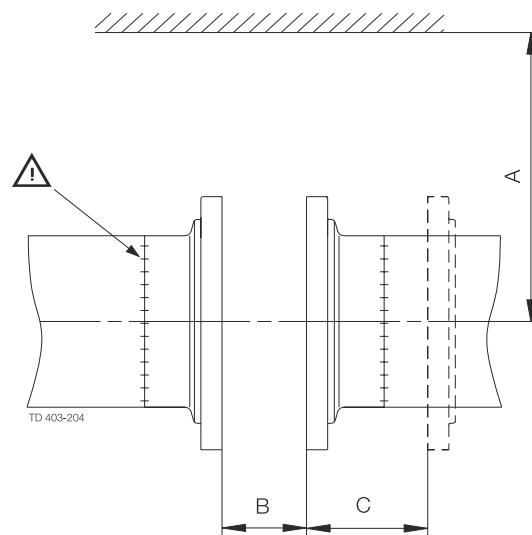
Connect compressed air correctly.

Pay special attention to warnings!



4.3 Welding

Size	A		B	C
	mm (inch)			
	Manual	Actuated	mm (inch)	mm (inch)
DN/OD 25	317	507	34	30
DN 25	(12.5)	(20.0)	(1.3)	(1.2)
DN/OD 38	325	515	40	30
DN 40	(12.8)	(20.3)	(1.6)	(1.2)
DN/OD 51	335	524	50	30
DN 50	(13.2)	(20.6)	(2.0)	(1.2)
DN/OD 63.5	345	535	56	40
DN 65	(13.6)	(21.1)	(2.2)	(1.6)
DN/OD 76.1	356	546	70	40
DN 80	(14.0)	(21.5)	(2.75)	(1.6)
DN/OD 101.6	406	595	100	40
DN 100	(16.0)	(23.4)	(3.9)	(1.6)



NOTE

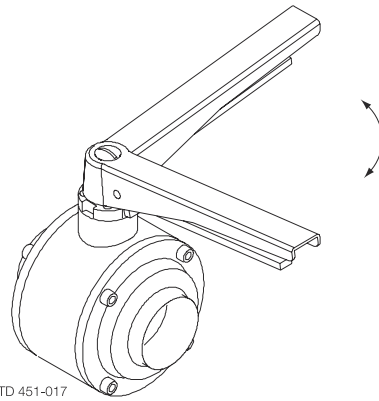
Valves with adapter and ThinkTop: add 200 mm (7.9 inch) to dimension A

- 1 Dismantle the flanges in accordance with the instructions in [Operation](#) on page 27. Remove seal rings and O-rings.
- 2 Weld the flanges into the pipe lines. Keep distance B between flanges.
- 3 If welding both flanges, ensure that the flanges can be moved axially minimum C mm to allow for valve maintenance.
- 4 Maintain the minimum clearance A so that the actuator or handle can be removed.
- 5 Assemble the valve in accordance with the instructions in [Operation](#) on page 27 after the welding.

6 Pre-use check

Open and close the valve several times to ensure that the ball moves smoothly against the seal rings.

Pay special attention to the warnings!



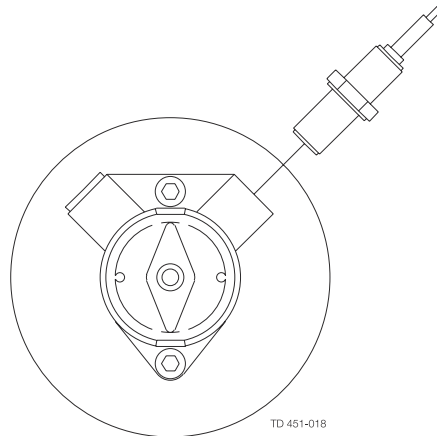
TD 451-017

4.4 Indication and control equipment (optional extras)



The indication and control equipment must be electrically installed by authorized personnel only.

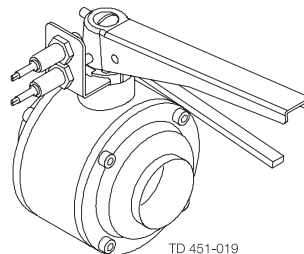
- Inductive proximity switches:
(See the instructions on the unit).
- ThinkTop®:
(See the separate instruction manual).



TD 451-018

Manual valves

Manual valves with optional handle for inductive proximity switches are designed for the mounting of one or two M12 feedback sensors for open and/or closed position detection. Feedback sensors should be installed and adjusted according to the specification on the unit.



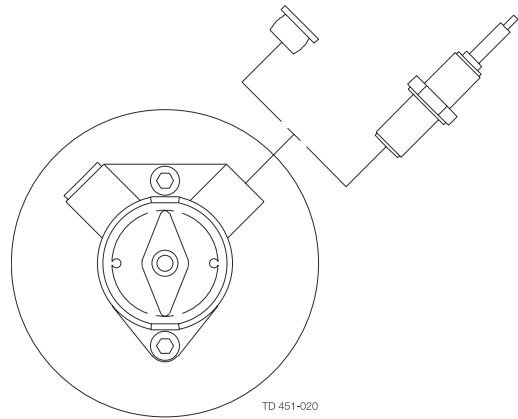
TD 451-019

Valves with standard actuator

Valves with standard actuator are prepared for the mounting of one or two M12 feedback sensors on the position indicator.

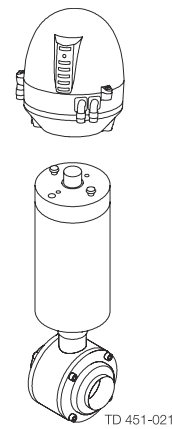
Mounting:

1. Remove the red plastic cap for the desired valve position.
2. Tighten the sensor unit gently.
3. Install the unit according to product specification.



Valves with ThinkTop® adapter

Follow the instructions in the manual.



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5 Operation

5.1 Operation

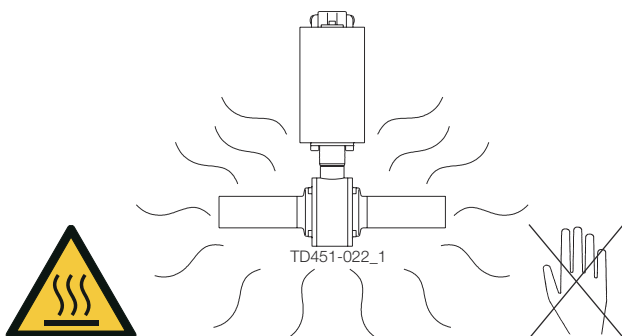
NOTE

Always read the technical data thoroughly. (see [Technical Data](#) on page 39)

CAUTION

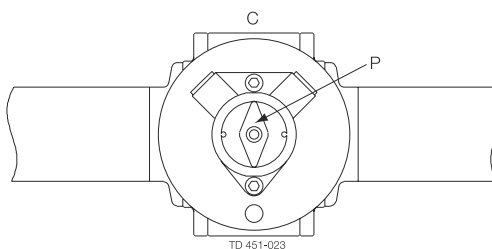
Alfa Laval cannot be held responsible for incorrect operation.

DANGER Burning danger!



Operation by means of actuator:

Automatic on/off operation by means of compressed air. The position indicator on the actuator reflects the ball bore position. In vertical position the valve is open - in horizontal position the valve is closed.

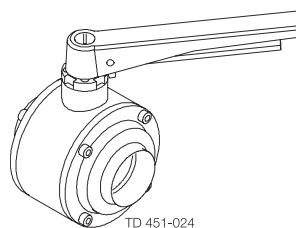


C: Closed position

P: Position indicator

Operation by means of handle:

1. Press handle arms together while rotating it. The position of the handle reflects the position of the ball bore. For correct mounting of handle, please see [Step 5](#).



5.2 Fault finding

! NOTE

Pay attention to possible break-down.

Study the instructions carefully.

NC = Normally closed.

NO = Normally open.

! NOTE

Study the maintenance instructions carefully before replacing worn parts - see [General maintenance](#) on page 31

Problem	Cause/result	Repair
Internal leakage (normal wear)	Worn valve seat Worn flange O-rings	Replace the product wetted seals
Internal leakage (too early)	Worn valve seat Worn flange O-rings Many activations High pressure and/or temperature Aggressive media	Replace the product wetted seals Consider selecting another elastomer sealing material Change operating conditions
External leakage (normal wear)	Worn flange O-rings Worn stem sealing unit	Replace all seals
External leakage (too early)	Damaged or worn flange O-rings Damaged or worn stem sealing unit Many activations High pressure and/or temperature Aggressive media	Replace all seals Select another elastomer sealing material grade Change operating conditions
Valve cannot be activated or is difficult to operate	Too low air pressure. Incorrect elastomer material (swelling)	Check and correct air pressure Select another elastomer sealing material grade
Valve is NO (normally open), should be NC (normally closed)	90° displacement of the actuator	Remove actuator, turn valve into desired pressureless position and remount actuator

5.3 Recommended Cleaning

NOTE

The supplied product is designed for cleaning in place (CIP).

NaOH = Caustic soda.

HNO₃ = Nitric acid.

The cleaning agents must be stored/disposed of in accordance with current regulations/directives.

CAUTION

Never touch the supplied product or the pipelines when sterilizing.

Always handle lye and acid with great care.

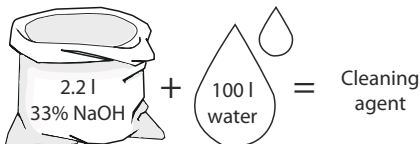
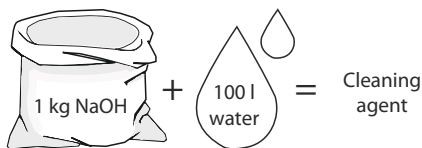


Examples of cleaning agents

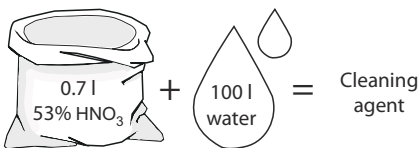
Use clean water free from chlorides

Metric System

1. 1% by weight NaOH at 70°C

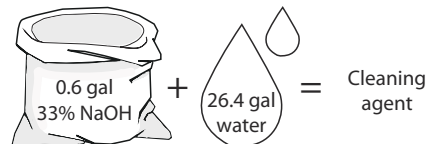
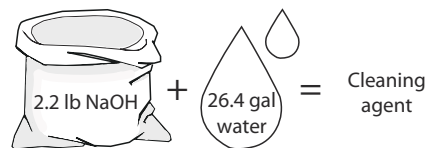


2. 0.5% by weight HNO₃ at 70°C

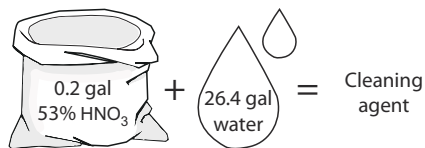


Imperial System

1. 1% by weight NaOH at 158°F



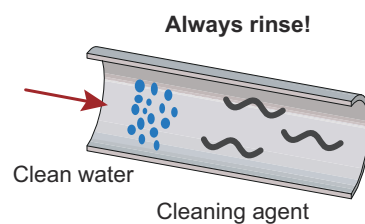
2. 0.5% by weight HNO₃ at 158°F



1. Avoid excessive concentration of the cleaning agent ⇒ **Dose gradually!**
2. Adjust the cleaning flow to the process
Milk sterilization/viscous liquids ⇒ Increase the cleaning flow!

CAUTION

Always rinse well with clean water after the cleaning.



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6 Maintenance

6.1 General maintenance

NOTE

Maintain the valve and the actuator carefully.

Study the instructions carefully and pay special attention to the warnings!

Always read the technical data thoroughly. See [Technical Data](#) on page 39

Always keep service kits in stock. **Always** use Alfa Laval genuine spare parts.

WARNING

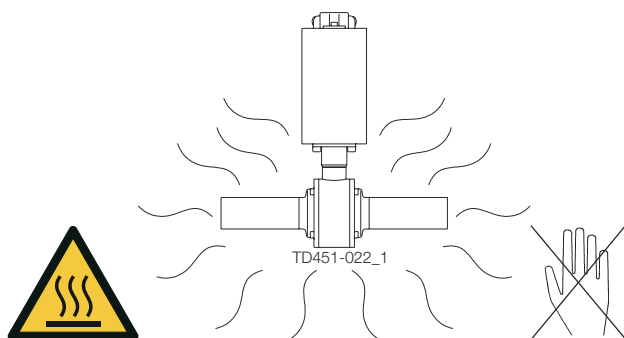
Always release compressed air after use.

DANGER Burning danger!

Atmospheric pressure required!

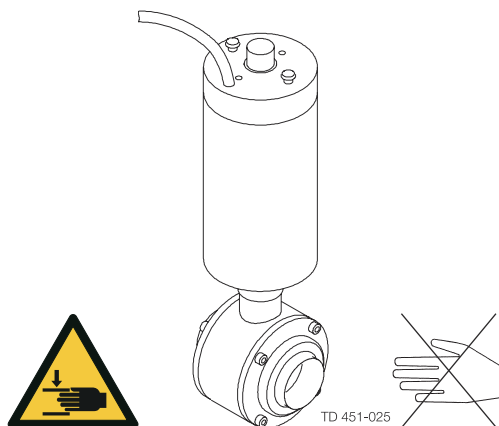
Never service the valve when it is hot.

The valve/actuator and the pipelines must **never** be pressurised when servicing the valve/actuator.



DANGER Crushing danger!

Never stick your fingers through the valve ports if the actuator is supplied with compressed air.



NOTE

All scrap must be stored/discharged in accordance with current rules/directives.

Recommended spare parts:

Service kits - see section

Order service kits from the service kits list - see section

	Product wetted seals	Valve stem seals
Preventive maintenance	Replace after 12 months	Replace all seals after 24 month
Maintenance after leakage (leakage normally starts slowly)	Replace at the end of the day	Replace by the end of the day
Planned maintenance	<ul style="list-style-type: none"> • Regular inspection for leakage and smooth operation • Keep a record of the valve • Use the statistics for planning of inspections 	<ul style="list-style-type: none"> • Regular inspection for leakage and smooth operation • Keep a record of the valve • Use the statistics for planning of inspections

 **NOTE**

The actuator is maintenance-free.

6.2 Replacement of product wetted seals

NOTE

Study the instructions carefully.

The items refer to the [Parts List and Exploded View](#) on page 45.

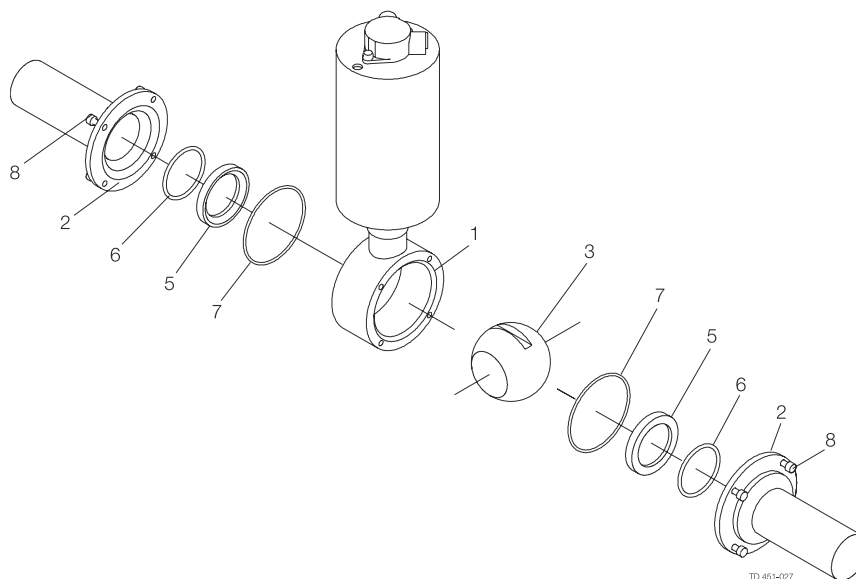
- 1
 - a) Service kit: 2 pcs. valve seat (5), 2 pcs. O-ring (6), 2. pcs. O-ring (7).
 - b) Loosen and remove flange screws (8) and remove valve from pipe line (be careful not to drop the ball if the valve is in closed position).
 - c) Remove ball (3) and check for excessive wear or damage.
 - d) Remove valve seat (5) and O-rings (6), (7) from flange (2).
- 2
 - a) Insert new O-rings (6), (7) and valve seat (5) in flange (2).

CAUTION

NC valves: Ball should be turned to "closed" position before fitting the actuator without compressed air (be careful not to drop the ball).

NO valves: Ball should be turned to "open" position before fitting actuator.

- b) Insert valve body (1) between flanges (2).
- c) Tighten screws (8) until metallic stop.



6.3 Replacement of all seals

NOTE

Study the instructions carefully.

The items refer to the *Parts List and Exploded View* on page 45.

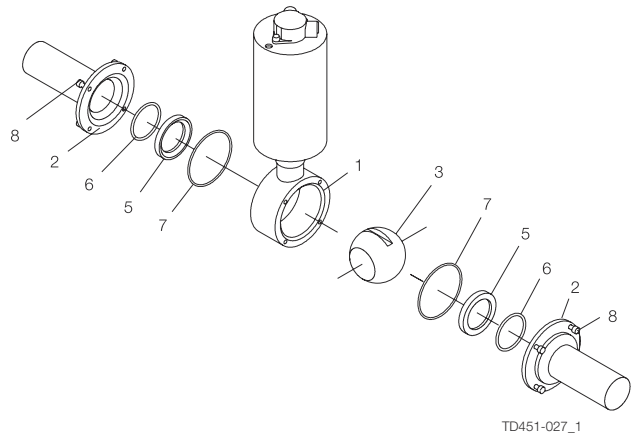
1 Disassembly of valve

Release all compressed air (actuated valves only).

2

- Loosen and remove flange screws (8) and remove valve from pipe line (be careful not to drop the ball if the valve is in closed position).
- Remove ball (3) and check for excessive wear or damage.
- Remove valve seat (5) and O-rings (6), (7) from flange (2).

Release all compressed air (actuated valves only).



TD451-027_1

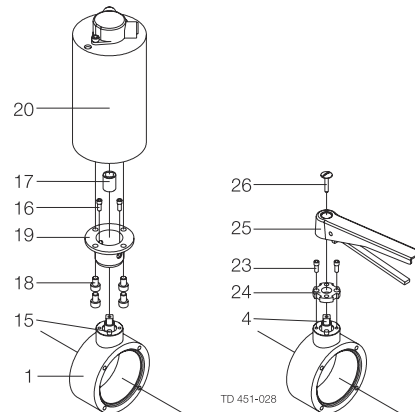
3

Actuated valves:

- Loosen screws (18) and remove actuator (20) and coupling (17).
- Loosen screws (16) and remove bonnet (19).

Manual valves:

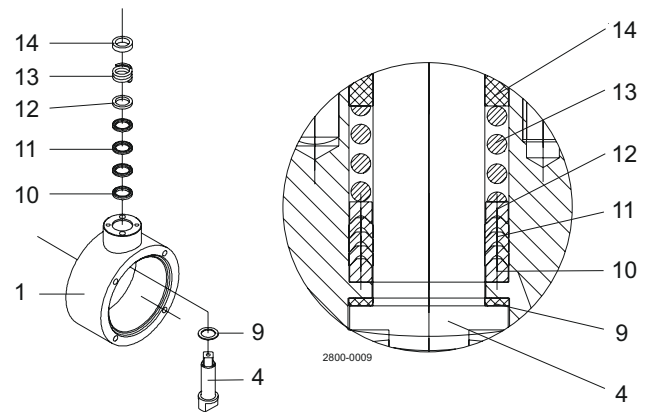
- Loosen screw (26) and remove handle (25).
- Loosen screws (23) and remove top plate (24).



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4

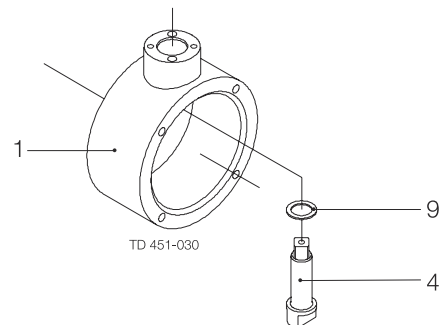
- a) Remove slide bearing (14) and spring (13).
- b) Remove stem (4) and sliding ring (9) through the valve body (1).
- c) Remove stem gasket unit (10), (11) and (12).



5

Reassembly of valve:

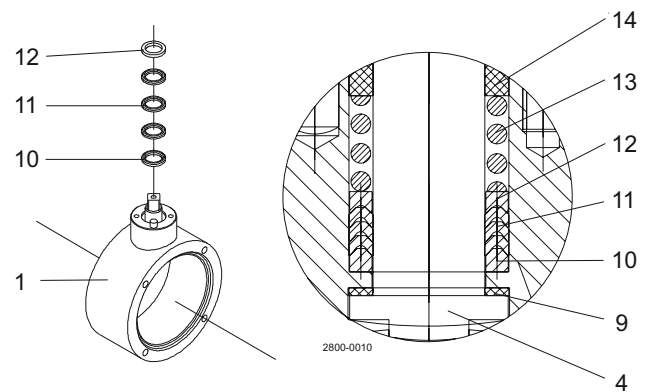
Place the new sliding ring (9) on stem (4) and mount stem unit in valve body (1).



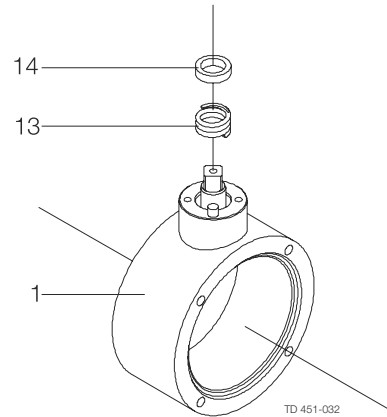
6

Insert new gasket unit (10), (11) and (12) in valve body.

Use the mounting tool and be careful not to damage the stem gaskets.

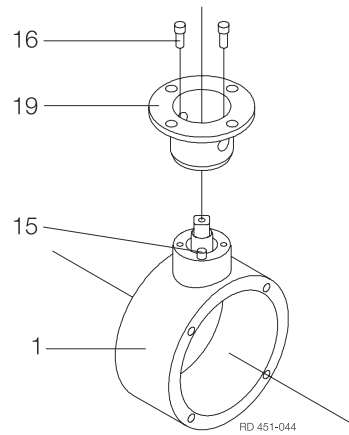


- 7 Place spring (13) and new slide bearing (14) on stem (4).



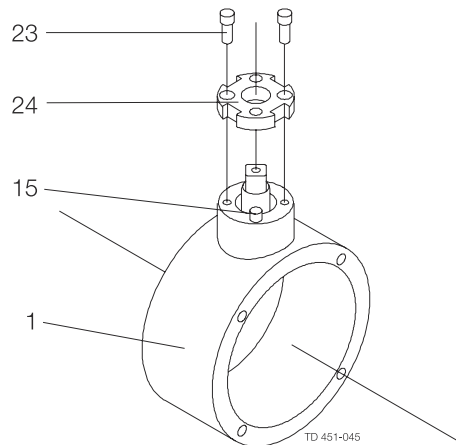
- 8 **Actuated valves:**

- a) Mount bonnet (19) on valve body (1) with screws (16).
- b) Align bonnet (19) with the two pins (15).



Manual valves:

- a) Mount top plate (24) on valve body (1) with screws (23).
- b) Align top plate (24) with the two pins (15).

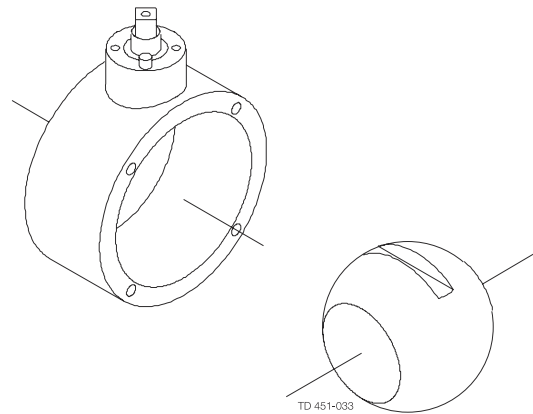


9 Fit ball

CAUTION

NC valves: Ball should be turned to “closed” position before fitting the actuator without compressed air (be careful not to drop the ball).

NO valves: Ball should be turned to “open” position before fitting actuator.



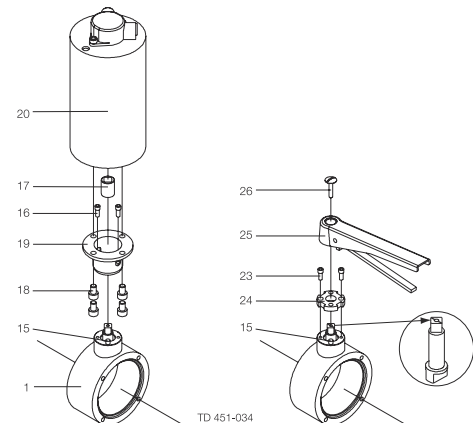
10

Actuated valves:

- Mount coupling (17) and actuator (20) on bonnet (19) with screws (18).
- Align position indicators on actuator and stem.

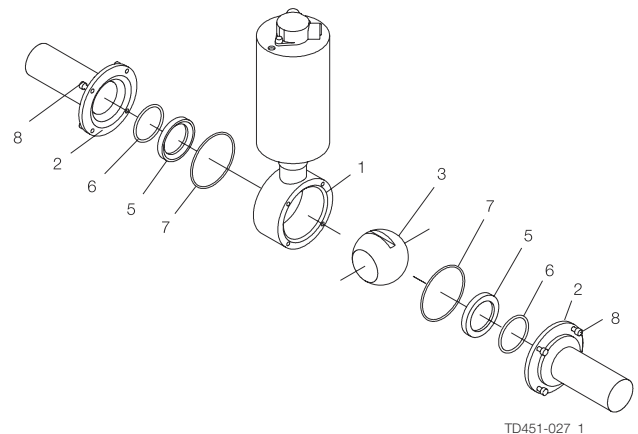
Manual valves:

- Mount handle (25) on stem (4) with screw (26).
- Align handle with position indicator on stem.



11

- Align handle with position indicator on stem.
- Insert valve body (1) between flanges (2).
- Insert valve body (1) between flanges (2).
- Open and close the valve several times to ensure proper operation.



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7 Technical Data

NOTE

Technical data must be observed during installation, operation and maintenance.
All personnel should be informed about the technical data.

7.1 Technical Data

A precision made ball with a bore is positioned inside the valve body between two flanges and two PTFE valve seats. A 90° rotation of the valve stem is transferred to the ball and thereby opening or closing the valve.

A special selected PTFE material grade secures long lifetime of the product wetted seals. Reliable valve stem sealing is achieved by the use of spring loaded and self adjusting seal rings. SBV is operated by a pneumatic actuator or manually operated by means of a handle with lockable positions. The valve is assembled with screws for easy inspection and maintenance.

Temperature range

Ambient (air):	+4 °C to +45 °C (+39 °F to +113 °F)
Operating (medium dependent):	+0 °C to +95 °C (+32 °F to +203 °F)
Sterilization (SIP 30 min):	EPDM +140 °C (+284 °F)
	PTFE +130 °C (+266 °F)
	NBR +100 °C (+212 °F)
	FPM +140 °C (+284 °F)
	Q +90 °C (+194 °F)

Pressure

Max. product pressure:	16 bar (232 PSI)
Min. product pressure:	Full vacuum

Pressure range

Working pressure:	16 bar (232 PSI)
Cleaning pressure:	3 bar (44 PSI)

ATEX

Classification:	II 2 G D ¹
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¹ This equipment is outside the scope of the directive 2014/34/EU and must not carry a separate CE marking according to the directive as the equipment has no own ignition source

Leak rate:	A (DIN EN 12266-1)
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Valve

Max. product pressure	1600 kPa (16 bar) (232 PSI)
Max. recommended pressure during activation	600 kPa (6 bar) (87 PSI)
Min. product pressure	Full vacuum
Temperature range	-10 °C to + 130 °C (14 °F to 266 °F) (EPDM).
Maximum operating temperature	95 °C (203 °F)
Max. sterilisation temperature, short time	+ 150 °C (302 °F)

Actuator

Operating pressure:	550 - 800 kPa (5,5 - 8 bar) (80-116 PSI)
Temperature range:	+0 °C to +45 °C (32 °F to +113 °F)
Air consumption \varnothing 4.09":	0.5 NI
Air consumption \varnothing 5.08":	0.75 NI

Weight (kg)

Size	Inch tubes						DIN tubes					
	DN/OD 25	DN/OD 28	DN/OD 51	DN/OD 63.5	DN/OD 76.1	DN/OD 101.6	DN 25	DN 40	DN 50	DN 65	DN 80	DN 100
Manual (kg)	2.3	3.4	4.8	7	13.5	27	2	3.1	4.5	6.4	12.3	24
Actuated (kg)	6.7	7.8	9.2	11.4	17.9	35.8	6.4	7.5	8.9	10.8	17.9	32
ThinkTop® adapter (kg)	8.6	9.7	11.1	13.3	19.8	37.7	8.3	9.4	10.8	12.7	19.8	34.7

Noise

One metre away from - and 1.6 metres above the exhaust the noise level of a valve actuator will be approximately 77 db(A) without noise damper and approximately 72 db (A) with damper - measured at 7 bars air-pressure.

7.2 Physical Data

Materials	
Product wetted steel parts:	1.4404 (AISI 316L)
Other steel parts:	1.4307 (AISI 304)
External surface finish:	Semi-bright (blasted)
Internal surface finish:	Bright (polished), Ra < 0.8 µm (32 µin)
Product wetted seals:	PTFE, EPDM
Other seals:	PTFE, NBR

NOTE

If welding both flanges, ensure that the flanges can be moved axially 30-40 mm (1.18-1.57 in) depending on size to allow for valve maintenance (see manual for further details).

Actuated valves are delivered NC (normally closed) and are easily rebuilt to NO (normally open). See manual for further details.

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8 Spare Parts

For every delivered Alfa Laval Product, a spare part list is available.

This spare part list contains a range of the most common wear parts for the machinery. If any component not mentioned is required, please contact your local Alfa Laval representative for availability.

You can find our spare part catalogue at <https://hygienicfluidhandling-catalogue.alfalaval.com>.

Always use Alfa Laval genuine spare parts. The warranty of Alfa Laval products is dependent on use of Alfa Laval genuine spare parts.

8.1 Ordering Spare Parts

When ordering spare parts, please always state:

1. Serial number (if available)
2. Item number/spare part number (if available)
3. Capacity or other relevant identification

8.2 Alfa Laval Service

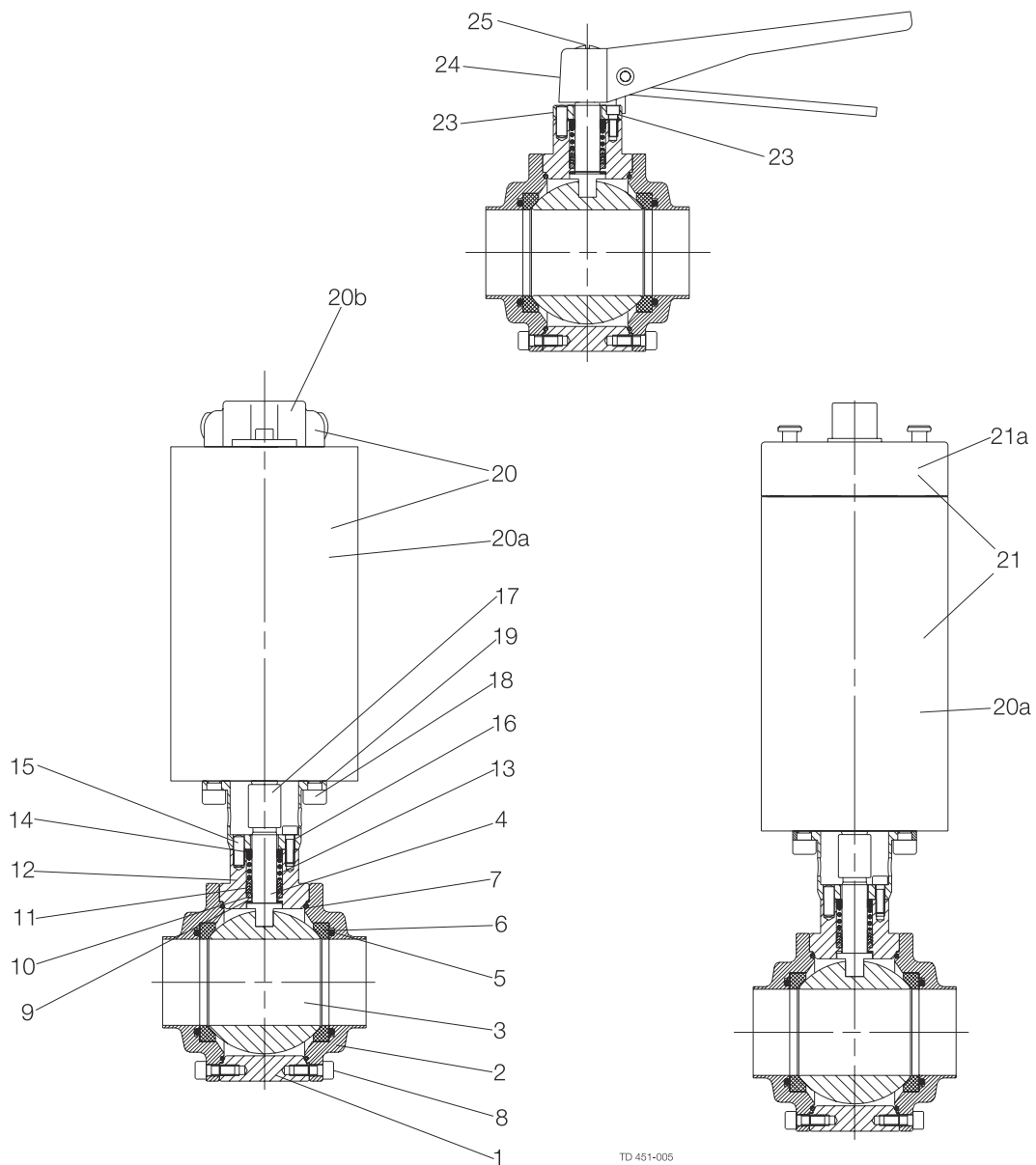
Alfa Laval is represented in all larger countries of the world.

Do not hesitate to contact your local Alfa Laval representative, with any questions or requirement of spare parts for Alfa Laval equipment.

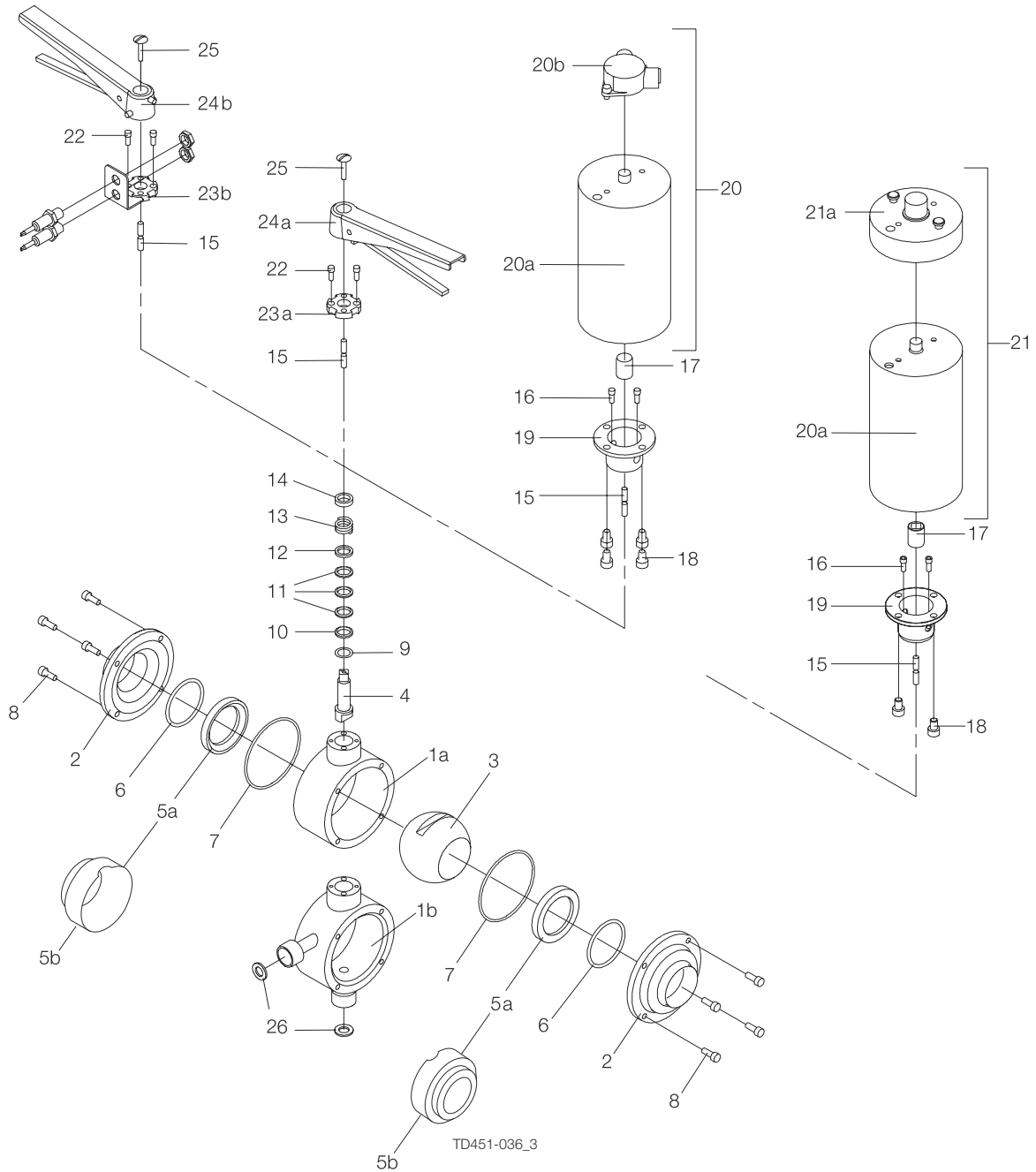
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9 Parts List and Exploded View

9.1 SBV Sanitary Ball Valve



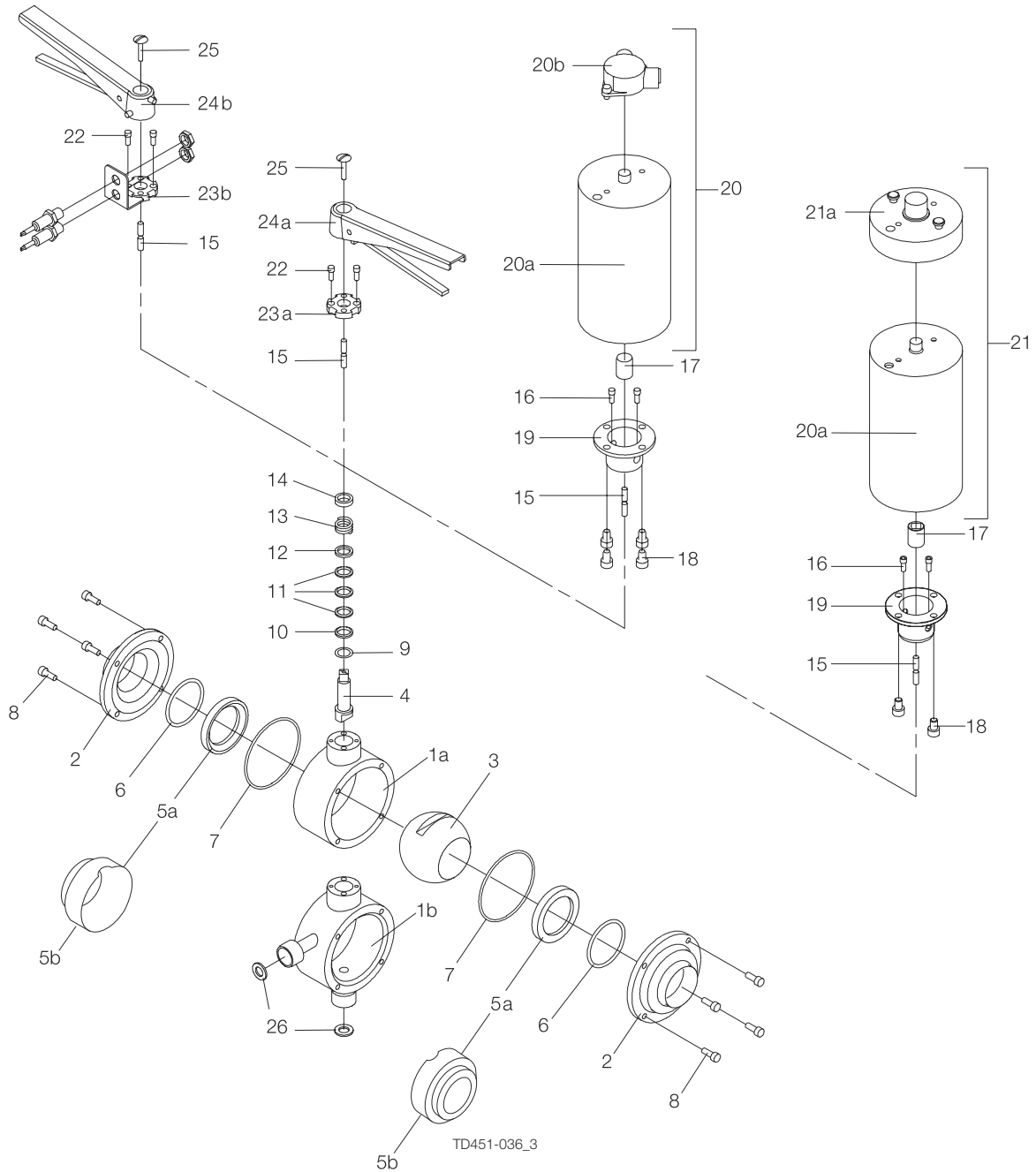
9.2 SBV Sanitary Ball Valve for Inch Tube



Pos.	Qty.	Denomination
1a	1	Valve body
2	2	Flange
3	1	Ball
4	1	Stem
5a	2	Valveseat
5b	2	Valveseat
6	2	O-ring
7	2	O-ring
8	8	Flange screw
9	1	Sliding ring
10	1	Support ring
11	3	V-rings
12	1	Pressure ring
13	1	Spring
14	1	Slide bearing
15	2	Pin

Pos.	Qty.	Denomination
16	2	Screw (act.)
17	1	Coupling
18	2	Screw
19	1	Bonnet
20	1	Actuator complete, standard version
20a		Actuator
20b	1	Position indicator complete
21		Actuator complete, ThinkTop version
21a	1	ThinkTop adapter complete
22	2	Screw (man.)
23a	1	Top plate
23b		Top plate
24a	1	Handle
24b		Handle
25	1	Screw
26	2	Seal for valves with cavity cleaning connections

9.3 SBV Sanitary Ball Valve for DIN Tube



Pos.	Qty.	Denomination
1a	1	Valve body
2	2	Flange
3	1	Ball
4	1	Stem
5a	2	Valveseat
5b	2	Valveseat
6	2	O-ring
7	2	O-ring
8	8	Flange screw
9	1	Sliding ring
10	1	Support ring
11	3	V-rings
12	1	Pressure ring
13	1	Spring
14	1	Slide bearing
15	2	Pin

Pos.	Qty.	Denomination
16	2	Screw (act.)
17	1	Coupling
18	2	Screw
19	1	Bonnet
20	1	Actuator complete, standard version
20a		Actuator
20b	1	Position indicator complete
21		Actuator complete, ThinkTop version
21a	1	ThinkTop adapter complete
22	2	Screw (man.)
23a	1	Top plate
23b		Top plate
24a	1	Handle
24b		Handle
25	1	Screw
26	2	Seal for valves with cavity cleaning connections