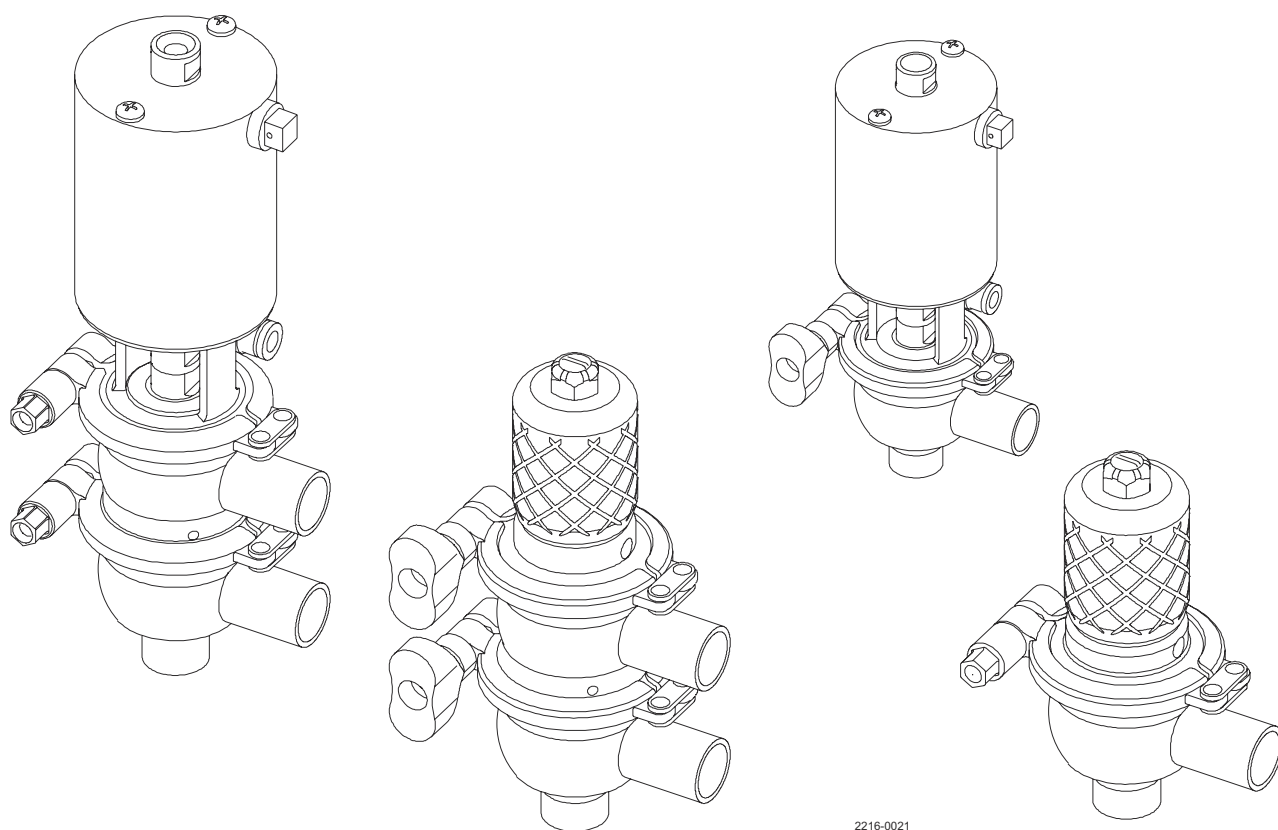


Unique Small Single Seat Valve

Single seat valves



2216-0021

Lit. Code

200008018-1-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 Declarations 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

Small Single Seat Valve

Type

is in conformity with the following directives with amendments:

- Machinery Directive 2006/42/EC
- Pressure Equipment Directive (PED) 2014/68/EU *category 1 and subjected to assessment procedure Module A.*

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

2025-11-01

Date (YYYY-MM-DD)



Signature

DoC Revison_ 01_112025 / This Declaration of Conformity replaces Declaration of Conformity dated 2024-03-19



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

Small Single Seat Valve

Type

is in conformity with the following directives with amendments:

- The Supply of Machinery (Safety) Regulations 2008
- The Pressure Equipment (Safety) Regulations 2016 *category 1 and subjected to assessment procedure Module A.*

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

Vice President BU Hygienic Fluid Handling
Head of Product Management

Title

Mikkel Nordkvist

Name

Kolding, Denmark

Place

2025-11-01

Date (YYYY-MM-DD)

Mikkel Nordkvist

Signature

DoC Revison_ 03_112025



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 chapter **Safety** 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 chapter **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.
	Transportation with forklift truck or other industrial vehicles if heavy.
	Hot surface and burning danger.
	Cutting danger.
	Corrosive substance.
	Crushing of hands.
	Danger of injury (lasermarked on the actuator). Do not attempt to disassemble the actuator due to spring under load danger! (The lock wire opening is blocked).
	Danger of injury (lasermarked on the actuator). Do not attempt to cut open actuator due to spring under load danger! (The lock wire opening is blocked).
	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).

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.



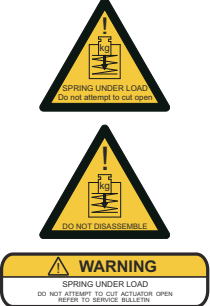
General

	<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 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 designated 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 suitable transport device ie. forklift or pallet lifter.</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>







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 release compressed air after use.</p> <p>Always assemble the valve completely before startup and make sure everything is in place and correctly tightened.</p>
	<p>Always ensure that the valve and pipelines are depressurized, emptied, and cooled down to ambient temperature before installation, inspection, assembly, or dismantling of the valve.</p> <p>Never touch the supplied product or the pipelines when processing hot liquids or sterilizing.</p>
	<p>Never work on the valve or touch moving parts if the actuator is supplied with compressed air.</p> <p>Do NOT attempt to disassemble or by other means open the actuator due to spring under load danger!</p>


Operation

	<p>Never operate the valve unless a correct installation has been verified.</p>
	<p>Never touch the valve or pipelines when hot.</p>
	<p>Always rinse well with clean water after the 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>
	<p>Never touch moving parts during operation.</p> <p>Never dismantle the valve during operation or when pressurized.</p> <p>Always release compressed air after use.</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 includes:</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 must be replaced • Stock of Alfa Laval genuine spare parts: Alfa Laval recommend keeping a stock of genuine spare parts facilitating preventive maintenance and reducing downtime in case of unplanned break downs
 	<p>Always release compressed air after use.</p> <p>Always ensure that the valve and pipelines are depressurized, emptied, and cooled down to ambient temperature before dismantling the valve.</p> <p>Never work on the valve or touch moving parts if the actuator is supplied with compressed air.</p> <p>Never service the valve when it is hot.</p>
  	<p>Do NOT attempt to disassemble or by other means open the actuator due to spring under load danger!</p> <p>Never pressurize the valve/actuator when the valve is serviced unless specifically prescribed.</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 • 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

	<p>Under certain operating conditions, the supplied Alfa Laval product and/or the systems in which they are installed can produce high sound pressure levels. Appropriate noise protection measures should be taken when necessary and in accordance with local legislation.</p>
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Hazards



Burn Hazard

- Lubrication oil, machine parts and various machine surfaces can be hot and cause burns. Wear protective gloves



Corrosive Hazard

- 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.



Cut Hazard

- Sharp edges, especially on threads, can cause cuts. Wear protective gloves



Crushing Hazard

- Avoid placing hands into valve orifice pinch points

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

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.

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3 Introduction

The Alfa Laval Unique SSSV is a versatile, reliable and small pneumatic single seat valve with a single contact surface between the plug and the seat to minimize the risk of contamination.

Its compact, modular and hygienic design meets the highest process demands in terms of hygiene and safety. Built as the well-proven Alfa Laval Unique SSV platform, it is fast-acting and handles dosing and small flow rates in hygienic applications.

Few moving parts ensure easy maintenance, high reliability, and low total cost of ownership. A wide range of optional features enables customization to specific process requirements.

3.1 General Information

The valve is remote-controlled by means of compressed air or manually operated. The small single seat valve is very reliable due to its simple design and few moving parts.

Standard Design The Small Single Seat Valve comes as a pneumatic or manual operated in either a one or two body configuration.

The plug is a PVDF plug. All components are assembled by means of clamp rings, whereas the piston and valve plug have a threaded connection.

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4 Installation

4.1 Unpacking/Delivery

NOTE

The instruction manual is part of the delivery. Study the instructions carefully.

The items refer to [Parts Lists and Exploded Views](#) on page 43.

The valve is supplied as separate parts as standard (for welding).

The valve is assembled before delivery, if it is supplied with fittings.

CAUTION

Alfa Laval cannot be held responsible for incorrect unpacking.

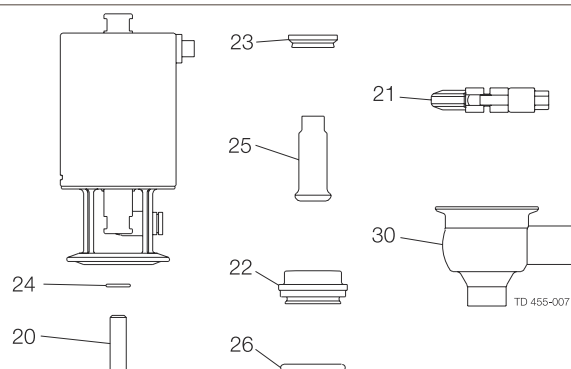
Check the delivery for:

1. Complete valve, shut-off valve, change-over valve, manual shut-off valve or manual change-over valve (see steps 2, 3, 4 and 5).
2. Delivery note.
3. Instruction Manual.

Shut-off valve

Complete actuator with bonnet.

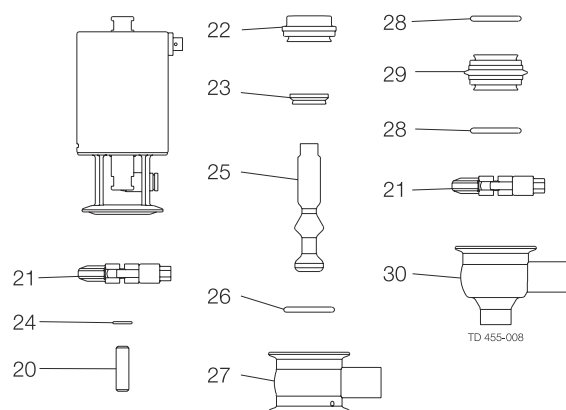
- 20. Threaded pin.
- 21. Clamp.
- 22. Sealing element.
- 23. Lip seal.
- 24. O-ring.
- 25. Shut-off plug.
- 26. O-ring.
- 30. Lower valve body.



Change-over valve

Complete actuator with bonnet

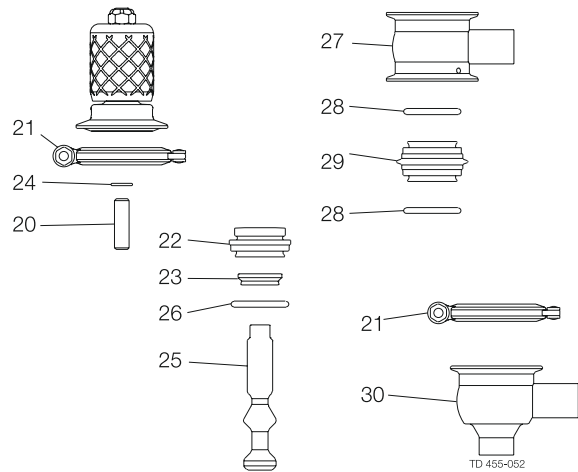
- 20. Threaded pin.
- 21. Two clamps.
- 22. Sealing element.
- 23. Lip seal.
- 24. O-ring.
- 25. Change-over plug.
- 26. O-ring.
- 27. Upper valve body.
- 28. Two O-rings.
- 29. Valve seat.
- 30. Lower valve body.



Manual change-over valve

Complete bonnet with handle, plug extension and lock hexnut

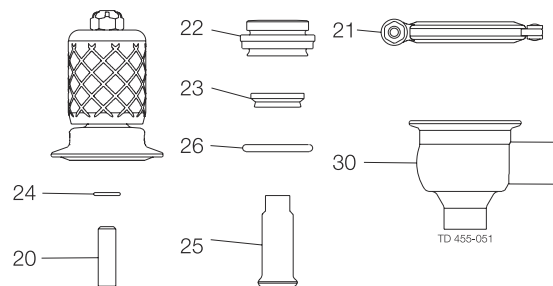
- 20. Threaded pin.
- 21. Two clamps.
- 22. Sealing element.
- 23. Lip seal.
- 24. O-ring.
- 25. Change-over plug.
- 26. O-ring.
- 27. Upper valve body.
- 28. Two O-rings.
- 29. Valve seat.
- 30. Lower valve body.



Manual Shut-off valve

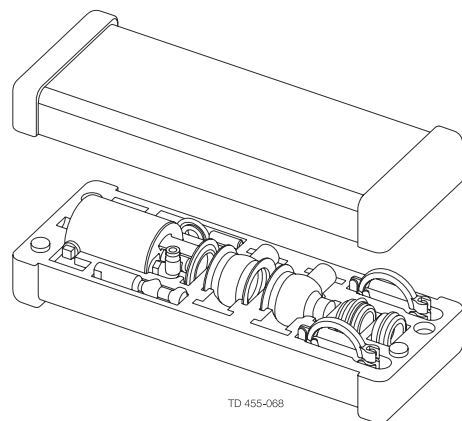
Complete bonnet with handle, plug extension and lock hexnut

- 20. Threaded pin.
- 21. Clamp.
- 22. Sealing element.
- 23. Lip seal.
- 24. O-ring.
- 25. Shut-off plug.
- 26. O-ring.
- 30. Lower valve body.



1 Remove packing materials!

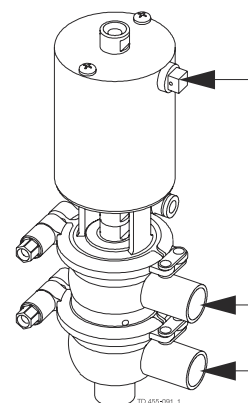
Remove any possible packing materials from the valve/valve parts.



2 Inspection!

Inspect the valve/valve parts for visible transport damages.

Avoid damaging the valve/valve parts.



4.2 General installation

NOTE

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

The valve has welding ends as standard but can also be supplied with clamp fittings.

Always read *Technical Data* on page 39 thoroughly.

WARNING

Always release compressed air after use.

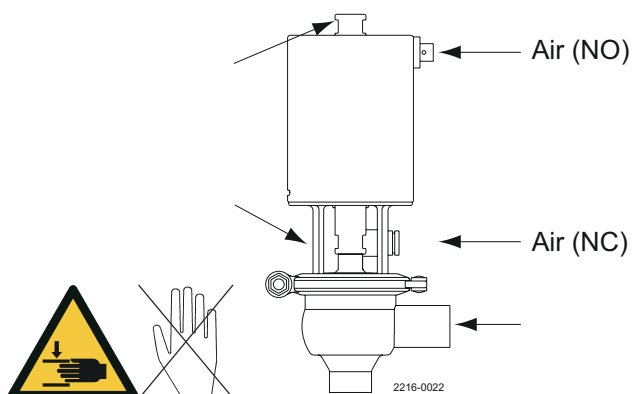
CAUTION

Alfa Laval cannot be held responsible for incorrect installation.

WARNING

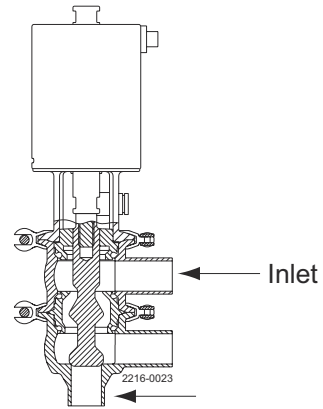
Moving parts!

Never touch the moving parts if the actuator is supplied with compressed air.



It is recommended to install the valve so that the flow is against the closing direction to avoid water hammering.

Avoid water hammering!

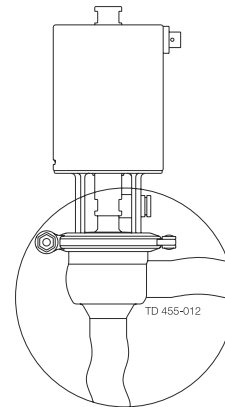


Avoid stressing the valve.

Pay special attention to

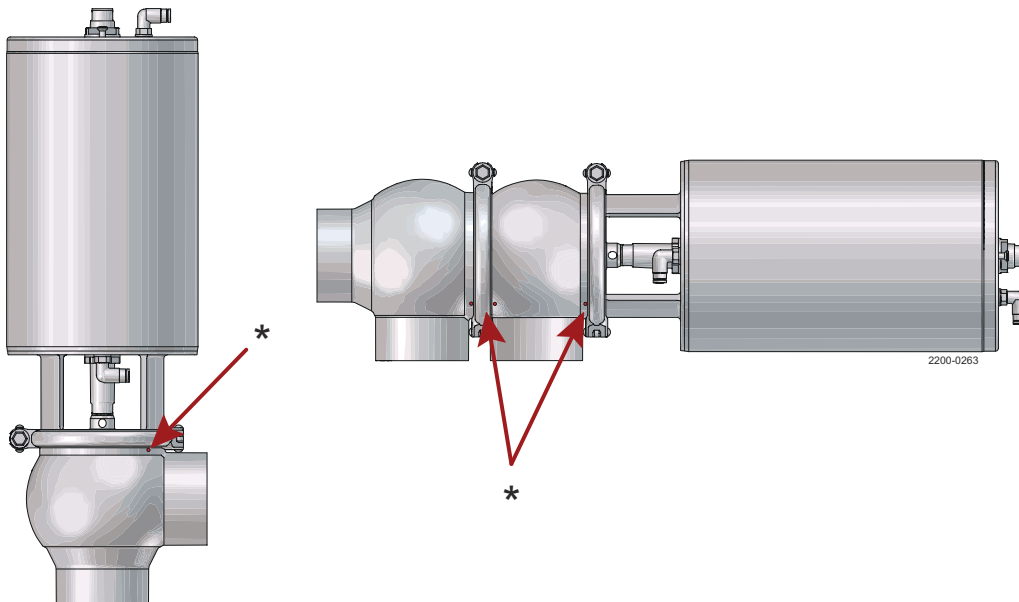
- Vibrations
- Thermal expansion of the tubes
- Excessive welding
- Overloading of the pipelines

Risk of damage!



Make sure that the leak detection hole in the valve body:

1. is visible, when mounting the valve vertically.
2. always is downwards due to self-draining, when the valve is mounted horizontally.



* = Leakage detection hole

4.3 Welding

NOTE

Study the instructions carefully.

The valve is supplied as separate parts to facilitate the welding. The items refer to the parts list and service kits section.

Check the valve for smooth operation after welding.

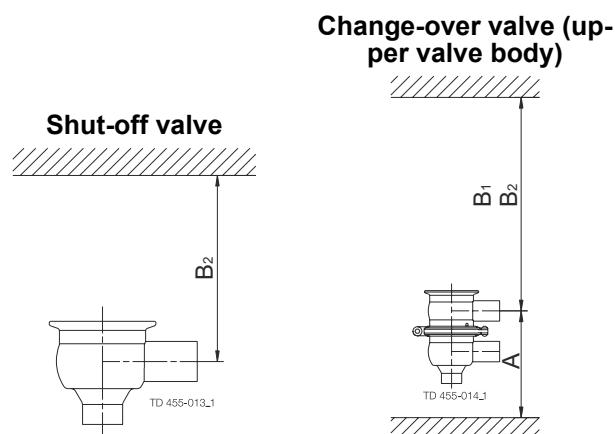
NO = Normally open.

NC = Normally closed.

Always weld the valve so that the seals between the valve bodies can be replaced.

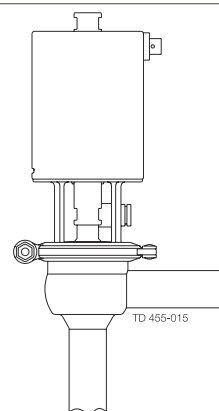
Maintain the minimum clearances (A and B) so that the lower valve body and plug (change-over valve) and the actuator with the internal parts can be removed.

Valve size DN/OD	Measurements in mm (inch)		
	A	B ₁	B ₂ (incl. top unit)
12.7 mm	160 (6.3)	175 (6.9)	245 (9.7)
19 mm	175 (6.9)	180 (7.1)	250 (9.8)



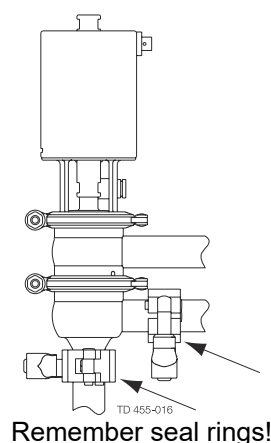
Shut-off valve/manual Shut-off valve: Assemble the valve in accordance with the steps in [Valve assembly](#) on page 34.

Pay special attention to the warnings!



Change-over valve/manual change-over valve: Assemble the valve in accordance with the steps in [Valve assembly](#) on page 34.

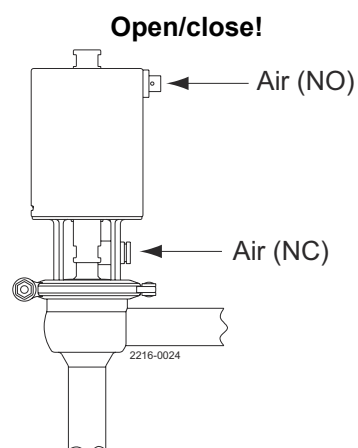
Pay special attention to the warnings!



Pre-use check

1. Supply compressed air to the actuator.
2. Open and close the valve several times to ensure that it operates smoothly.

Pay special attention to the warnings!



5 Operation

5.1 Operation

NOTE

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

Ensure that the valve operates smoothly.

The items refer to [Parts Lists and Exploded Views](#) on page 43.

NO = Normally open.

NC = Normally closed.

Always read [Technical Data](#) on page 39 thoroughly.

WARNING

Always release compressed air after use.

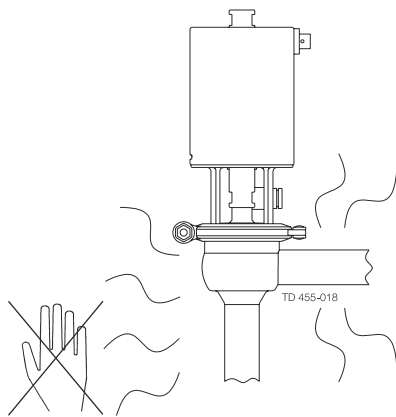
CAUTION

Alfa Laval cannot be held responsible for incorrect operation.

WARNING

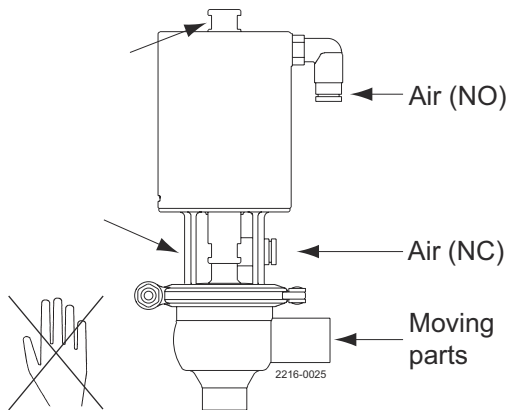
Burn hazard!

Never touch the valve or the pipelines when processing hot liquids or when sterilizing.



WARNING Moving parts

Never touch the moving parts if the actuator is supplied with compressed air.

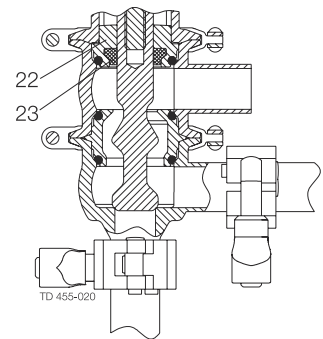
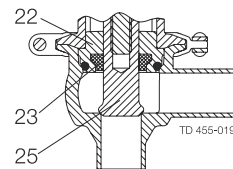


Change-over valve

Lubrication of valves

1. Ensure smooth movement between sealing element (22), lip seal (23) and plug (25).
2. Lubricate the lip seal with silicone oil/grease if necessary.

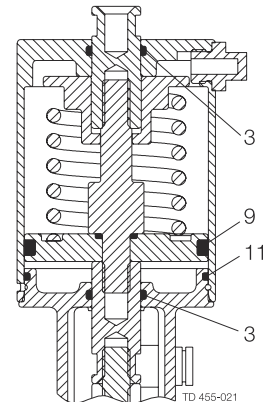
Shut-off valve



Lubricate if necessary! (see [General maintenance](#) on page 31)

Lubrication of actuator

1. Ensure smooth movement of the actuator (the actuator is lubricated before delivery).
2. Lubricate all seals with grease if necessary.



5.2 Trouble shooting

! NOTE

Pay attention to possible faults.

Study the instructions thoroughly.

The items refer to [Parts Lists and Exploded Views](#) on page 43.

Study [General maintenance](#) on page 31 thoroughly before replacing worn parts.

Problem	Cause/result	Repair
The valve plug jerks	The sealings seize	Lubricate: <ul style="list-style-type: none"> • O-rings (3) • O-ring (9) and the inside of cylinder (1) • Lip seal (23)
Product leakage at stem and/or clamp	Worn/product affected lip seal (23) and/or O-ring (26/28)	<ul style="list-style-type: none"> • Replace the seals • Replace with seals of a different rubber grade
Product leakage (closed valve)	<ul style="list-style-type: none"> • Worn/product affected • Loose plug parts (vibrations) • Product deposits on the seat and/or plug 	<ul style="list-style-type: none"> • Replace the plug • Tighten the loose parts • Frequent cleaning
Product leakage (too high pressure)	<ul style="list-style-type: none"> • Worn actuator O-rings • Too weak spring 	<ul style="list-style-type: none"> • Replace the O-rings • Fit a stronger spring
Water hammer	The flow direction is the same as the closing direction	<ul style="list-style-type: none"> • The flow direction should be against the closing direction
The valve does not open/close	<ul style="list-style-type: none"> • Faulty plug/piston rod assembly • The pressure on the plug is too high 	<ul style="list-style-type: none"> • Replace O-ring (24) between plug and piston rod • Reduce the pressure

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.

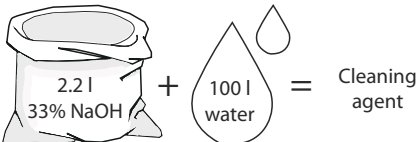
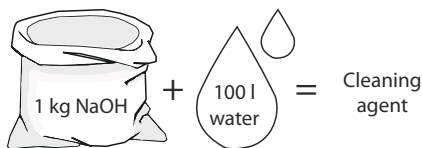


Examples of cleaning agents

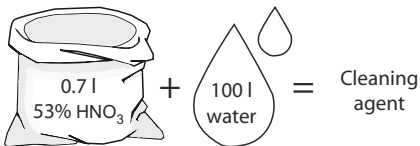
Use clean water free from chlorides

Metric System

1. 1% by weight NaOH at 70°C

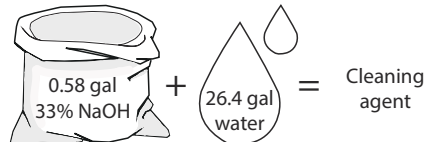
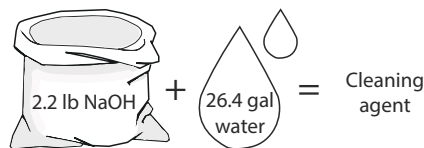


2. 0.5% by weight HNO₃ at 70°C

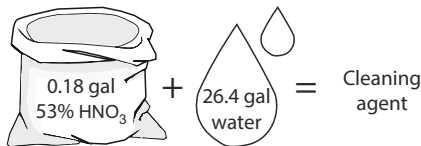


Imperial System

1. 1% by weight NaOH at 158°F



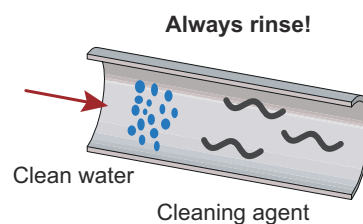
2. 0.5% by weight HNO₃ at 158°F



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.



6 Maintenance

6.1 General maintenance

NOTE

Maintain the valve regularly.

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

Always keep spare rubber seals and lip seals in stock.

Always read [Technical Data](#) on page 39 thoroughly.

NOTE

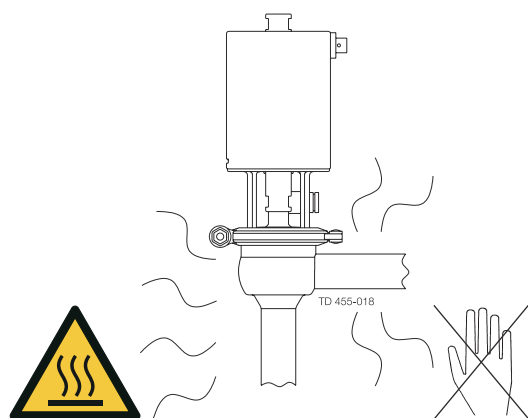
All scrap must be stored/disposed of in accordance with current rules/directives.

WARNING

Burn hazard!

Never service the valve when it is hot.

Never service the valve with valve/actuator under pressure.



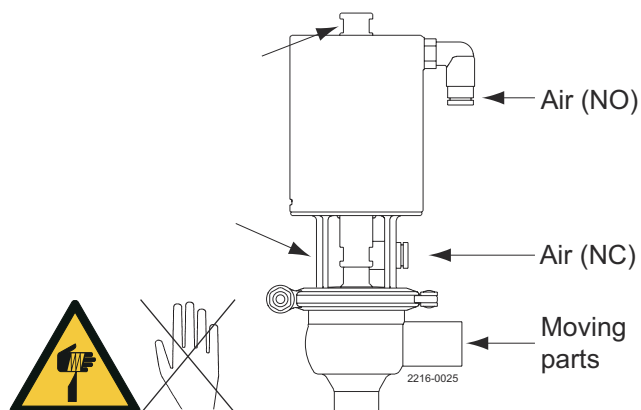
WARNING

Cutting hazard!

Never touch the moving parts if the actuator is supplied with compressed air.

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

Always release the compressed air after use.



Below are some guidelines for maintenance and lubrication intervals.

Please note that the guidelines are for normal working conditions.

	Valve rubber seals	Valve lip seal	Actuator rubber seals
Preventive maintenance	Replace after 12 months	Replace when replacing the rubber seals	Replace after 5 years
Maintenance after leakage (leakage normally starts slowly)	Replace at the end of the day	Replace when replacing the rubber seals	Replace when possible
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 Replace after leakage	Replace when replacing the rubber seals	<ul style="list-style-type: none"> Regular inspection for leakage and smooth operation Keep a record of the actuator Use the statistics for planning of inspections Replace after leakage
Lubrication (USDA H1 approved oil/grease)	Before fitting Silicone oil or silicone grease	Before fitting Silicone oil or silicone grease	Before fitting Oil or grease

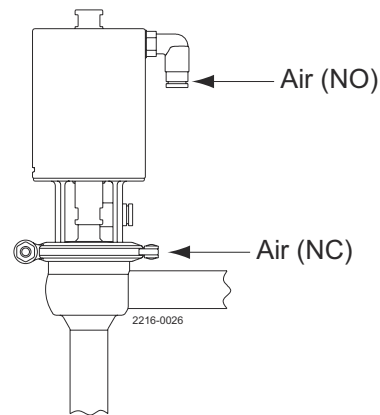
Pre-use check:

1. Supply compressed air to the actuator.
2. Open and close the valve several times to ensure that it operates smoothly.

Pay special attention to the warnings!

Recommended spare parts

See [Parts Lists and Exploded Views](#) on page 43.



6.2 Dismantling of valve

NOTE

Study the instructions thoroughly.

The items refer to *Parts Lists and Exploded Views* on page 43.

Handle scrap correctly.

NC = Normally closed.

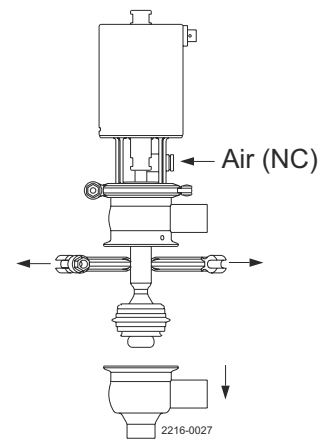
NO = Normally open.

1

1A - Change-over valve

- Supply compressed air to the actuator (only NC).
- Loosen and remove lower clamp (21).
- Remove lower valve body (30).
- Release compressed air.

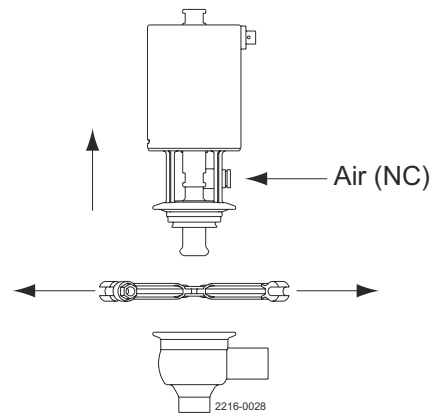
Pay special attention to the warnings!



1B - Shut-off valve

- Supply compressed air to the actuator (only NC).
- Loosen and remove clamp (21).
- Lift out the actuator.
- Release compressed air.

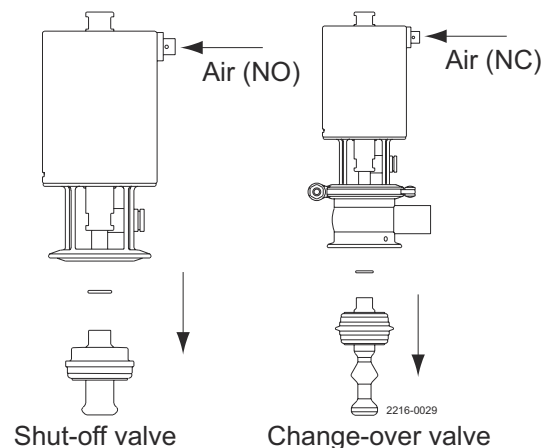
Pay special attention to the warnings!



2

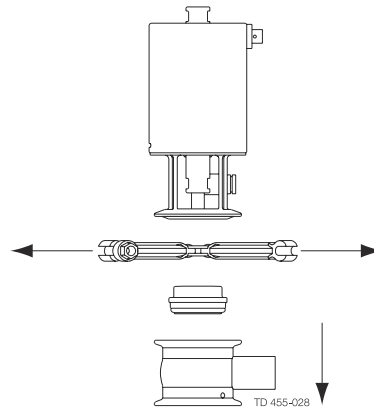
- Supply compressed air to the actuator (only NO).
- Remove plug (25) and O-ring (24). Use 11 mm spanner and counterhold on actuator shaft.
- Release compressed air.
- Remove O-rings (28) from seat (only change-over).

Pay special attention to the warnings!

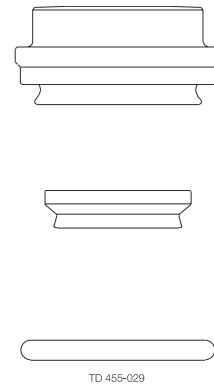


3 Change-over valve

- Remove upper clamp (21).
- Remove upper valve body (27).



4 Remove lip seal (23) and O-ring (26) from sealing element (22).



6.3 Valve assembly

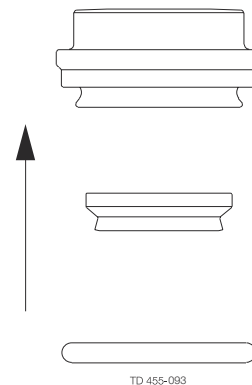
NOTE

Study the instructions thoroughly.

The items refer to [Parts Lists and Exploded Views](#) on page 43.

Lubricate the rubber seals and the lip seal before fitting them.

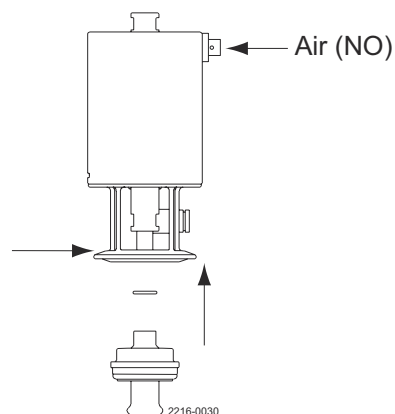
1 Fit lip seal (23) and O-ring (26) on sealing element (22).



2 Shut-off valve

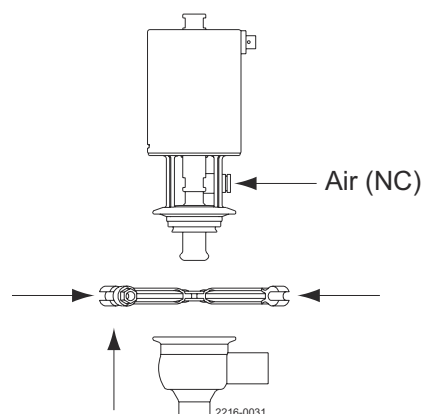
- a) Supply compressed air to the actuator (only NO).
- b) Fit threaded pin (20) using Loctite 326 or similar glue.
- c) Fit sealing element (22), plug (25) and O-ring (24).
- d) Release compressed air.

Pay special attention to the warnings!

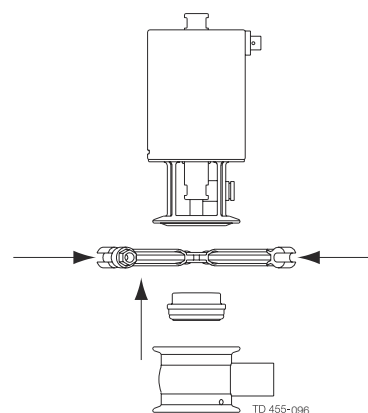
**3 Shut-off valve**

- a) Supply compressed air to the actuator (only NC).
- b) Fit the actuator.
- c) Fit and tighten clamp (21).
- d) Release compressed air.

Pay special attention to the warnings!

**4 Change-over valve**

- a) Fit threaded pin (20) using Loctite 326 or similar glue.
- b) Assemble upper valve body (27), sealing element (22) and the actuator.
- c) Fit and tighten upper clamp (21).

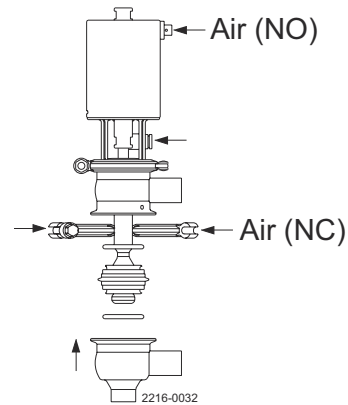


5 Change-over valve

- Supply compressed air to the actuator (only NO).
- Fit O-rings (28) on valve seat (29).
- Fit valve seat (29), O-ring (24) and plug (25). Use 11 mm spanner to counterhold actuator stem.
- Gently release compressed air (NO).
- Supply compressed air (only NC).
- Assemble lower and upper valve bodies (27 and 30).
- Fit and tighten lower clamp (21).
- Release compressed air (NC).

Pay special attention to the warnings!

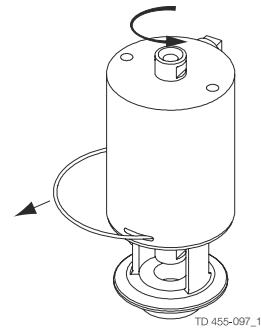
Turn the diagonal surface of valve seat (29) upwards!



6.4 Dismantling of actuator

1

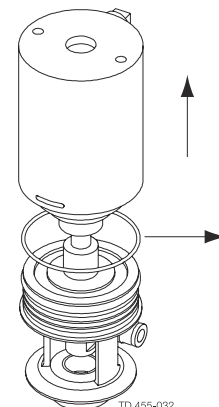
- Remove cylinder (1).
- Remove lock wire (12).



Rotate by hand or with filter strap!

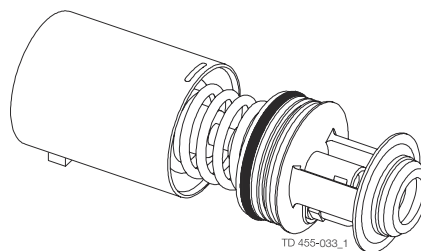
2

- Remove cylinder (1).
- Remove O-rings (3, 11) from bonnet (13) and O-ring (3) from cylinder (1).



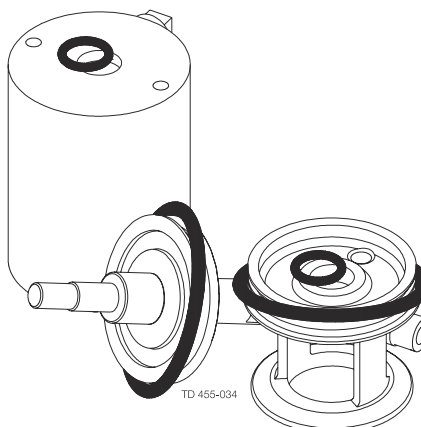
3

- a) Remove piston/spring package.
- b) Remove O-ring (9) from the piston (10).



4

Replace the rubber seals.



6.5 Assembly of actuator

NOTE

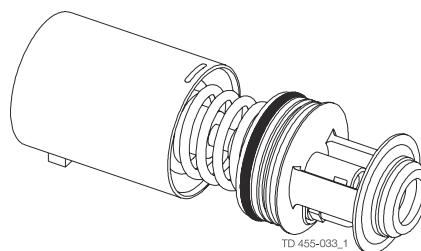
Study the instructions thoroughly.

The items refer to [Parts Lists and Exploded Views](#) on page 43.

Lubricate the rubber seals before fitting them.

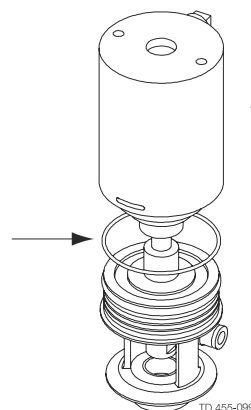
1

- a) Fit O-ring (9) on piston (10).
- b) Fit the piston/spring package.

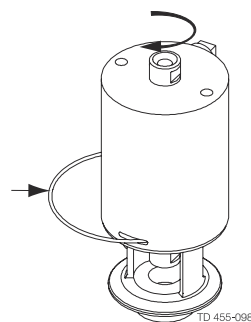


2

- a) Fit O-rings (3, 11) in bonnet (13) and O-ring (3) on cylinder (1).
- b) Fit the cylinder.

**3**

- a) Fit lock wire (12) through the slot in cylinder (1) into the hole in bonnet (13).
- b) Rotate the cylinder 360° (see step 4).

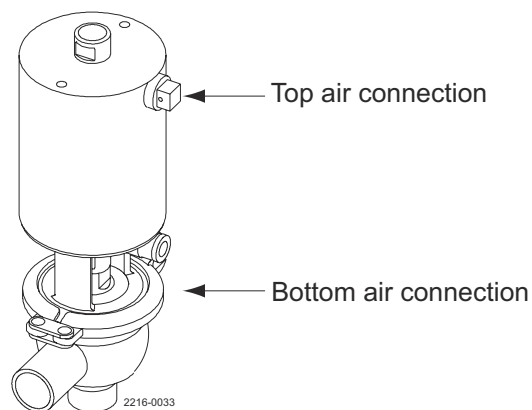


Rotate by hand or with filter strap!

4

! NOTE

It is recommended to rotate cylinder (1) further 180° in relation to bonnet (13) so that the top and bottom air connections are fixed on the same side.



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

Temperature

Temperature range: -10 °C to +140 °C (EPDM) / 14 °F to + 284 °F

Pressure

Max. product pressure: 1000 kPa (10 bar) / 145 psi
Min. product pressure: Full vacuum
Air pressure, actuator: 100 to 700 kPa (1 to 7 bar) / 14.5 to 101.5 psi

7.2 Physical Data

Materials

Product wetted steel parts: Acid-resistant steel 1.4404 (316L)
Other steel parts: Stainless steel 1.4307 (304L)
External surface finish: Semi-bright (blasted)
Internal surface finish: $Ra \leq 0.5\mu m$ ($\leq 20 \mu inch$)
Product wetted seals: EPDM
Actuator seals: Nitrile (NBR)
Other seals: HNBR and FPM
Plug: PVDF

Weight (kg)

Nominal Size	Remote-controlled		Manually operated	
	DN/OD		DN/OD	
	12.7 mm	19 mm	12.7 mm	19 mm
Weight (kg) - Shut-off valve	1.07	1.10	0.5	0.53
Weight (kg) - Change-over valve	1.36	1.41	0.8	0.85

7.2.1 Noise



One metre / 3 ft away from and 1.6 metres / 5 ft 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 bar air-pressure.

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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.

8.3 Warranty - Definition



The rules of Intended use are absolute. Use of the supplied Alfa Laval product is allowed only when in compliance with the technical data supplied with the Intended use.

Differing utilisation, other than agreed with Alfa Laval Kolding A/S, exclude any liability and warranty.

No modification or alteration of the supplied Alfa Laval product is allowed, unless explicit permission is granted by Alfa Laval Kolding A/S.



Liability and warranty are excluded:

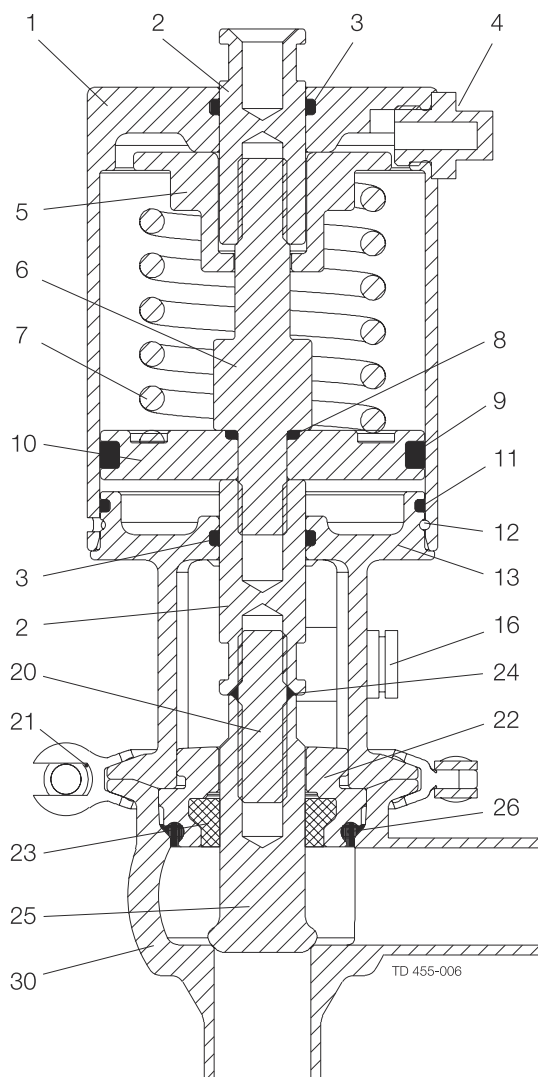
- If advice and instruction of operating instructions are ignored
- For incorrect operation or for insufficient maintenance of the supplied Alfa Laval product
- For any kind of change of function of the supplied Alfa Laval product without prior written agreement by Alfa Laval Kolding A/S
- If supplied Alfa Laval product is modified by non-authorised persons
- If using the supplied Alfa Laval product without attention of appropriate safety regulations, (see [Safety](#) on page 7)
- If protection equipment is not used and vessel process / ancillary equipment is not brought to a standstill
- If the supplied Alfa Laval product and ancillary parts are not properly maintained (to be executed in intervals and including fitting of prescribed replacement parts)

When exchanging parts, only original replacement parts, released from the manufacturer, must be used.

9 Parts Lists and Exploded Views

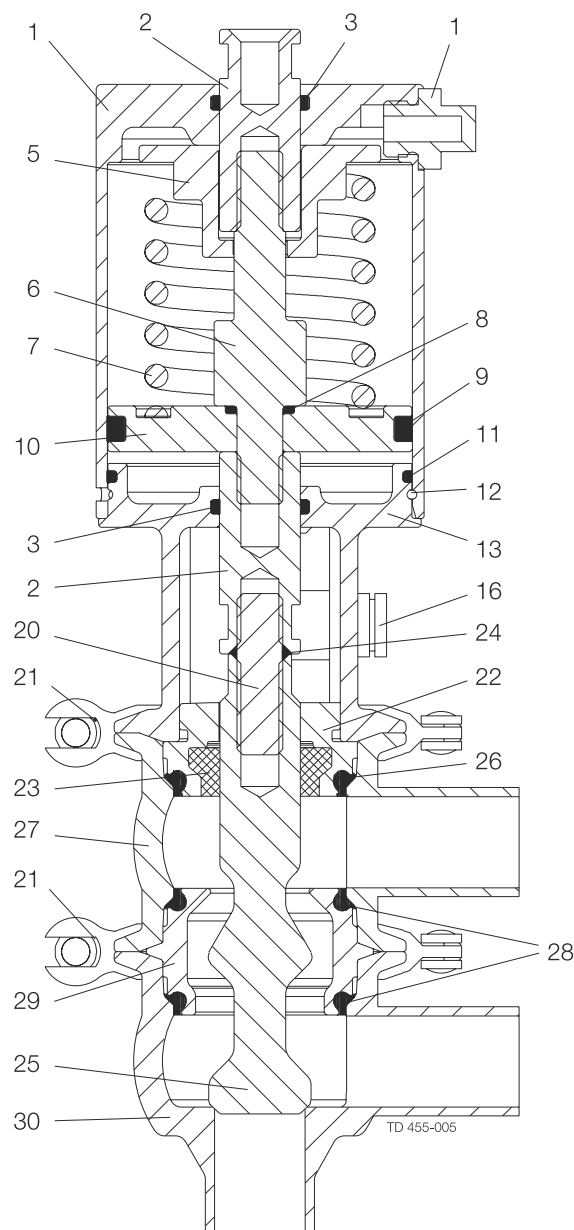
9.1 Drawings

See parts list in [Small Single Seat Valve - Shut-off Valve 12.7-19mm](#) on page 45



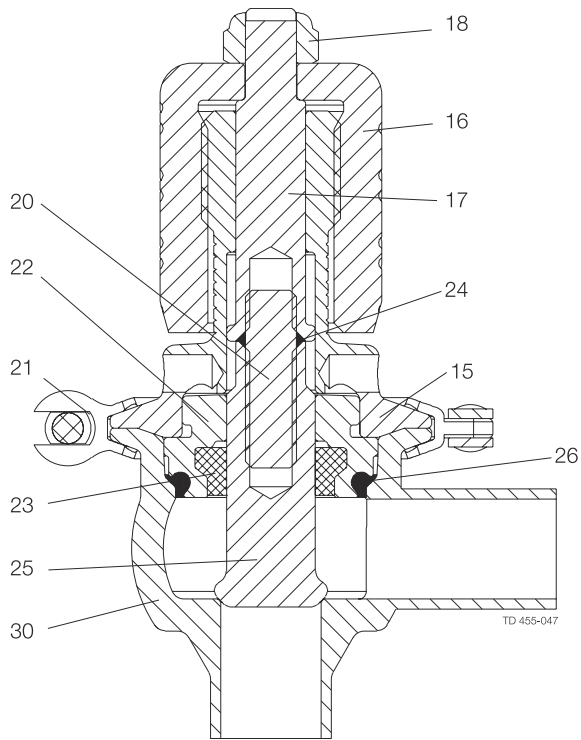
Small Single Seat Valve
Shut-off Valve DN/OD12.7-19mm

See parts list in [Small Single Seat Valve - Change-over Valve 12.7-19 mm](#) on page 46



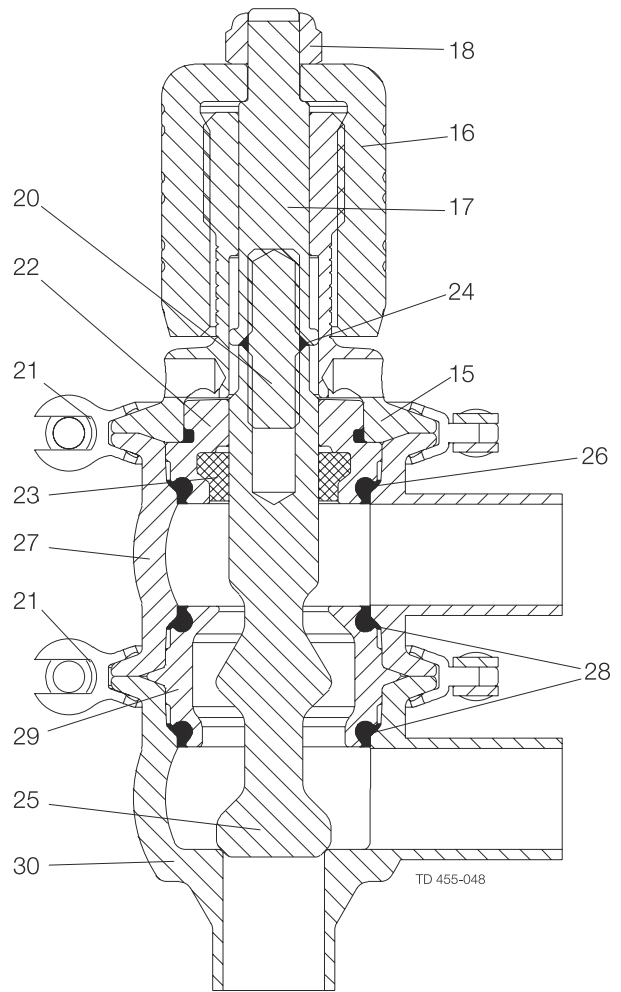
Small Single Seat Valve
Change-Over Valve DN/OD12.7-19mm

See parts list in *Small Single Seat Valve - Shut-off Valve Manual 12.7-19 mm* on page 48



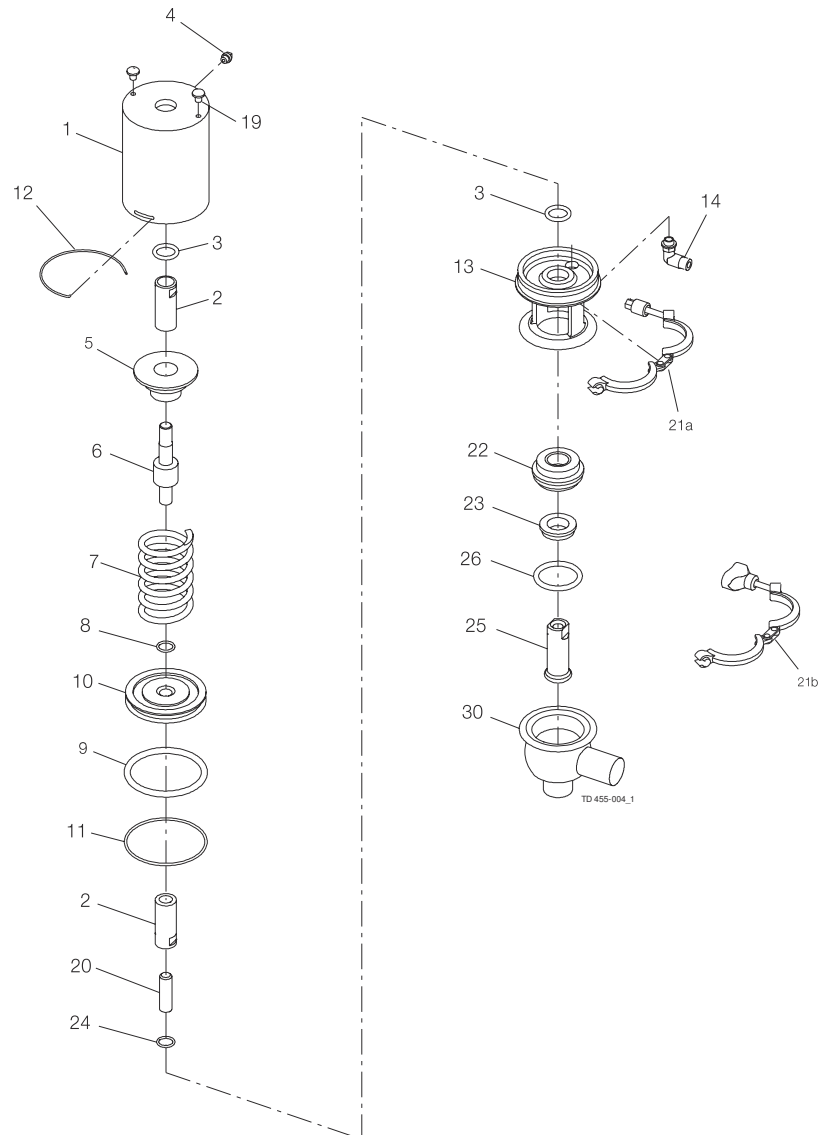
Small Single Seat Valve
Manual Shut-off Valve DN/OD12.7-19mm

See parts list in *Small Single Seat Valve - Change-over Valve Manual 12.7-19 mm* on page 49



Small Single Seat Valve
Manual Change-Over Valve DN/OD12.7-19mm

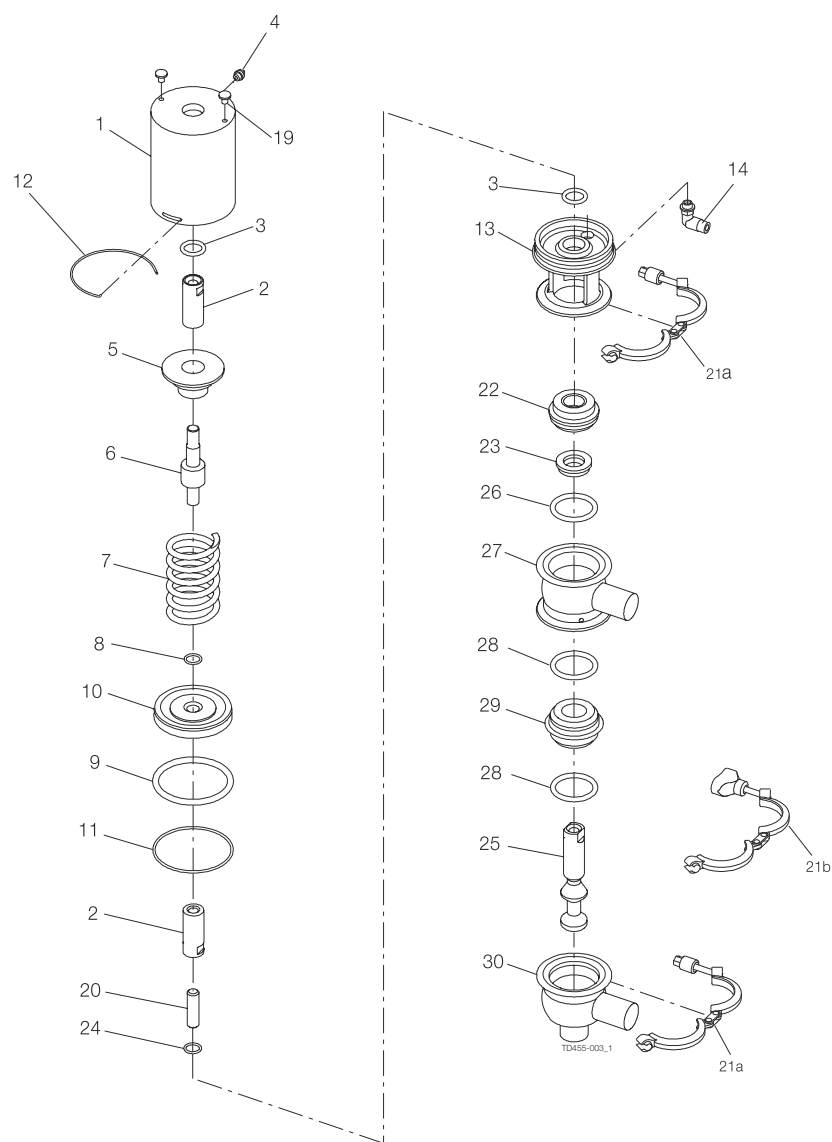
9.2 Small Single Seat Valve - Shut-off Valve 12.7-19mm



Pos.	Qty.	Denomination
1	1	Cylinder
2	2	Middle piece
3	2	O-ring
4	1	Plug
5	1	Guide pin
6	1	Piston rod
7	1	Spring
8	1	O-ring
9	1	O-ring
10	1	Piston
11	1	O-ring
12	1	Lock wire

Pos.	Qty.	Denomination
13	1	Bonnet
14	1	Air fitting
19	2	Screw
20	1	Threaded pin
21a	1	Clamp with hexnut
21b	1	Clamp with wingnut
22	1	Sealing element
23	1	Lipseal
24	1	O-ring
25	1	Stop plug
26	1	O-ring
30	1	Lower valve body

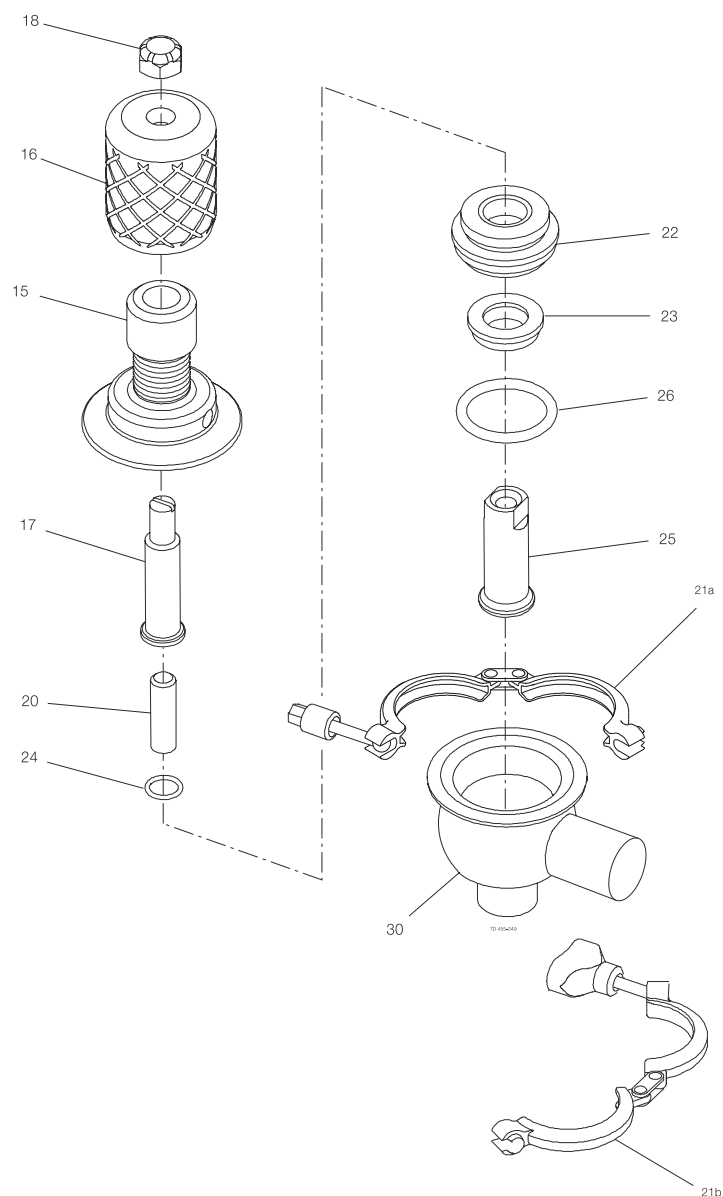
9.3 Small Single Seat Valve - Change-over Valve 12.7-19 mm



Pos.	Qty.	Denomination
1	1	Cylinder
2	2	Middle piece
3	2	O-ring
4	1	Plug
5	1	Guide pin
6	1	Piston rod
7	1	Spring
8	1	O-ring
9	1	O-ring
10	1	Piston
11	1	O-ring
12	1	Lock wire
13	1	Bonnet
14	1	Air fitting

Pos.	Qty.	Denomination
19	2	Screw
20	1	Threaded pin
21a	2	Clamp with hexnut
21b	2	Clamp with wingnut
22	1	Sealing element
23	1	Lip seal
24	1	O-ring
25	1	Change-over plug
26	1	O-ring
27	1	Upper valve body
28	2	O-ring
29	1	Valve seat
30	1	Lower valve body

9.4 Small Single Seat Valve - Shut-off Valve Manual 12.7-19 mm

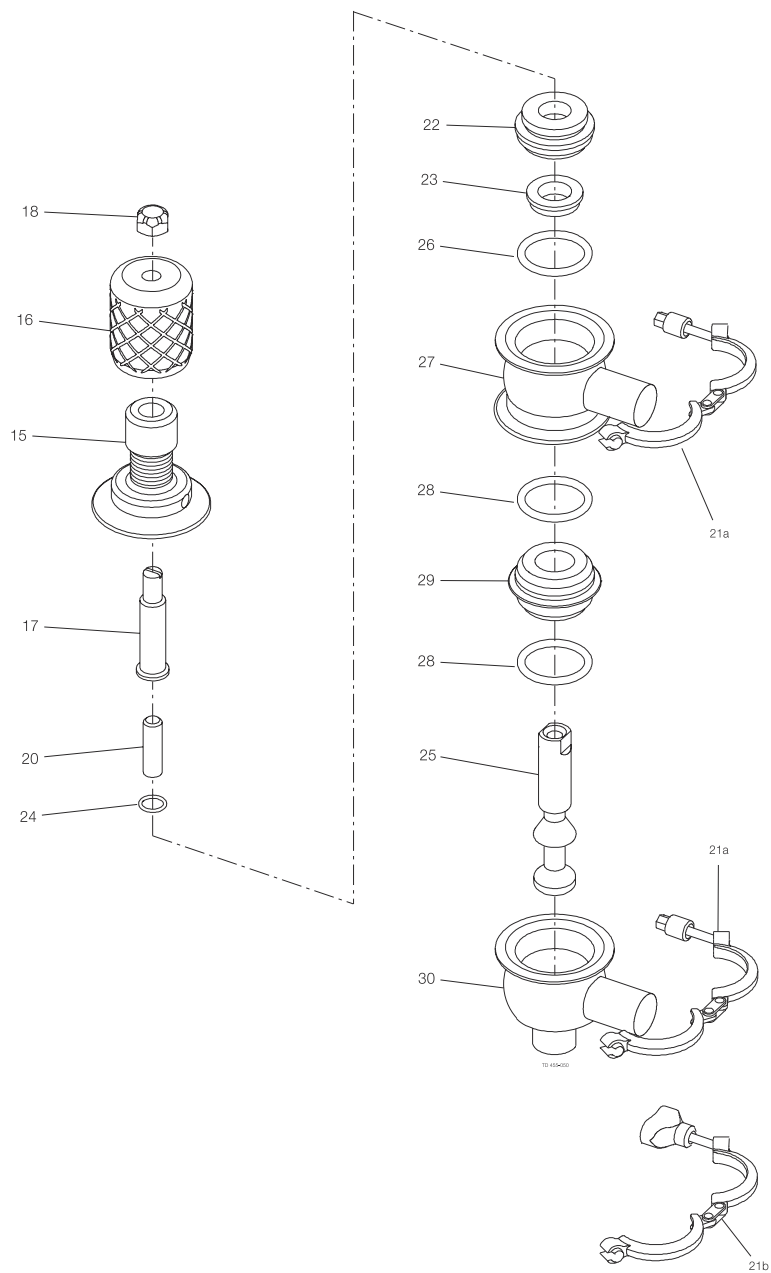


Pos.	Qty.	Denomination
15	1	Manual bonnet
16	1	Handle
17	1	Stem extension
18	1	Lock nut
20	1	Threaded pin
21a	1	Clamp with hexnut
21b	1	Clamp with wingnut

Pos.	Qty.	Denomination
22	1	Sealing element
23	1	Lip seal
24	1	O-ring
25	1	Stop plug
26	1	O-ring
30	1	Lower valve body

9.5 Small Single Seat Valve - Change-over Valve Manual

12.7-19 mm



Pos.	Qty.	Denomination
15	1	Manual bonnet
16	1	Handle
17	1	Stem extension
18	1	Lock nut
20	1	Threaded pin
21a	2	Clamp with hexnut
21b	2	Clamp with wingnut
22	1	Sealing element

Pos.	Qty.	Denomination
23	1	Lipseal
24	1	O-ring
25	1	Change-over plug
26	1	O-ring
27	1	Upper valve body
18	2	O-ring
29	1	Valve seat
30	1	Lower valve body