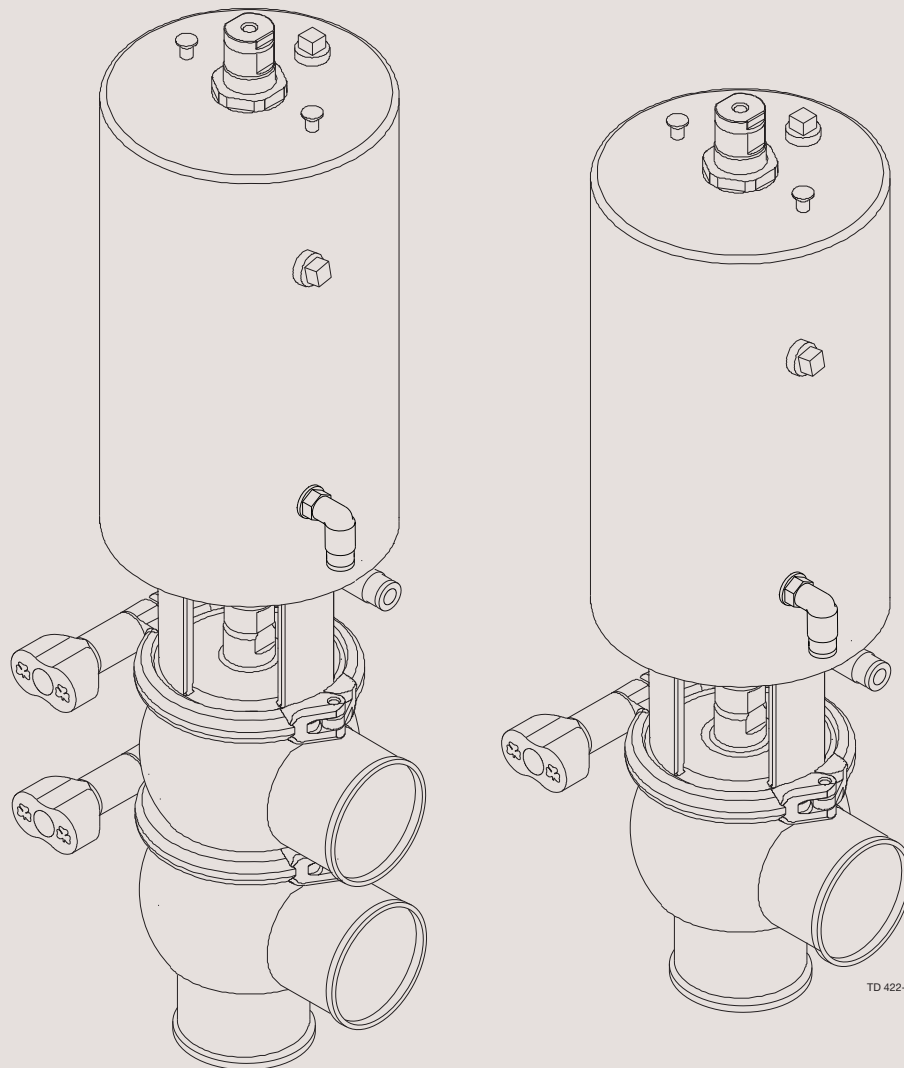




Instruction Manual

Unique 7000 Series - Two Step



ESE02027-ENUS2 2014-12

Original manual

The information herein is correct at the time of issue but may be subject to change without prior notice

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1 EC Declaration of Conformity

Revision of Declaration of Conformity 2009-12-29

The Designated Company

Alfa Laval Kolding A/S

Company Name

Albuen 31, DK-6000 Kolding, Denmark

Address

+45 79 32 22 00

Phone No.

hereby declare that

Valve

Designation

Unique 7000 PN10

Type

From serial number 5099880 to 29999999999

is in conformity with the following directive with amendments:

- Machinery Directive 2006/42/EC
- Regulation (EC) No 1935/2004
- Pressure Equipment Directive 97/23/EC category 1 and subjected to assessment procedure Module A.

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

QHSE Manager, Quality, Health and safety & Environment

Title

Annie Dahl

Name

Kolding

Place

2013-12-03

Date

Annie Dahl

Signature



*Unsafe practices and other important information are emphasized in this manual.
Warnings are emphasized by means of special signs.*

2.1 Important information

Always read the manual before using the valve!

WARNING

Indicates that special procedures must be followed to avoid serious personal injury.

CAUTION

Indicates that special procedures must be followed to avoid damage to the valve.

NOTE

Indicates important information to simplify or clarify procedures.

2.2 Warning signs

General warning:



Caustic agents:



2 Safety

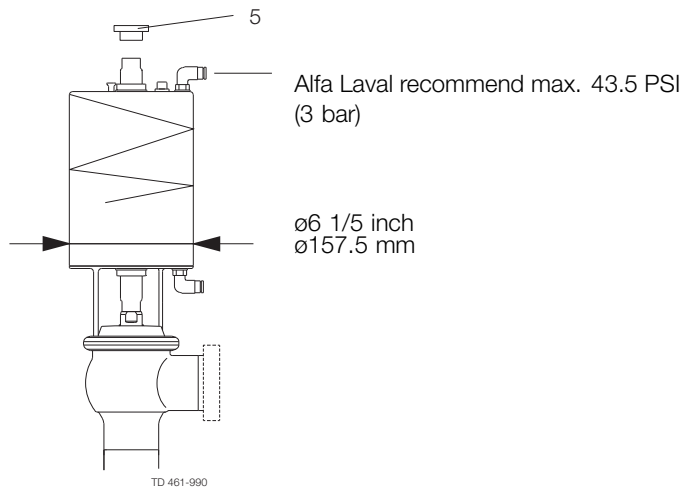
All warnings in the manual are summarized on this page.

Pay special attention to the instructions below so that severe personal injury and/or damage to the valve are avoided.

2.3 Safety precautions

Actuators marked with year 2012 (New actuator design):

Alfa Laval recommend only to use 43.5 PSI (3 bar) support air on the spring side in all the Unique 7000 actuators, to ensure 145 PSI (10 bar) product pressure without leakage. Plastic adapter (Pos. 5) is always used on the new design.



Actuators marked with year 2006-2011 (old actuator design):

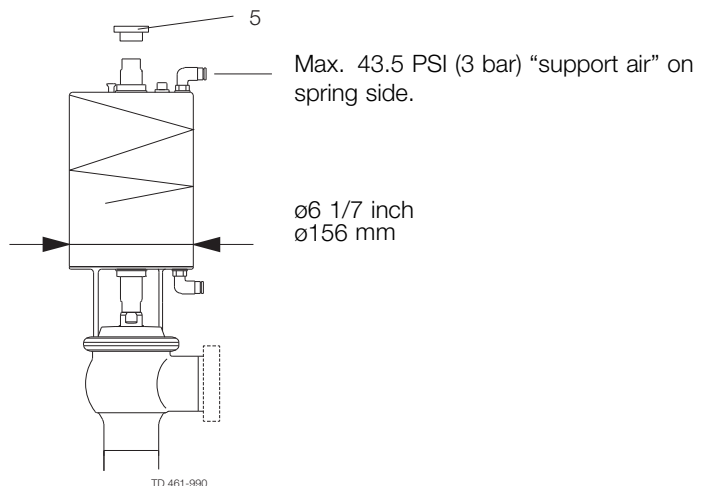


WARNING!

When using “support air” on spring side in all the Unique 7000 actuators, the pressure must **NOT** exceed 43.5 PSI (3 bar).

When using Unique 7000 actuators with OD156 mm with support air, **always** use the “steel adapter” (pos. 5). Tighten the “steel adapter” with torque of 21 lbf-ft (30 Nm) and use Loctite 243.

The actuator with OD156 mm is mainly used on valves ISO76/DN80 – ISO101/DN100. The outer actuator diameter = ø6 1/7 inch (156 mm).



All warnings in the manual are summarized on this page.

Pay special attention to the instructions below so that severe personal injury and/or damage to the valve are avoided.

Installation:

Always read the technical data thoroughly (See chapter)

Always release compressed air after use

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

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

Never dismantle the valve with valve and pipelines under pressure

Never dismantle the valve when it is hot



Operation:

Never dismantle the valve with valve and pipelines under pressure

Never dismantle the valve when it is hot

Always read the technical data thoroughly (See chapter)

Always release compressed air after use

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

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

Always rinse well with clean water after the cleaning

Always handle lye and acid with great care



Maintenance:

Always read the technical data thoroughly (See chapter)

Always release compressed air after use

Never service the valve when it is hot

Never service the valve with valve and pipelines under pressure

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

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



3 Installation

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

The items refer to parts list and service kits section.

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

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

3.1 Unpacking/delivery

Step 1

CAUTION

Alfa Laval cannot be held responsible for incorrect unpacking.

Check the delivery for:

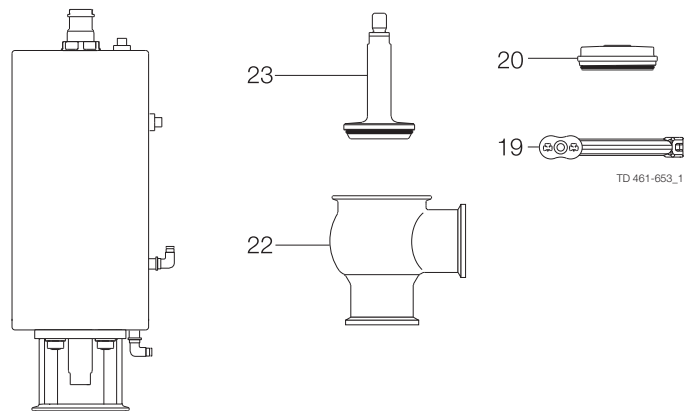
1. Complete valve, shut off valve or change-over valve (see steps 2a and 2b).
2. Delivery note.
3. Instruction manual.

Step 2

2a

Shut-off valve:

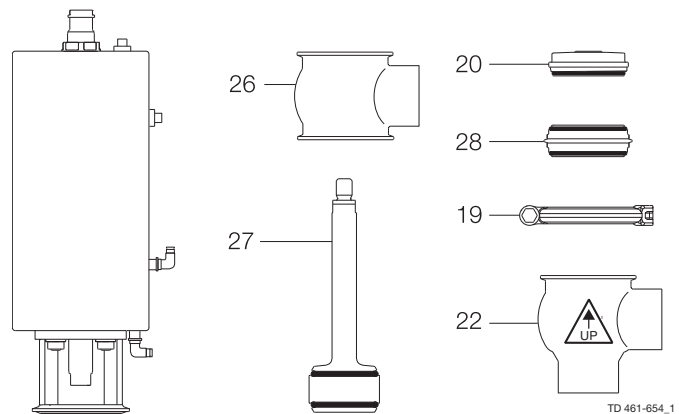
1. Complete actuator.
2. Bonnet (20).
3. Clamp (19).
4. Valve plug (23).
5. Valve body (22).



2b

Change-over valve:

1. Complete actuator.
2. Bonnet (20).
3. 2 x clamp (19).
4. Valve plug (27).
5. Lower valve body (22).
6. Valve seat (28).
7. Upper valve body (26).



Step 3

Remove possible packing materials from the valve/valve parts.

Inspect the valve/valve parts for visible transport damages.

Avoid damaging the valve/valve parts.

Study the instructions carefully and pay special attention to the warnings!
The valve has welding ends as standard but can also be supplied with fittings.

3.2 General installation

Step 1



Always read the technical data thoroughly.
See chapter



Always release compressed air after use.

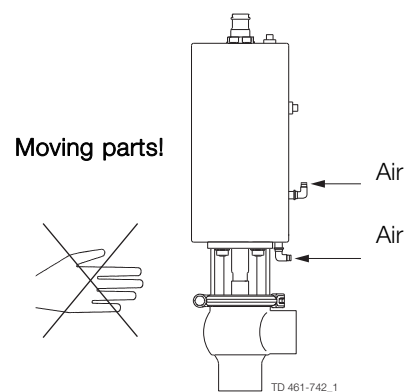
CAUTION

Alfa Laval cannot be held responsible for incorrect installation.

Step 2



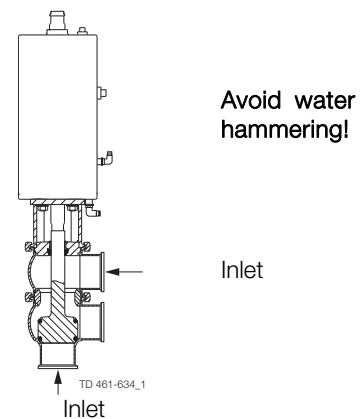
Never touch the moving parts if the actuator is supplied with compressed air.



Step 3

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

Shock in the actuator must **never** occur.

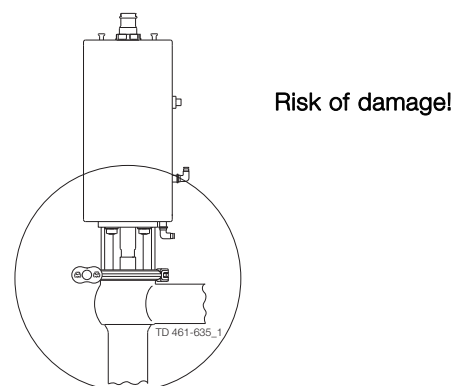


Step 4

Avoid stressing the valve.

Pay special attention to:

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



3 Installation

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.

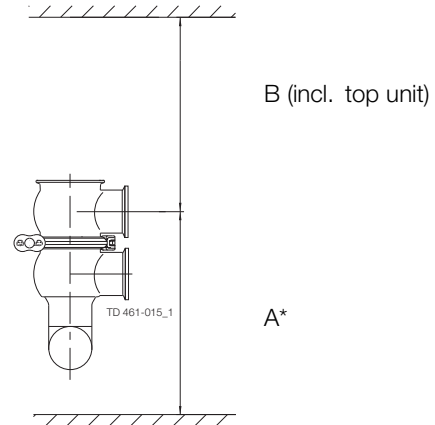
3.3 Welding

Step 1

Always install valves with more than one valve body so that the seals between the valve bodies can be replaced. Do not weld more than one valve body into the system.

Valve size	A (inch)	B (inch)
1 1/2"	*	30.7
2"	*	31.5
2 1/2"	*	31.1
3"	*	35.8
4"	*	35.4

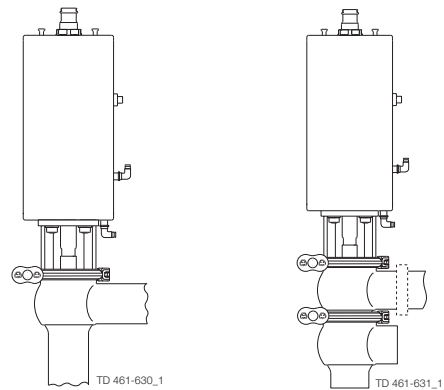
* Depending on body combination and piping solution.



Step 2

Assemble the valve in accordance with the steps on page 23.

Pay special attention to the warnings!



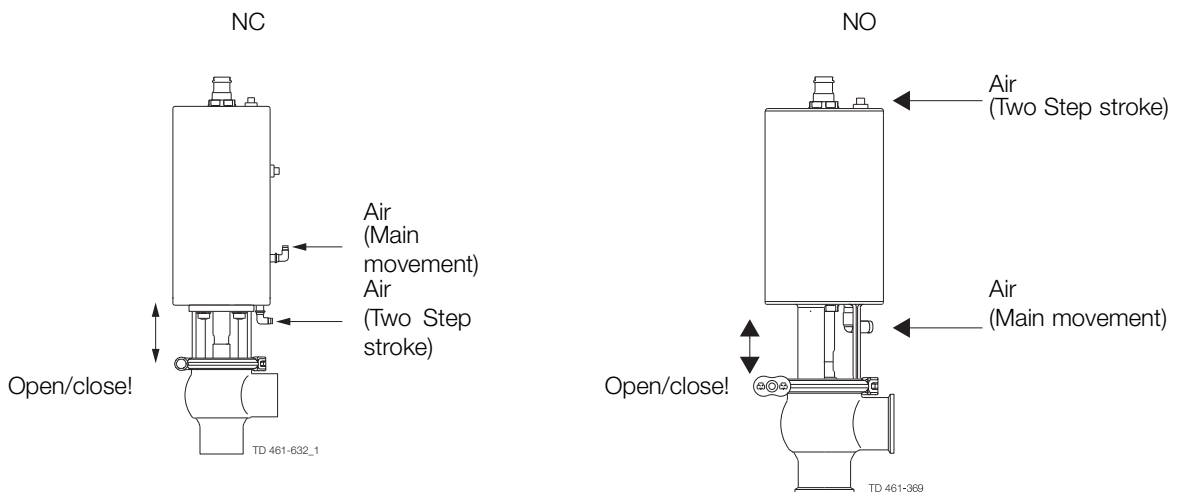
Step 3

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!



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.

3.4 Recycling information

- **Unpacking**

- Packing material consists 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 and wear parts in the machine are replaced
- All metal parts should be sent for material recycling
- Worn out or defective electronic parts should be sent to a licensed handler for material recycling
- Oil and all non metal wear parts must be taken care of in agreement with local regulations

- **Scrapping**

- At end of use, the equipment shall be recycled according to relevant, local regulations. Beside 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 the local Alfa Laval sales company
-

4 Operation

Study the instructions carefully.

The item refer to the parts list and service kits section.

NO= Normally open (pneumatic movement downwards)

NC= Normally closed (pneumatic movemetn upwards)

4.1 Description of valve function

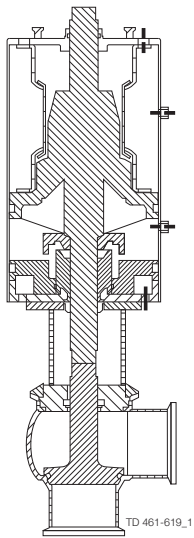
The SSV Two step valve has two pistons inside the actuator, which makes it possible to have an intermediate plug position where all body ends are open.

SSV Two step valves are made in a Shut off Valve and a Change-Over valve type.

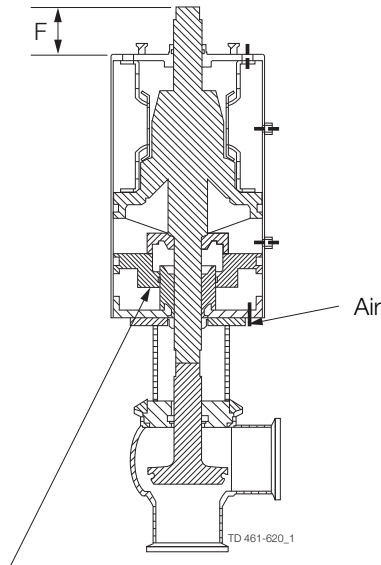
Type shut off valve (only NC)

Two step valves as shut off (only as NC) can be used for reducing pressure hammers or dosing e.g. in connection with filling of a vessel where an exact volume is required.

The degree of opening for the intermediate position can be adjusted by removing spacer ring inside the actuator (see 4.5).



Closed

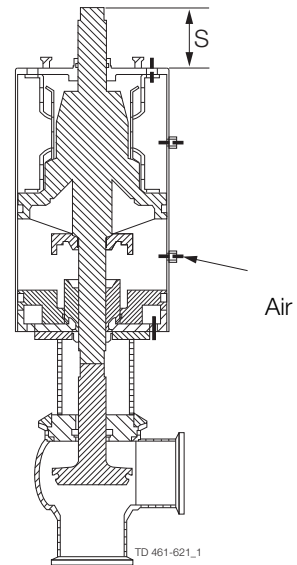


Throttled opening.

Two step stroke activated.

Throttled position can be adjusted by removing spaces.

Plug opening will increase if spacers are removed.



Ful open

The plug opening for different Shut off valves and Actuator size is shown below.

Dimensions = mm	Standard Actuator choice (NC)										High pressure Actuator (NC)			
	Inch tube					DIN tube					Inch tube		DIN tube	
	1½"	2"	2½"	3"	4"	1½"	2"	2½"	3"	4"	2"	2½"	2"	2½"
F min. Two step stroke (with spacers inside Actuator)	3	3	3	2.5	2.5	3	3	3	2.5	2.5	6	6	6	6
F max. Two step stroke (with spacers inside Actuator)	6	11	11	14	14	6	11	11	14	14	9	9	9	9
S = full stroke opening	20	25	25	30	30	20	25	25	30	30	25	25	25	25

Study the instructions carefully.

The item refer to the parts list and service kits section.

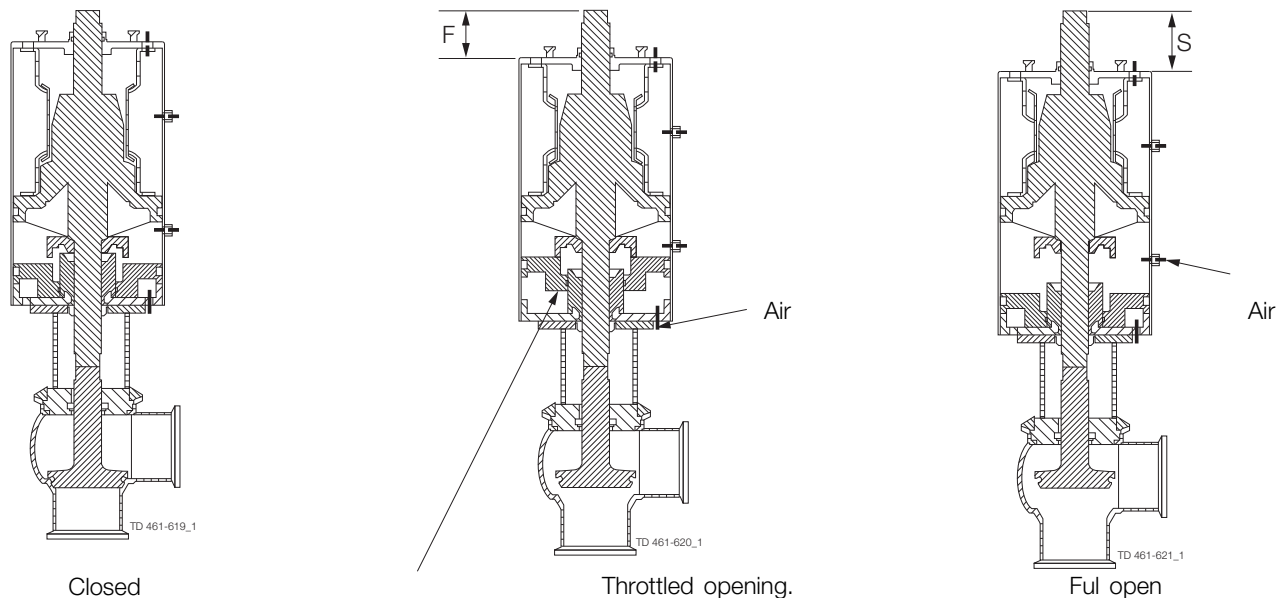
NO= Normally open (pneumatic movement downwards)

NC= Normally closed (pneumatic movemetn upwards)

Type Change-over valve (NC and NO)

Two step valves as change over (NC and NO) can be used for drainage of two pipes simultaneouslyreducing pressure hammers or dosing e.g. in connection with filling of a vessel where an exact volume is required.

The degree of opening for the intermediate position can be adjusted by removing spacer ring inside the actuator (see 4.5).



Throttled opening.
Two step stroke activated.
Throttled position an be adjusted by removing spaces.
Plug opening will increase if spacers are removed.

The plug opening for different Shut off valves and Actuator size is shown below.

Dimensions = mm	Standard Actuator choice (NC)										High pressure Actuator (NC)			
	Inch tube					DIN tube					Inch tube		DIN tube	
	1½"	2"	2½"	3"	4"	1½"	2"	2½"	3"	4"	2"	2½"	2"	2½"
F min. Fixed intermediate position	6.5	11	11	14	14	6.5	11	11	14	14	9	9	9	9
S = full stroke opening	17	22	22	27	27	17	22	22	27	27	22	22	22	22

4 Operation

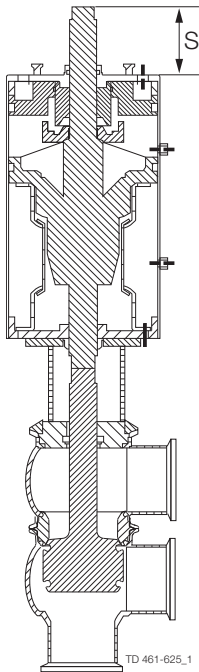
Study the instructions carefully.

The item refer to the parts list and service kits section.

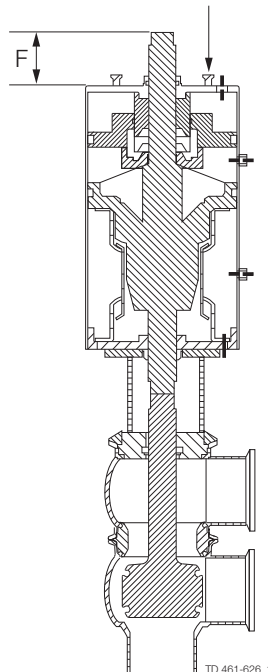
NO= Normally open (pneumatic movement downwards)

NC= Normally closed (pneumatic movemetn upwards)

Spring return to upper position = NO

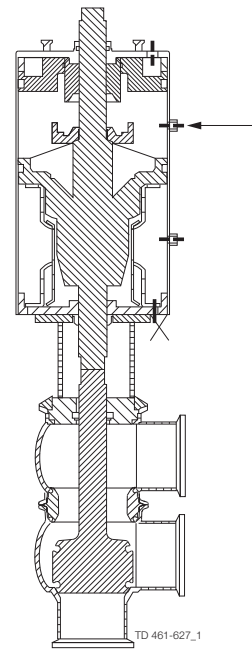


Closed



Intermediate position.
Two step stroke activated.

Air



Open

Air

The plug opening for different Change-over valves and Actuator size is shown below.

Dimensions = mm	Standard Actuator choice (NC)										High pressure Actuator (NC)			
	Inch tube					DIN tube					Inch tube		DIN tube	
	1½"	2"	2½"	3"	4"	1½"	2"	2½"	3"	4"	2"	2½"	2"	2½"
F min. Fixed intermediate position	11	11	11	14	14	11	11	11	11	11	11	11	11	11
S = full stroke opening	17	22	22	27	27	17	22	22	27	27	22	22	22	22

Study the instructions carefully and pay special attention to the warnings!
 Ensure that the valve operates smoothly.
 The items refer to the parts list and service kits section.

4.2 Operation

Step 1



Always read the technical data thoroughly.
 See chapter



Always release compressed air after use.

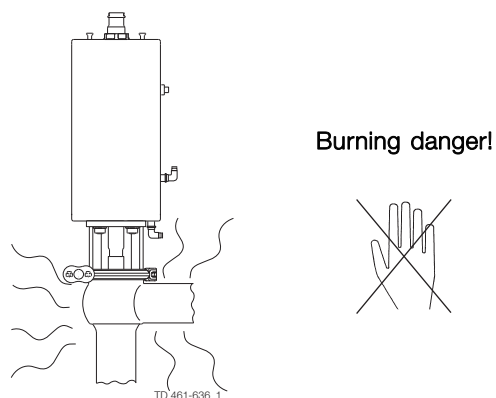
CAUTION

Alfa Laval cannot be held responsible for incorrect operation.

Step 2



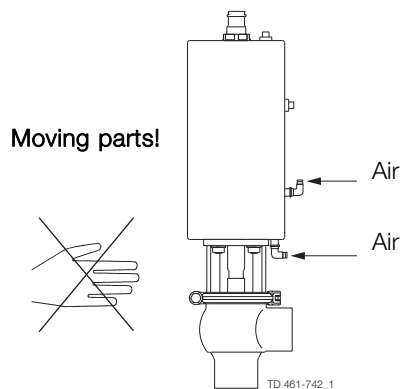
Never touch the valve or the pipelines when processing hot liquids or when sterilising.



Step 3



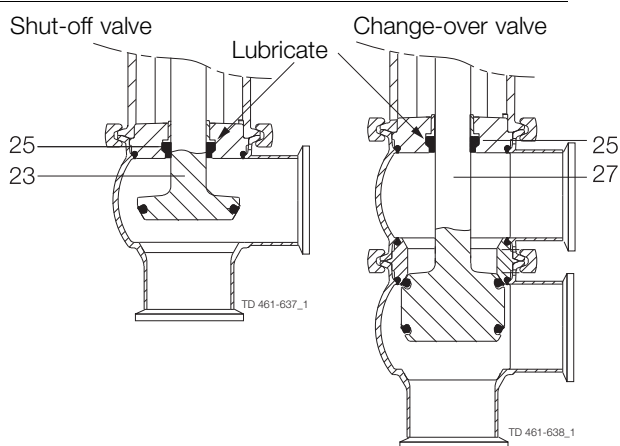
Never touch the moving parts if the actuator is supplied with compressed air.



Step 4

Lubrication of valves:

1. Ensure smooth movement between lip seal (25) and plug stem (23, 27).
2. Lubricate with Klüber Paraliq GTE 703 if necessary (see section 4.1).



4 Operation

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

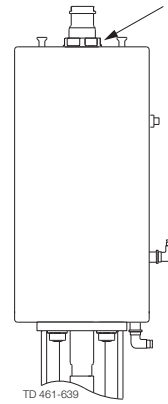
Ensure that the valve operates smoothly.

The items refer to the parts list and service kits section.

Step 5

Lubrication of actuator

1. Ensure smooth movement of the actuator (the actuator is lubricated before delivery).
2. Lubricate with Molykote Longterm 2 plus if necessary.



Lubricate

Pay attention to possible faults. Study the instructions carefully.
The items refer to the parts list and service kits section.

4.3 Troubleshooting

NOTE!

Study the maintenance instructions carefully before replacing worn parts. - See section 4.1!

Problem	Cause/result	Repair
External product leakage	Worn or product affected lip seal and/or O-ring	<ul style="list-style-type: none"> - Replace the seals - Replace with seals of a different rubber grade
Internal product leakage	<ul style="list-style-type: none"> - Worn or product affected plug seal - Product deposits on the seat and/or plug - Product pressure exceeds actuator specification 	<ul style="list-style-type: none"> - Replace the seal - Replace with a seal of a different rubber grade - Frequent cleaning - Replace with a high pressure actuator - Use auxiliary air on the spring side (do not exceed 3 bar) - Reduce product pressure
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 - Throttle air release of solenoid in top unit
The valve does not open/close	Product pressure exceeds actuator specification	<ul style="list-style-type: none"> - Replace with a high pressure actuator - Use auxiliary air on the spring side - Reduce product pressure

4 Operation

The valve is designed for cleaning in place (CIP). CIP = Cleaning In Place.
 Study the instructions carefully and pay special attention to the warnings!
 NaOH = Caustic Soda.
 HNO₃ = Nitric acid.

4.4 Recommended cleaning

Step 1



Always handle lye and acid with great care.

Caustic danger!



Always use
rubber gloves!

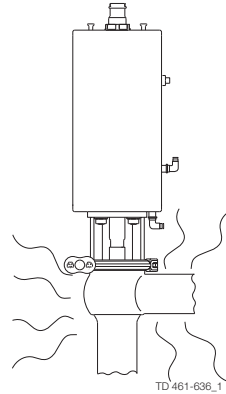


Always use
protective goggles!

Step 2



Never touch the valve or the pipelines when sterilising.



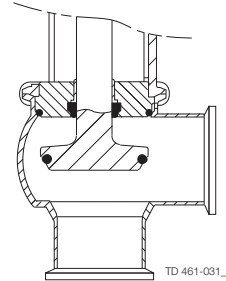
Burning danger!



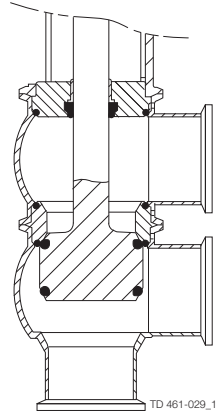
Step 3

Clean the plug and the seats correctly.
Pay special attention to the warnings!
 Lift and lower valve plug momentarily!

Shut-off valve



Change-over valve



Step 4

Examples of cleaning agents:

Use clean water, free from chlorides.

1. 1% by weight NaOH at 158° F

$$\begin{array}{|c|} \hline 2.2 \text{ lb} \\ \hline \text{NaOH} \\ \hline \end{array} + \begin{array}{|c|} \hline 26.4 \text{ gal} \\ \hline \text{water} \\ \hline \end{array} = \text{Cleaning agent.}$$

$$\begin{array}{|c|} \hline 0.6 \text{ gal} \\ \hline 33\% \text{ NaOH} \\ \hline \end{array} + \begin{array}{|c|} \hline 26.4 \text{ gal} \\ \hline \text{water} \\ \hline \end{array} = \text{Cleaning agent.}$$

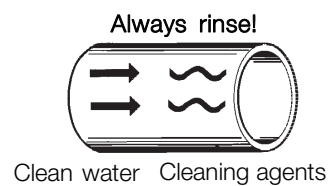
2. 0.5% by weight HNO₃ at 158° F

$$\begin{array}{|c|} \hline 0.2 \text{ gal} \\ \hline 53\% \text{ HNO}_3 \\ \hline \end{array} + \begin{array}{|c|} \hline 26.4 \text{ gal} \\ \hline \text{water} \\ \hline \end{array} = \text{Cleaning agent.}$$

The valve is designed for cleaning in place (CIP). CIP = Cleaning In Place.
Study the instructions carefully and pay special attention to the warnings!
NaOH = Caustic Soda.
HNO₃ = Nitric acid.

Step 5

1. Avoid excessive concentration of the cleaning agent.
2. Adjust the cleaning flow to the process.
3. **Always** rinse well with clean water after the cleaning.



Step 6

NOTE

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

5 Maintenance

Maintain the valve regularly.

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

Always keep spare rubber seals and lip seals in stock.

5.1 General maintenance

Step 1



Always read the technical data thoroughly.
See chapter 5.



Always release compressed air after use.

Step 2



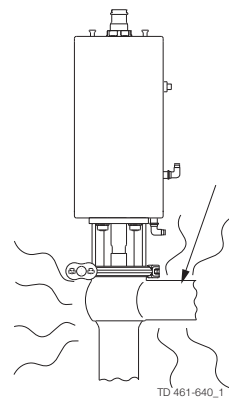
Never service the valve when it is hot.



Never service the valve with valve and pipelines under pressure.

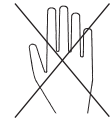
NOTE

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



Atmospheric pressure required!

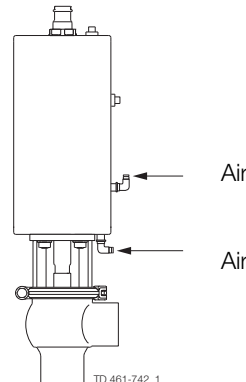
Burning danger!



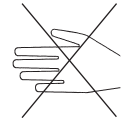
Step 3



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



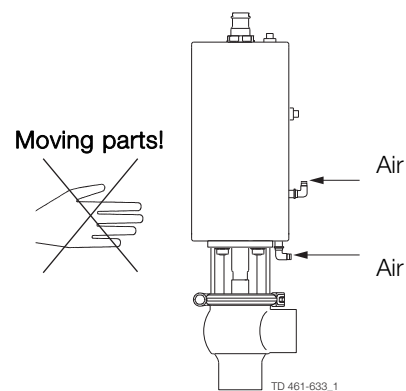
Cutting danger!



Step 4



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



Moving parts!

Maintain the valve regularly.

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

Always keep spare rubber seals and lip seals in stock.

Below are some guidelines for maintenance and lubrication intervals. Please note that the guidelines are for normal working conditions in one shift.

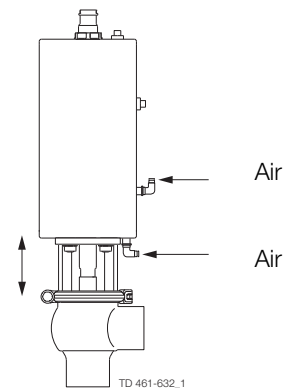
	Product wetted seals	Actuator bushings complete
Preventive maintenance	Replace after 12 months depending on working conditions	Replace after 5 years depending on working conditions
Maintenance after leakage (leakage normally starts slowly)	Replace at the end of the day	Replace when possible
Planned maintenance	<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	<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	Before fitting Klüber Paraliq GTE 703 or similar USDA H1 approved oil/grease	Before fitting Molykote Longterm 2 plus

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!

Open/close!



Recommended spare parts

Service kits (see chapter 6)

5 Maintenance

Study the instructions carefully. The items refer to the parts list and service kits section. Handle scrap correctly.

NC = Normally closed.

NO = Normally open.

A/A = Air/air activated.

5.2 Dismantling the valve

Step 1

1a

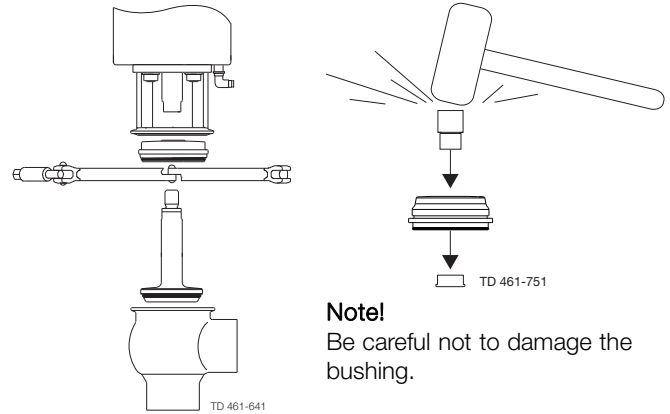
Shut-off valve:

1. Supply compressed air to the actuator (only NC).
2. Loosen and remove clamp.
3. Release compressed air (only NC).
4. Lift away the actuator.
5. Unscrew and remove valve plug.
6. Remove O-ring, lip seal and bushing in bonnet.
(Use bushing tool and rubber mallet).

Note! Be careful not to damage the bushing.

Pay special attention to the warnings!

Note! For plug seal replacement please see page 23.



Note!

Be careful not to damage the bushing.

1b

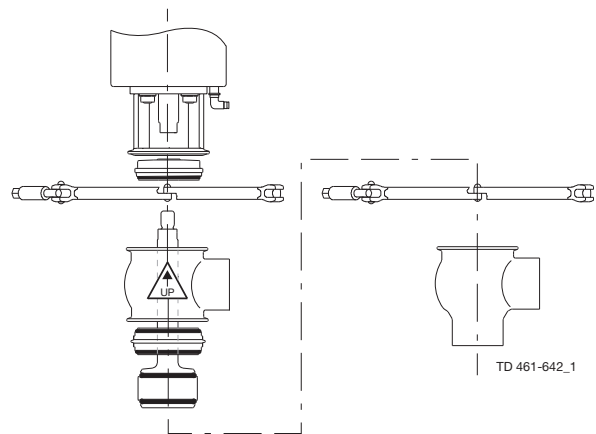
Change-over valve:

1. Supply compressed air to the actuator (only NC).
2. Loosen and remove lower clamp.
3. Release compressed air (only NC).
4. Lift away the actuator and upper valve body.
5. Supply compressed air to the actuator (only NO).
6. Unscrew and remove valve plug.
7. Release compressed air (only NO).
8. Remove seat and O-rings.
9. Loosen and remove upper clamp.
10. Remove upper valve body.
11. Remove O-ring, lip seal and bushing in bonnet.
(Use bushing tool and rubber mallet.
See drawing, step 1a).

Note! Be careful not to damage the bushing.

Pay special attention to the warnings!

Note! For plug seal replacement please see page 23.



Study the instructions carefully. The items refer to the parts list and service kits section. Handle scrap correctly.

NC = Normally closed.

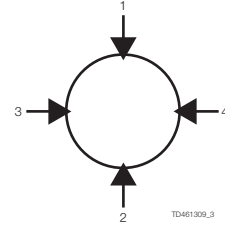
NO = Normally open.

A/A = Air/air activated.

5.3 Elastomer and TR2 seal ring replacement

Elastomer seal ring replacement

1. Remove old seal ring using a knife, screwdriver or similar.
Be careful not to damage metal parts.
2. Pre-mount plug seal without pressing it into the groove.
3. Squeeze plug seal into the groove using opposite pressure points.
4. Release compressed air behind plug seal.



5.4 Assembly of valve

Reverse order of 5.2, Dismantling of valve.

Lubricate O-ring (21) and lip seal (25) with Klüber Paraliq GTE 703.

Remember to tighten spindle and plug with a torque $M = 23 \text{ lbf-ft}$ (30 Nm) (Use two 17 mm spanners)

If there are vibrations in the pipeline Alfa Laval recommend to use loctite nr. 243.

5 Maintenance

Study the instructions carefully.

The items refer to the parts list and service kits section.

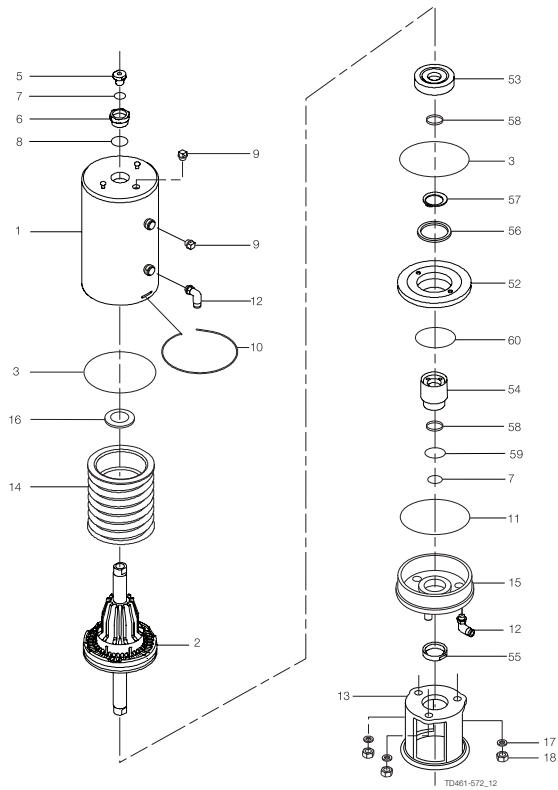
NO = Normally open (pneumatic movement downwards).

NC = Normally closed (pneumatic movement upwards).

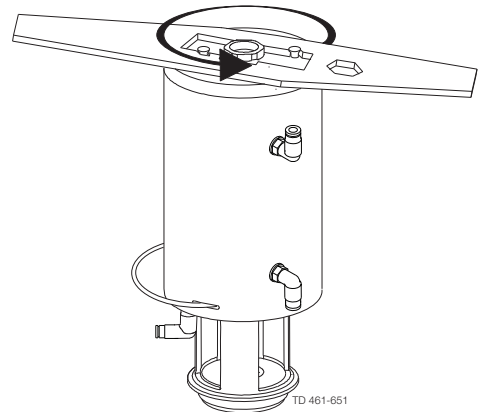
5.5 Dismantling of (NC) maintainable actuator

5.5. Dismantling of (NC) maintainable actuator

1. Rotate cylinder (1)
2. Remove lock wire (10) and pull away cylinder (1). This can be done by careful using air on fitting (12)
3. Remove o-ring (11) from bottom (15)
4. Unscrew top bushing (6) and remove o-ring (8)
5. Remove piston (2) together with support disk (16), thrust plate (53) and o-ring (3)
6. Remove spring assembly (14)
7. Remove seegering lock ring (57) using a seegering-tang tool
8. Remove piston (52) and o-rings (3+60) together with spacer rings(56)
Spacer rings (56) are only mounted on Shut off valve and not on Change-over valve.
Spacer rings are used to reduce the piston (52) stroke, so that the Shut off valves intermediate plug position can be adjusted.
9. Remove guide ring (58) and o-ring (7)
10. Guide (54) is screwed on bottom part (15) and should only be dismantled if guide (54) is broken.
If guide (54) has to be dismantled start with unscrewing nuts (18) and remove yoke (13) and loosen nut (55).
With a special tool it now is possible to dismantle guide (54). This is shown in 4.8.



Rotate cylinder with service tool



- 56 - (only mounted on shut off valves)
- Not mounted on change over valves
- 59 - (no wearpart)

Study the instructions carefully.

The items refer to the parts list and service kits section.

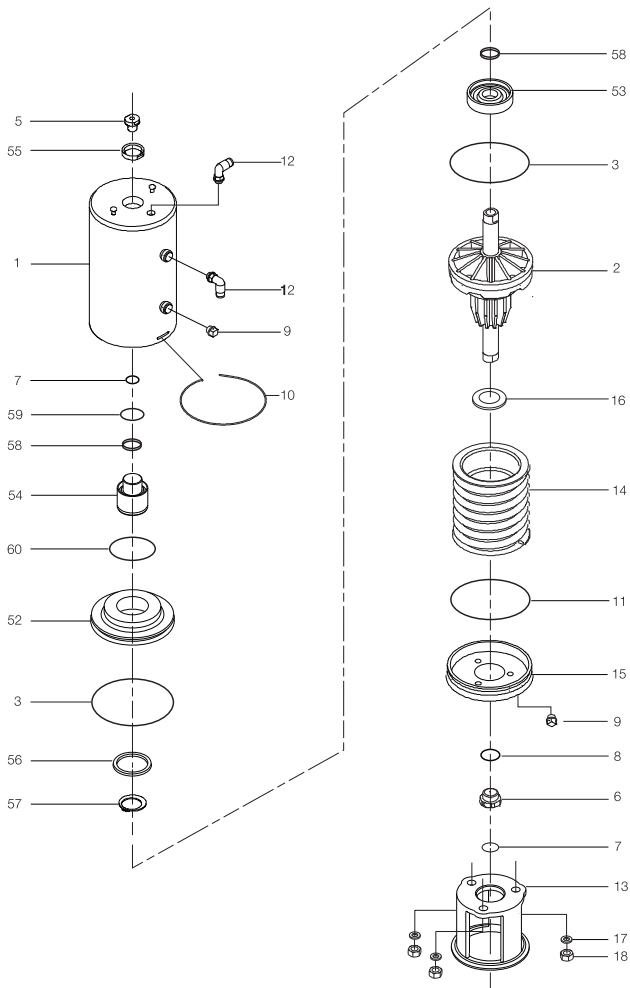
NO = Normally open (pneumatic movement downwards).

NC = Normally closed (pneumatic movement upwards).

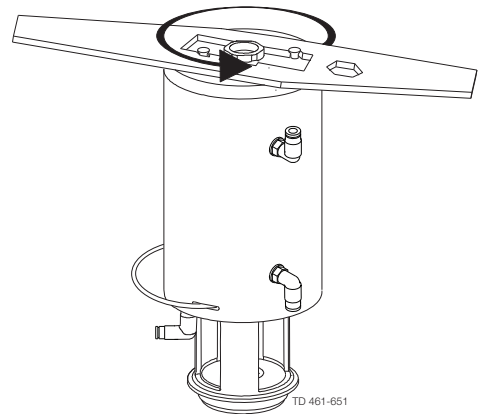
5.6 Dismantling of Change-over (NO) maintainable actuator

5.6 Dismantling of Change-over (NO) maintainable actuator

1. Rotate cylinder (1)
2. Remove lock wire (10) and pull away cylinder (1). This can be done by careful using air on fitting (12)
3. Remove o-ring (11) from bottom (15)
4. Unscrew top bushing (6) and remove o-ring (8)
5. Remove piston (2) together with support disk (16), thrust plate (53) and o-ring (3)
6. Unscrew nuts (18) and remove yoke (13). The nuts must be tightened again to $m = 12 \text{ lbf-ft (17 Nm)}$. Be careful not to overtighten.
7. Unscrew bottom bushing (6) and remove o-ring (8)
8. Remove seegering lock ring (57) using a seegering-tang tool.
9. Push piston (52) out of cylinder (1) using air on fitting (12) and remove o-rings (3+60) together with spacer ring (56).
Spacer ring (56) are only mounted on GR.3 actuator (diameter = $\varnothing 154$) type normally open.
10. Remove guide ring (58) and o-ring (7)
11. Guide (54) is screwed on top of cylinder (1) and should only be dismantled if guide (54) is broken.
If guide (54) has to be dismantled loosen nut (55). With a special tool it now is possible to dismantle guide (54). This is shown in 4.8.



Rotate cylinder with service tool



56 - (only mounted on shut off valves)
Not mounted on change over valves
59 - (no wearpart)

5 Maintenance

Study the instructions carefully.

The items refer to the parts list and service kits section.

NO = Normally open (pneumatic movement downwards).

NC = Normally closed (pneumatic movement upwards).

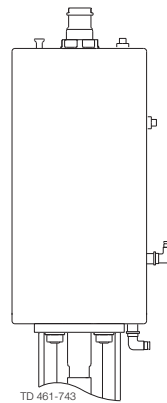
5.7 Assembly of maintainable actuator

Reverse order of 4.5 (Dismantling of (NC) maintainable actuator)

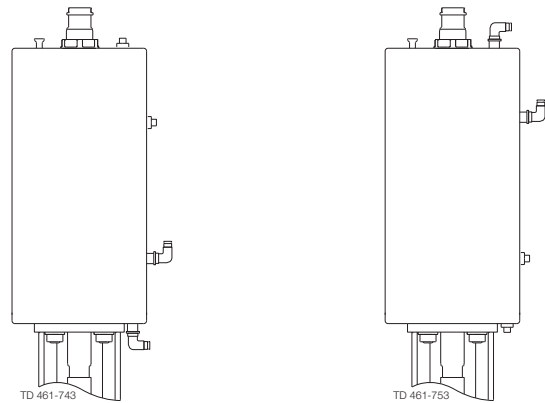
Reverse order of 4.6 (Dismantling of (NO) maintainable actuator)

5.8 Reversing maintainable actuator operation.

Actuator for the Shut-Off valves can not be reversed as it only is possible to operate in NC position.

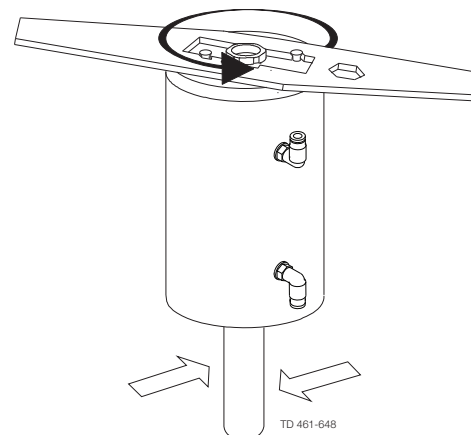


Actuator for the Change-over valves can be reversed from NC to NO and from NO to NC.



Reversing maintainable actuator operation can be done by reversing parts inside the actuator (see 4.5 and 4.6). It is necessary to use a special "Two step guide tool" and a "turning tool" (Item no. 31353-02191) for mounting the guide (54).

- 1) Fit the "Two step guide tool" in a vice.
- 2) Fit o-ring (59) in Guide (54) and by hand screw it in cylinder (1).
- 3) Fit "turning tool" on top of cylinder (1) and tighten (Torque 11.1 – 14.8 (lbf - ft)).



Study the instructions carefully.

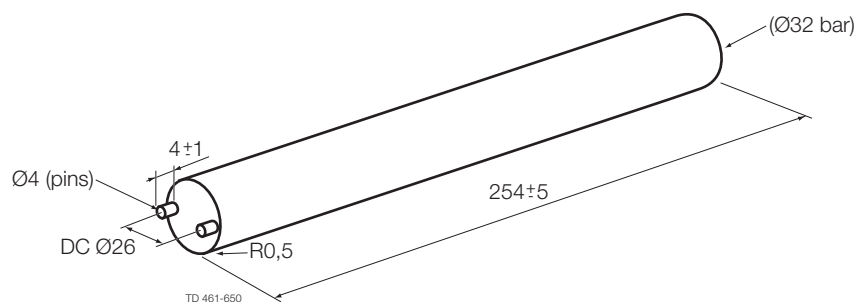
The items refer to the parts list and service kits section.

NO = Normally open (pneumatic movement downwards).

NC = Normally closed (pneumatic movement upwards).

Drawing of "Two step mounting tool":

- 1) Use $\varnothing 32$ mm bar and drill two $\varnothing 4$ holes in a diameter $\varnothing 26$ mm. (The depth of $\varnothing 4$ holes should be approx 6 mm)
- 2) Edges on $\varnothing 32$ bar has to be min. R0.5 so it can fit into guide (54)
- 3) Use $\varnothing 4$ mm bar with a length of approx 10 mm.
- 4) Apply loctite 270 or 638 and fit the two $\varnothing 4$ pins so length are according to drawing.



6 Technical data

*It is important to observe the technical data during installation, operation and maintenance.
Inform the personnel about the technical data.*

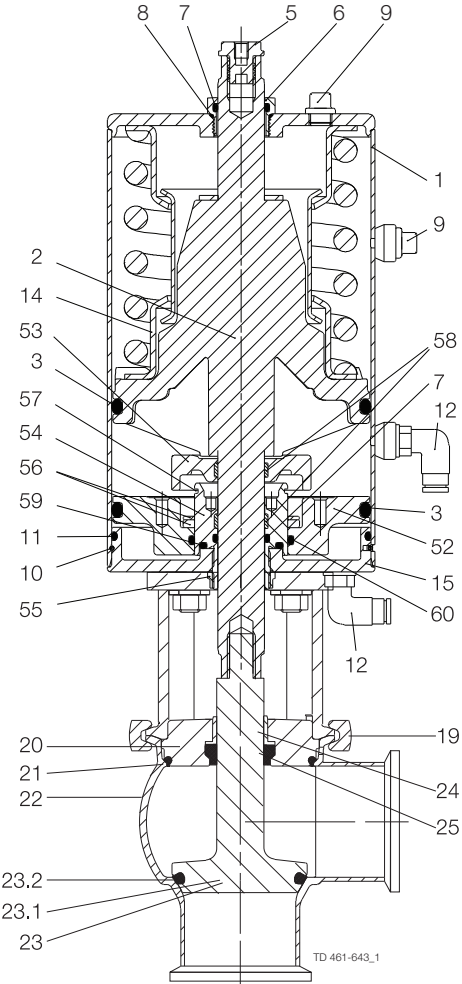
6.1 Technical data

Data - valve/actuator	
Max. product pressure	145.PSI.(1000.kPa) (10 bar)
Min. product pressure	Full.vacuum.(deprndg on product specifications).....
Temperature range	14°F. + 284.°F.(standard EPDM seal)
Air pressure, actuator	72.5 to 101.5 PSI (500 to 700 kPa) (5 to 7 bar)
Materials - valve/actuator	
Product wetted steel parts	ASI.316L.(internal Ra < 32 μ inch)
Other steel parts	ASI.304.....
Plug seal	EPDM./ PTFE.(TR2)
Other product wetted seals	EPDM.(standard).
Optional product wetted seals	HNBR and FPM
Other seals	NBR

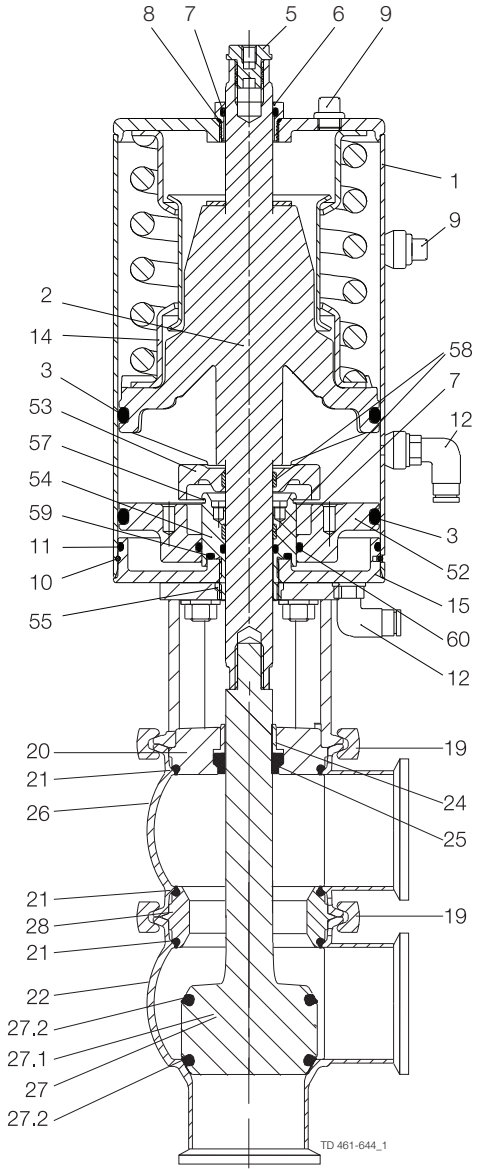
7 Parts list and Service Kits

For parts lists please see section 6.1. The drawings include all items.

7.1 Drawing



Shut-off valve

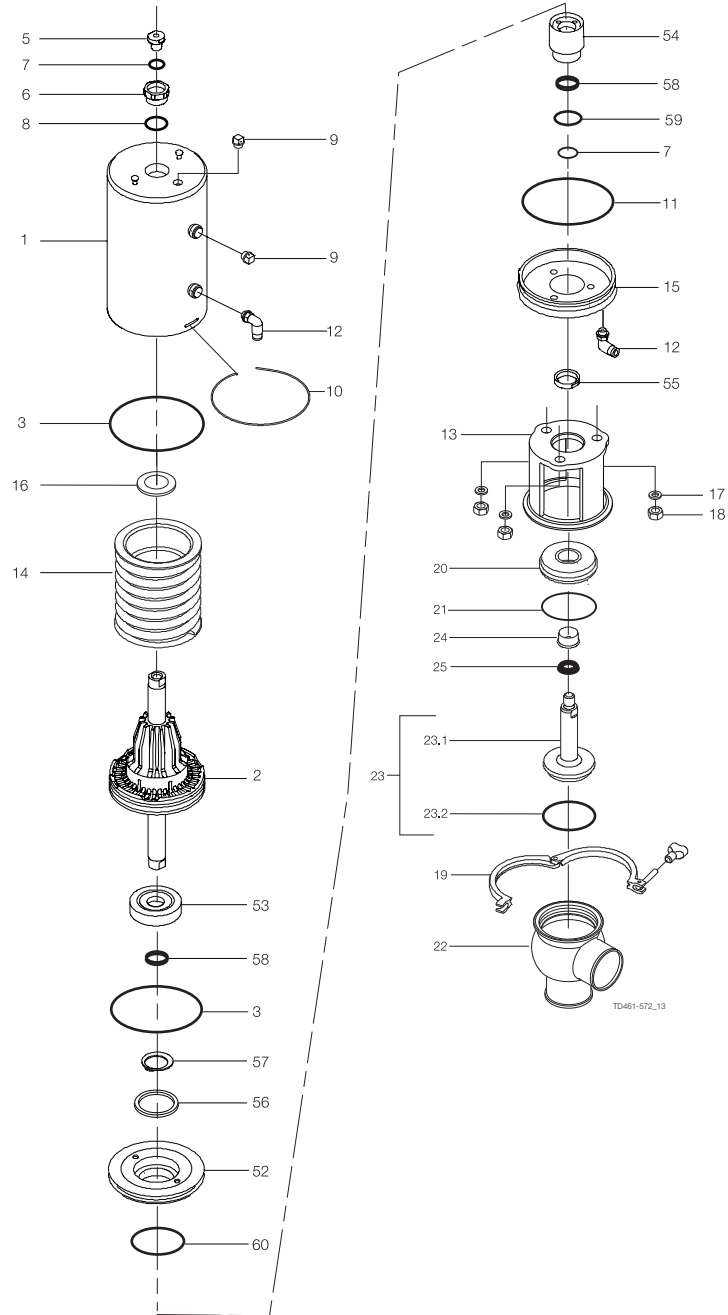


Change-over valve

7 Parts list and Service Kits

For parts lists please see section 6.1. The drawings include all items.

7.2 Unique 700 Series Valve - two Step - Shut-off



7 Parts list and Service Kits

For parts lists please see section 6.1. The drawings include all items.

Parts list

Pos.	Qty	Denomination
	4	Spacer 51-63.5 mm / DN50-65
	5	Spacer 76.1-101.6 mm / DN80-100
1	1	Cylinder
2	1	Piston
3 ●	2	O-ring
5	1	Adapter
6 ●	1	Bushing
7 ●	2	O-ring
8 ●	1	O-ring
9	2	Plug
10 ●	1	Lock wire
11 ●	1	O-ring
12	2	Air fitting
13	1	Yoke
14	1	Spring assembly
15	1	Bottom
16 ●	1	Support disc
17	3	Washer
18	3	Nut
19	1	Clamp
20	1	Bonnet
21 ▲	1	O-ring
22	1	Valve body, lower, 2 ports
	1	Valve body, lower, 3 ports
23	1	Plug, shut-off, complete
23.1	1	Plug, shut-off
24	1	Bushing
25 ▲	1	Lip seal
52	1	Piston
53	1	Thrust plate
54	1	Guide
55	1	Nut
56	2	Spacer 38 mm / DN40
57	1	Lock ring
58	2	Guide ring
59 ●	1	O-ring
60 ●	1	O-ring

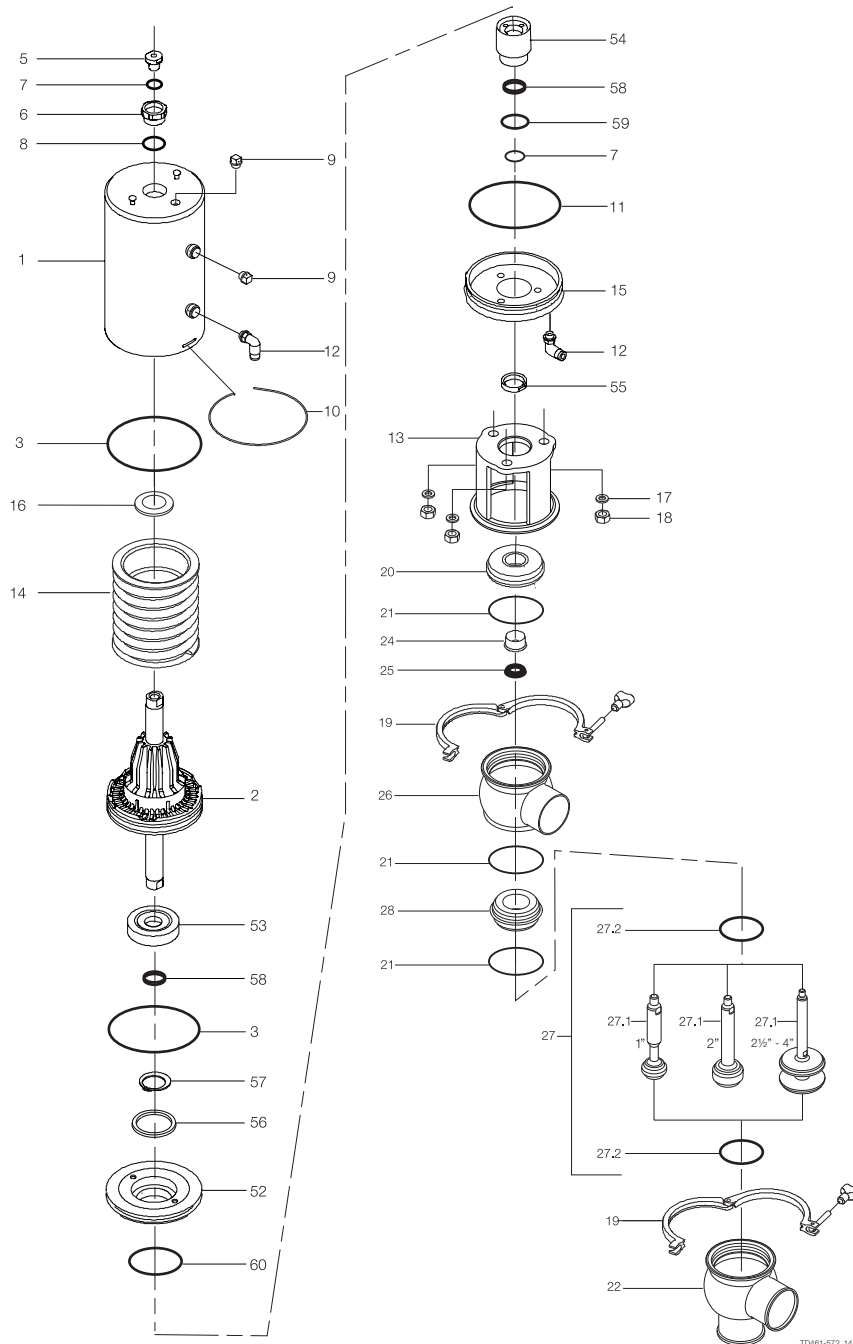
Service kits

Denomination	1½"	2"	2½"	3"	4"
Service kit / Product wetted parts (Shut-off)					
Service kit, actuator	9611-92-6738	9611-92-6738	9611-92-6738	9611-92-6739	9611-92-6739
Service kits / Product wetted parts (Shut-off)					
Service kit, EPDM	9611-92-6502	9611-92-6503	9611-92-6504	9611-92-6505	9611-92-6505
Service kit, HNBR	9611-92-6508	9611-92-6509	9611-92-6510	9611-92-6511	9611-92-6512
Service kit, FPM	9611-92-6514	9611-92-6515	9611-92-6516	9611-92-6517	9611-92-6518

7 Parts list and Service Kits

For parts lists please see section 6.1. The drawings include all items.

7.3 Unique 7000 - Long stroke TR2 - Change-over-valve



7 Parts list and Service Kits

For parts lists please see section 6.1. The drawings include all items.

Parts list

Pos.	Qty	Denomination
1	1	Cylinder
2	1	Piston
3 ●	2	O-ring
5	1	Adapter
6 ●	1	Bushing
7 ●	2	O-ring
8 ●	1	O-ring
9	2	Plug
10	1	Lock wire
11 ●	1	O-ring
12	2	Air fitting
13	1	Yoke
14	1	Spring assembly
15	1	Bottom
16 ●	1	Support disc
17	3	Washer
18	3	Nut
19	2	Clamp
20	1	Bonnet
21 ▲	3	O-ring
22	1	Valve body, lower, 2 ports ISO
	1	Valve body, lower, 3 ports ISO
24	1	Bushing
25 ▲	1	Lip seal
26	1	Valve body, upper, 1 port ISO
	1	Valve body, upper, 2 ports ISO
27	1	Plug, change-over, ISO complete, EPDM (standard)
27.1	1	Plug, change-over, ISO
	1	Plug, change-over, DIN
27.2 ▲	2	Plug seal, EPDM (standard)
	2	Plug seal, HNBR
	2	Plug seal, FPM
28	1	Seatr
52	1	Piston
53	1	Thrust plate
54	1	Guide
55	1	Nut
56	2	Spacer (Only NO76,1-101,6 mm/DN80-100)(ø154)
57	1	Lock ring
58	2	Guide ring
59 ●	1	O-ring
60 ●	1	O-ring

Service kits

Denomination	1½"	2"	2½"	3"	4"
Service kit/Product wetted parts (Shut-off)					
Service kit, actuator	9611-92-6738	9611-92-6738	9611-92-6738	9611-92-6739	9611-92-6739
Service kits/Product wetted parts (Shut-off)					
Service kit, EPDM	9611-92-6502	9611-92-6503	9611-92-6504	9611-92-6505	9611-92-6505
Service Kit, HNBR	9611-92-6508	9611-92-6509	9611-92-6510	9611-92-6511	9611-92-6512
Service kit, FPM	9611-92-6514	9611-92-6515	9611-92-6516	9611-92-6517	9611-92-6518

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