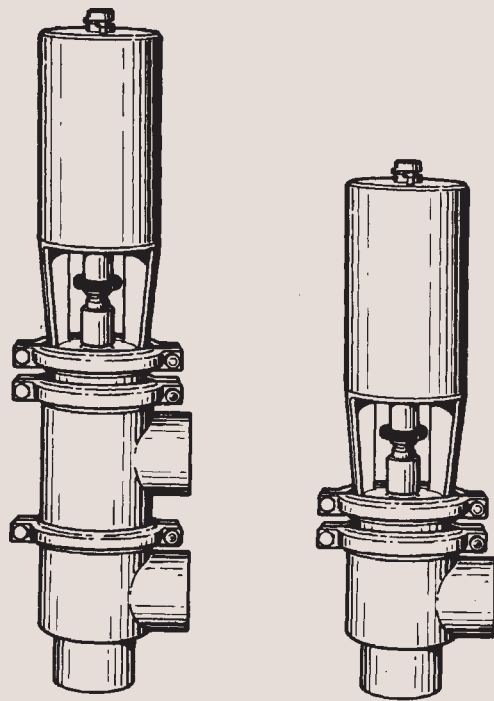




Instruction Manual

ARC with reduced stroke Aseptic Remote-Controlled Valve



IM70815EN 2010-03

Original Instructions

1 EC Declaration of Conformity

The designating company

Alfa Laval

Company Name

Albuen 31, DK-6000 Kolding, Denmark

Address

+45 79 32 22 00

Phone No.

hereby declare that

Aseptic Remote-Controlled Valve

Denomination

ARC with reduced stroke

Type

Year

is in conformity with the following directives:

- Machinery Directive 2006/42/EC
- Pressure Equipment Directive 97/23/EC category 1 and subjected to assessment procedure Module A.

Manager, Product Centres, Compact
Heat Exchangers & Fluid Handling

Title

Bjarne Søndergaard

Name

Alfa Laval Kolding
Company

Signature



Designation



This manual is divided into main sections. - See below.

Safety

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Drawings/Parts list

1. Parts list	
- ARC with reduced stroke	22+24+26+28
- Oil damper	30+32
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- ARC with reduced stroke	23+27
- Oil damper	31
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- ARC with reduced stroke	25+29
- Oil damper	33

Safety

Unsafe practices and other important information are emphasized in this manual.

Warnings are emphasized by means of special signs.

1. Important information

Always read the manual before using the valve!

2

- WARNING!** : Indicates that special procedures **must** be followed to avoid severe personal injury.
- CAUTION!** : Indicates that special procedures **must** be followed to avoid damage to the valve.
- NOTE!** : Indicates important information to simplify practices or to make them clearer.

2. Warning signs



: General warning.



: Caustic agents.

Transportation:

Always secure that compressed air is released

Always secure that all connections is disconnected before attempt to remove the valve from the installation

Always drain liquid out of valves before transportation

Always used predesigned lifting points if defined

Always secure sufficient fixing of the valve during transportation - if special designed packaging material is available it must be used

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.

3. Safety precautions

Installation:



- : - **Always** read the technical data thoroughly (see page 20).
- **Always** release compressed air after use.



- : **Never** touch the clip assembly or the actuator piston rod 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 when it is hot.
- **Never** dismantle the valve with valve and pipelines under pressure.

Operation:



- : - **Always** read the technical data thoroughly (see page 20).
- **Always** release compressed air after use.



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



- : **Never** touch the clip assembly or the actuator piston rod if the actuator is supplied with compressed air.



- : **Always** handle lye and acid with great care.

Maintenance:



- : - **Always** read the technical data thoroughly (see page 20).
- **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 clip assembly or the actuator piston rod if the actuator is supplied with compressed air.

Installation

4

The instruction manual is part of the delivery. Study the instructions carefully. The items refer to the drawings and the parts list on pages 22-29.

1. Unpacking/Delivery

1

NOTE!

We cannot be held responsible for incorrect unpacking.

Check the delivery:

1. Complete valve, stop valve or change-over valve (see 2 and 3).
2. Delivery note.
3. Instruction Manual.

3

Delivery of change-over valve:

1. Complete actuator with bonnet (8).
2. Clip assembly (11).
3. Intermediating ring (13).
4. Diaphragm stem seal (20).
5. Three clamps (15).
6. Valve stem unit (19, 22).
7. Two valve bodies (16, 18).
8. Valve body seal ring (17).

5

Inspect the valve/valve parts for visible transport damage.

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

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

2

Delivery of stop valve:

1. Complete actuator with bonnet (8).
2. Clip assembly (11).
3. Intermediating ring (13).
4. Diaphragm stem seal (20).
5. Two clamps (15).
6. Valve stem unit (19, 22).
7. Washer (14).
8. Valve body (18).

4

Remove possible packing materials from the valve/valve parts.

6

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.

NO = Normally open.
NC = Normally closed.
A/A = Air/air activated.

2. General installation

1



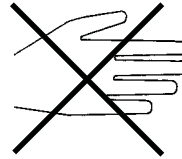
- **Always** read the technical data thoroughly (see page 20).
- **Always** release compressed air after use.

NOTE!

We cannot be held responsible for incorrect installation.

2

Moving parts!



Never touch the clip assembly or the actuator piston rod if the actuator is supplied with compressed air.

3

4

Risk of damage!

Avoid stressing the valve.

Pay special attention to:

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

5

6

Fittings:

Ensure that the connections are tight (remember seal rings).

Air connection: R1/8" (BSP)

Connect air correctly:

- NO: Top connection.
- NC: Side connection.
- A/A: Top and side connection.

Installation

Study the instructions carefully.
The valve is supplied as separate parts to facilitate the welding.

The items refer to the drawings and the parts list on pages 22-29.
Check the valve for smooth operation after welding.

3. Welding

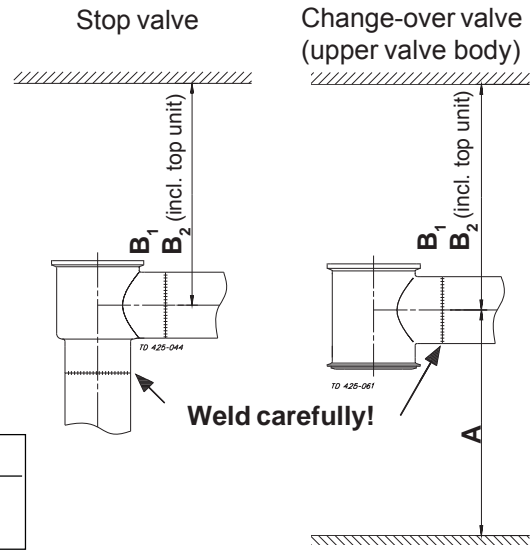
1

6

Always weld the valve so that the valve body seal ring can be replaced (change-over valve).

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

Valve size	A (mm)	B ₁ (mm)	B ₂ (mm)
38 mm	160	550	660
51 mm	160	550	660



2

3

Stop valve:

Reassemble the valve in accordance with instructions 4-11 on pages 16-17.

Pay special attention to the warnings!

Change-over valve:

Reassemble the valve in accordance with instructions 3-11 on pages 16-17.

Pay special attention to the warnings!

4

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!

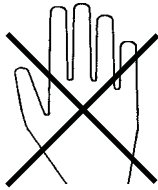
The valve can be fitted with an oil damper if water hammer occurs when the valve closes in the flow direction.

Study the instructions carefully and pay special attention to the warnings!
 NC = normally closed
 A/A = air/air activated

4. Fitting of oil damper (optional extra)

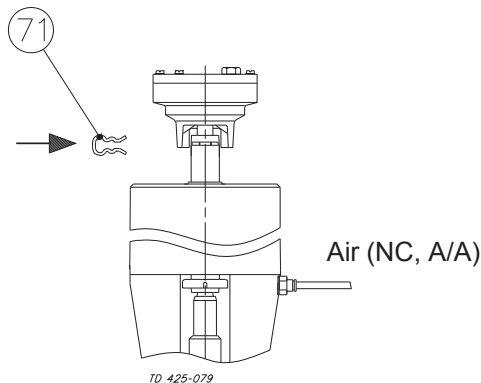
1

Burning danger!



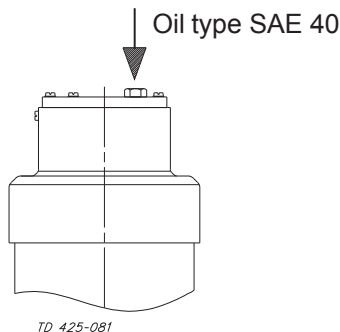
! Never touch the valve or the pipelines when processing hot liquids or when sterilizing.

3



1. Connect the two piston rods by means of clip (71).
2. Release compressed air to the actuator.
Pay special attention to the warnings!

5



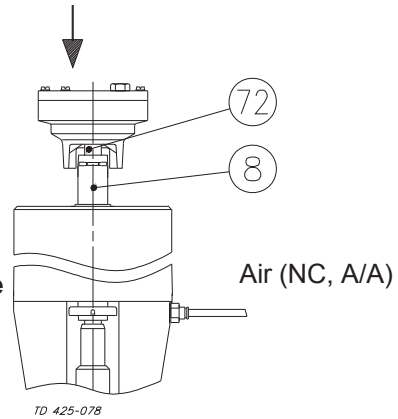
Fill further oil through the plug hole if large air bubbles occur under the plexiglas cover.

NOTE!

There should be a small air bubble which equalizes changes in the pressure because of temperature changes.

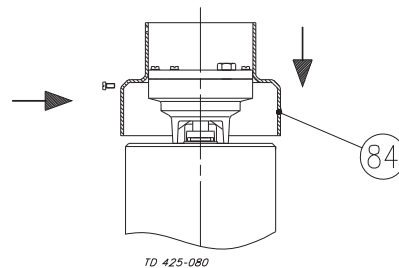
2

Ensure that no other equipment is fitted on the actuator top!



1. Supply compressed air to the actuator.
Pay special attention to the warnings!
2. Fit the damper so that damper piston rod (72) enters actuator piston rod (8).

4



1. Fit protective hood (84).
2. The valve is now ready for operation.

6

Removal/dismantling:

Remove the damper by following the instructions in reverse order.

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!

Installation

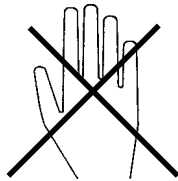
The valve can be fitted with the top units LKT-N and LKT-S. It can also be fitted with an indication unit.

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

5. Fitting of indication equipment (optional extra)

1

Atmospheric pressure required!



Burning danger!



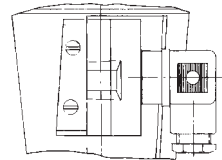
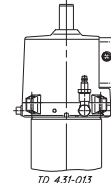
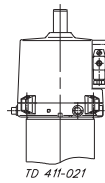
- **Never** dismantle the valve when it is hot.
- **Never** dismantle the valve with valve and pipelines under pressure.

2

LKT-N

LKT-S

Indication unit



CAUTION!

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

- Top units LKT-N and LKT-S: (see the separate instruction manuals).
- Indication unit: (see the instructions on page 8).

3

Dismantle the valve in accordance with instructions 1-2 on page 14.

Pay special attention to the warnings!

4

1. Fit the ring on the plug stem.
2. Reassemble the valve in accordance with instructions 10-11 on page 17.

Pay special attention to the warnings!

5

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 and pay special attention to the warnings!
Ensure that the valve operates smoothly.

The items refer to the drawings and the parts list on pages 22-29.

1. Operation

1



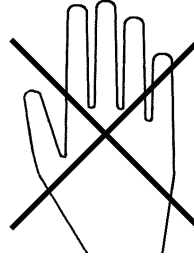
- **Always** read the technical data thoroughly (see page 20).
- **Always** release compressed air after use.

NOTE!

We cannot be held responsible for incorrect operation.

2

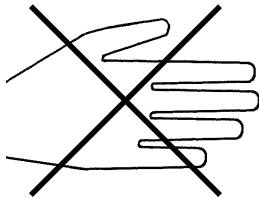
Burning danger!



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

3

Moving parts!



Never touch the clip assembly or the actuator piston rod if the actuator is supplied with compressed air.

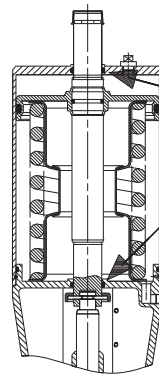
4

CAUTION!

It is recommended **not** to re-use diaphragm (20b) after dismantling (risk of damage and leakage).

5

6



Lubricate if necessary!
(see page 13)

TD 425-054

NOTE!

It is recommended **not** to use the valve under vacuum as there will be no visual leakage indication.

Lubrication of actuator

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

Pay attention to possible faults.

Study the instructions carefully.

The items refer to the drawings and the parts list on pages 22-29.

2. Fault finding

10

NOTE!

Study the maintenance instructions carefully before replacing worn parts. - See page 12!

Problem	Cause/result	Repair
The valve plug jerks	The seals seize	Lubricate: - O-rings (2) - O-ring (6) and the inside of cylinder (3)
Product leakage at stem and/or clamp	Worn/product affected diaphragm stem seal and/or seal ring (17)	- Replace the seals - Select a different rubber grade
Product leakage (closed valve)	- Worn/product affected plug seal ring - Loose plug parts (vibrations) - Product deposits on the seat and/or plug	- Replace the seal ring - Select a different rubber grade - Tighten the loose parts - Frequent cleaning
Product leakage (too high pressure or too small actuator)	- Worn actuator O-rings - Too small actuator or actuator spring	- Replace the O-rings - Select a larger actuator - Fit a stronger spring - Use auxiliary air on the spring side (NOT-element)
Water hammer	The flow direction is the same as the closing direction	- The flow direction should be against the closing direction - Fit a damper on the valve (optional extra) - Use auxiliary air on the spring side (NOT-element)
The valve does not open/close	- Faulty clip assembly (11) - The pressure on the plug is too high	- Replace the clip assembly - Reduce the pressure - Fit stronger spring/larger actuator

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.

3. Recommended cleaning

1 Caustic danger!



Always use rubber gloves!



Always use protective goggles!



Always handle lye and acid with great care.

3

Clean the plug and the seats correctly.

- Stop valve: Open it.
- Change-over valve: Lift and lower momentarily (flip).

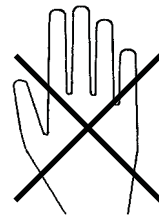
Pay special attention to the warnings!

5

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!**
3. **Always** rinse well with clean water after the cleaning.

2

Burning danger!



Never touch the valve or the pipelines when sterilizing.

4

Examples of cleaning agents:

Use clean water, free from chlorides.

1. 1% by weight NaOH at 70° C.

1 kg NaOH	+	100 l water	= Cleaning agent.
--------------	---	----------------	-------------------

2.2 l 33% NaOH	+	100 l water	= Cleaning agent.
-------------------	---	----------------	-------------------

2. 0.5% by weight HNO₃ at 70° C.

0.7 l 53% HNO ₃	+	100 l water	= Cleaning agent.
-------------------------------	---	----------------	-------------------

6

NOTE!

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

Maintenance

Maintain the valve carefully.
Study the instructions carefully and pay special attention to the warnings!

Always keep spare rubber seals and diaphragms in stock.

1. General maintenance

1



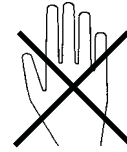
- **Always** read the technical data thoroughly (see page 20).
- **Always** release compressed air after use.

NOTE!

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

2

Burning danger!



Atmospheric pressure required!



- **Never** service the valve when it is hot.
- **Never** service the valve with valve and pipelines under pressure.

3

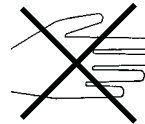
Cutting danger!



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

4

Moving parts!



- **Never** touch the clip assembly or the actuator piston rod if the actuator is supplied with compressed air.

Ordering spare parts

- Contact the Sales Department.
- Order from the Spare Parts List.

Recommended spare parts: Service kits (see Spare Parts List).

Maintain the valve carefully.
Study the instructions carefully.

Always keep spare rubber seals and diaphragms in stock.
Check the valve for smooth operation after service.

1. General maintenance

	Valve diaphragm unit	Valve rubber seals	Actuator rubber seals
Preventive maintenance	Replace after 12 months (depending on working conditions)	Replace when replacing the diaphragms	Replace after 5 years
Maintenance after leakage (leakage normally starts slowly)	Replace at the end of the day	Replace when replacing the diaphragms	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 diaphragms	<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 air 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!

Maintenance

14

Study the instructions carefully.
The items refer to the drawings and the parts list on pages 22-29.

Handle scrap correctly.
NC = Normally closed.
NO = Normally open.
A/A = Air/air activated.

2. Dismantling of valve

1

NC actuator:

1. Remove clip assembly (11).
2. Supply compressed air to the actuator.
3. Remove upper clamp (15).
4. Remove the actuator.
5. Release compressed air.

Pay special attention to the warnings!

3

1. Remove clamp (15).
2. Remove intermediate ring (13).

5

Remove the complete diaphragm/stem unit from valve body (16 or 18).

2

NO actuator:

1. Remove upper clamp (15).
2. Supply compressed air to the actuator.
3. Remove clip assembly (11).
3. Remove the actuator.
5. Release compressed air.

Pay special attention to the warnings!

4

Change-over valve:

1. Remove lower clamp (15).
2. Dismantle upper and lower valve bodies (16, 18).
3. Remove seal ring (17).

6

Stop valve:

Remove washer (14) from upper stem (19).

Study the instructions carefully.
The items refer to the drawings and the parts list on pages 22-29.

Handle scrap correctly.
NC = Normally closed.
NO = Normally open.
A/A = Air/air activated.

2. Dismantling of valve

7

Turn upper stem (19) anticlockwise and remove it from lower stem (22a), (counterhold with a spanner).

9

Change-over valve:

Remove lower stem (22a) from upper valve body (16).

11

Stop valve:

1. Remove screw (22g), O-ring (22f) and washer (22e) from lower stem (22a).
2. Remove seal (22d) from the stem.

8

1. Remove diaphragm (20a), diaphragm (20b) and stem seal (20d) from lower stem (22a).
2. Remove L-seal (20c) from diaphragm (20b).

10

Change-over valve:

1. Remove screw (22g), O-ring (22f) and washer (22e) from lower stem (22a).
2. Remove seal (22d), middle piece (22c) and seal (22b) from the stem.

Maintenance

Study the instructions carefully.
The items refer to the drawings and the parts list on pages 22-29.

Lubricate the rubber seals and the diaphragms before fitting them.

3. Reassembly of valve

1

Stop valve:

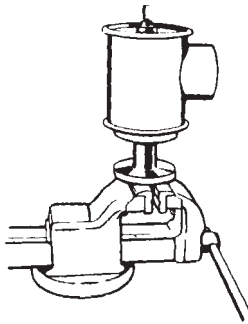
1. Fit seal (22d) on lower stem (22a).
2. Fit washer (22e), O-ring (22f) and screw (22g) on the stem (use Loctite 243 or similar!).

2

Change-over valve:

1. Fit seal (22b), middle piece (22c) and seal (22d) on lower stem (22a).
2. Fit washer (22e), O-ring (22f) and screw (22g) on the stem (use Loctite 243 or similar!).

3



4



Change-over valve:

Fit lower stem (22a) in upper valve body (16) so that the stem flange contacts the bottom of the valve body.

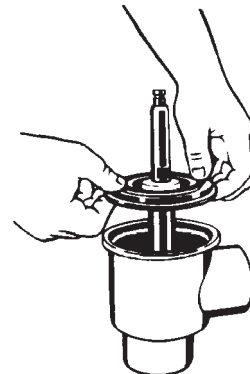
1. Fit L-seal (20c) on diaphragm (20b).
2. Fit stem seal (20d), diaphragm (20b) and diaphragm (20a) on lower stem (22a).

5



1. Apply Loctite 243 or similar on the thread of lower stem (22a).
2. Fit upper stem (19) on the lower stem, turn it clockwise and tighten until there is metallic contact between the upper and lower stems (counterhold with a spanner!).

6



Stop valve:

Fit washer (14) on upper stem (19).

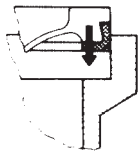
Study the instructions carefully.
The items refer to the drawings and the parts list on pages 22-29.

Lubricate the rubber seals and the diaphragms before fitting them.

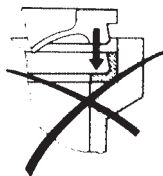
3. Reassembly of valve

7

Correct!



Wrong!

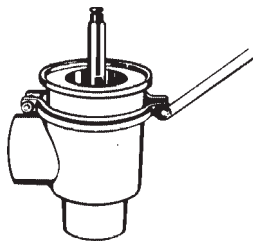


Fit the complete diaphragm/stem unit in valve body (16 or 18).

NOTE!

Ensure that L-seal (20c) is fitted on diaphragm (20b) before placing the diaphragm unit in the valve body.

9



1. Fit intermediate ring (13) on valve body (16 or 18).
2. Fit and tighten clamp (15).

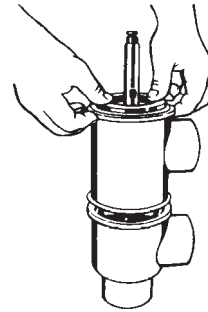
11

NC actuator:

1. Supply compressed air to the actuator.
2. Fit the plastic ring of clip assembly (11) on the actuator piston rod.
3. Fit the actuator on valve body (16 or 18) so that upper stem (19) enters the actuator piston rod.
4. Fit and tighten upper clamp (15).
5. Release compressed air.
6. Fit and assemble clip assembly (11).

Pay special attention to the warnings!

8



Change-over valve:

1. Fit seal ring (17), (Turn it with the diagonal surface upwards!) in lower valve body (18).
2. Fit upper valve body (16) and the complete diaphragm/stem unit together with the lower valve body.
3. Fit and tighten lower clamp (15).

10

NO actuator:

1. Fit the plastic ring of clip assembly (11) on the actuator piston rod.
2. Supply compressed air to the actuator.
3. Fit the actuator on valve body (16 or 18) so that upper stem (19) enters the actuator piston rod.
4. Fit and assemble clip assembly (11).
5. Release compressed air.
6. Fit and tighten upper clamp (15).

Pay special attention to the warnings!

Maintenance

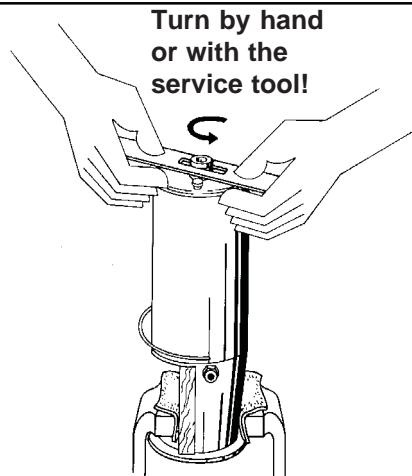
18

Study the instructions carefully.
The items refer to the drawings and the parts list on pages 22-29.

Handle scrap correctly.
A/A = Air/air activated.

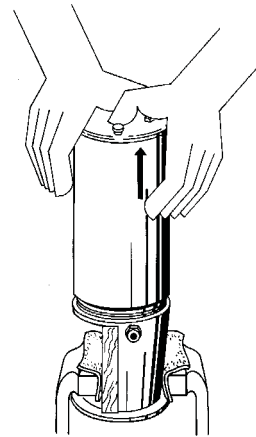
4. Dismantling of actuator

1



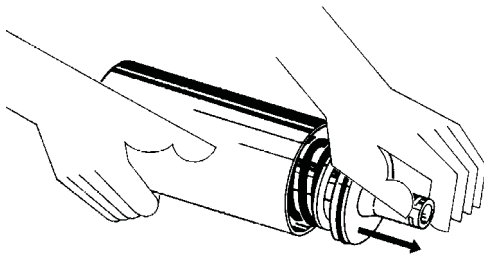
1. Turn cylinder (3).
2. Remove lock wire (4).

2



1. Remove cylinder (3).
2. Remove O-rings (2, 7) from bonnet (8).

3

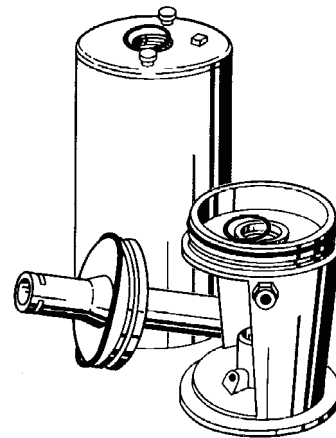


1. Remove piston (6) and spring assembly (10).
2. Remove O-ring (5) from the piston.
3. Remove O-ring (2) from cylinder (3).

NOTE!

The A/A actuator has no spring assembly.

4

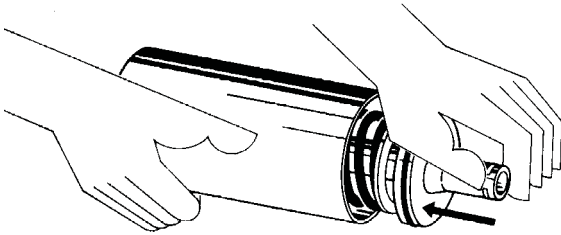


Replace the rubber seals.

Study the instructions carefully.
The items refer to the drawings and the parts list on pages 22-29.
Lubricate the rubber seals before fitting them.

5. Reassembly of actuator

1

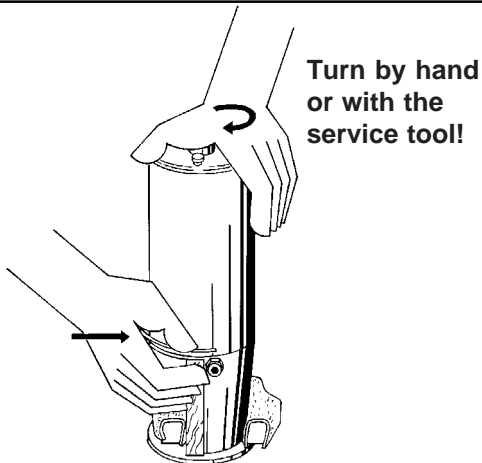


1. Fit O-ring (2) in cylinder (3).
2. Fit O-ring (5) on piston (6).
3. Fit the piston and spring assembly (10).

NOTE!

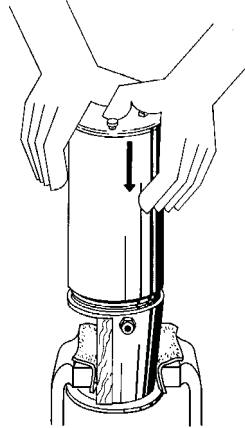
The A/A actuator has no spring assembly.

3



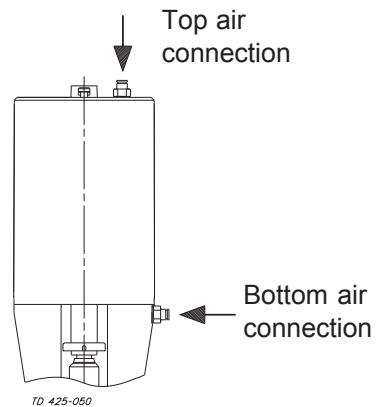
1. Fit lock wire (4) through the slot in cylinder (3) into the hole in bonnet (8).
2. Turn the cylinder 360° (see 4).

2



1. Fit O-rings (2, 7) in bonnet (8).
2. Fit cylinder (3).

4



NOTE!

It is recommended to turn cylinder (3) further 180° in relation to bonnet (8) so that the top and bottom air connections are fixed on the same side.

Technical data

It is important to observe the technical data during installation, operation and maintenance.

*Inform the personnel about the technical data.
NO = Normally open
NC = Normally closed*

1. Technical data

20

Data - valve/actuator

Max. product pressure (max. 80° C)	800kPa (8bar)
Min. product pressure	Full vacuum (see instruction 5 on page 9)
Temperature range	-10°C to + 140°C (EPDM)
Max. sterilization temperature (max. 385kPa)	150°C (steam)
Expected normal life of diaphragm unit	5000 activations
(depending on working conditions)	(equivalent to 1 year of operation (1500 h))
Air pressure, actuator	500 to 600kPa (5 to 6 bar)
	Max. 700kPa (7 bar)

Materials - valve/actuator

Product wetted steel parts	AISI 316L
Other steel parts	AISI 304
Product wetted seals	EPDM (standard)
Product wetted diaphragm	PTFE
Support diaphragm	EPDM reinforced
Other seals	Nitrile (NBR)
Alternative product wetted seals	Nitrile (NBR) and Fluorinated rubber (FPM)
Finish	Semi bright

Noise

One meter away from - and 1.6 meter 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 bars air-pressure.

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.



Drawing/Parts list

The drawings and the parts list include all items.
 NO = Normally open.
 NC = Normally closed.

The items are identical with the items in the Spare Parts List.
 When ordering spare parts, please use the Spare Parts List!

Parts list ARC with reduced stroke, stop valve

22

Item	Qty.	Denomination
1	1	Cap
2Δ	2	O-ring
3	1	Cylinder
4Δ	1	Lock wire
5Δ	1	O-ring
6	1	Piston
7Δ	1	O-ring
8	1	Bonnet
9	2	Plug
10◆	1	Spring assembly (standard, black) Extra strong spring (alternative, white)
11Δ	1	Clip, complete
12	1	Drain tube
13	1	Intermediate piece
14	1	Washer
15	1	Clamp and screws
16	1	Valve body, upper
17Δ	1	Seal ring (change-over valve)
18	1	Valve body, lower
19	1	Stem, upper
20Δ	1	Diaphragm set
20a	1	Diaphragm support
20b	1	Diaphragm
20c	1	L-seal
20d	1	Stem seal
22	1	Plug, single, compl.
a	1	Stem, lower
b Δ	1	Seal
c	1	Middle piece
d Δ	1	Seal
e	1	Washer
f Δ	1	O-ring
g	1	Screw
23	1	Mounting bracket complete
a	1	Activation ring
b	1	Mounting bracket
c	2	Screw

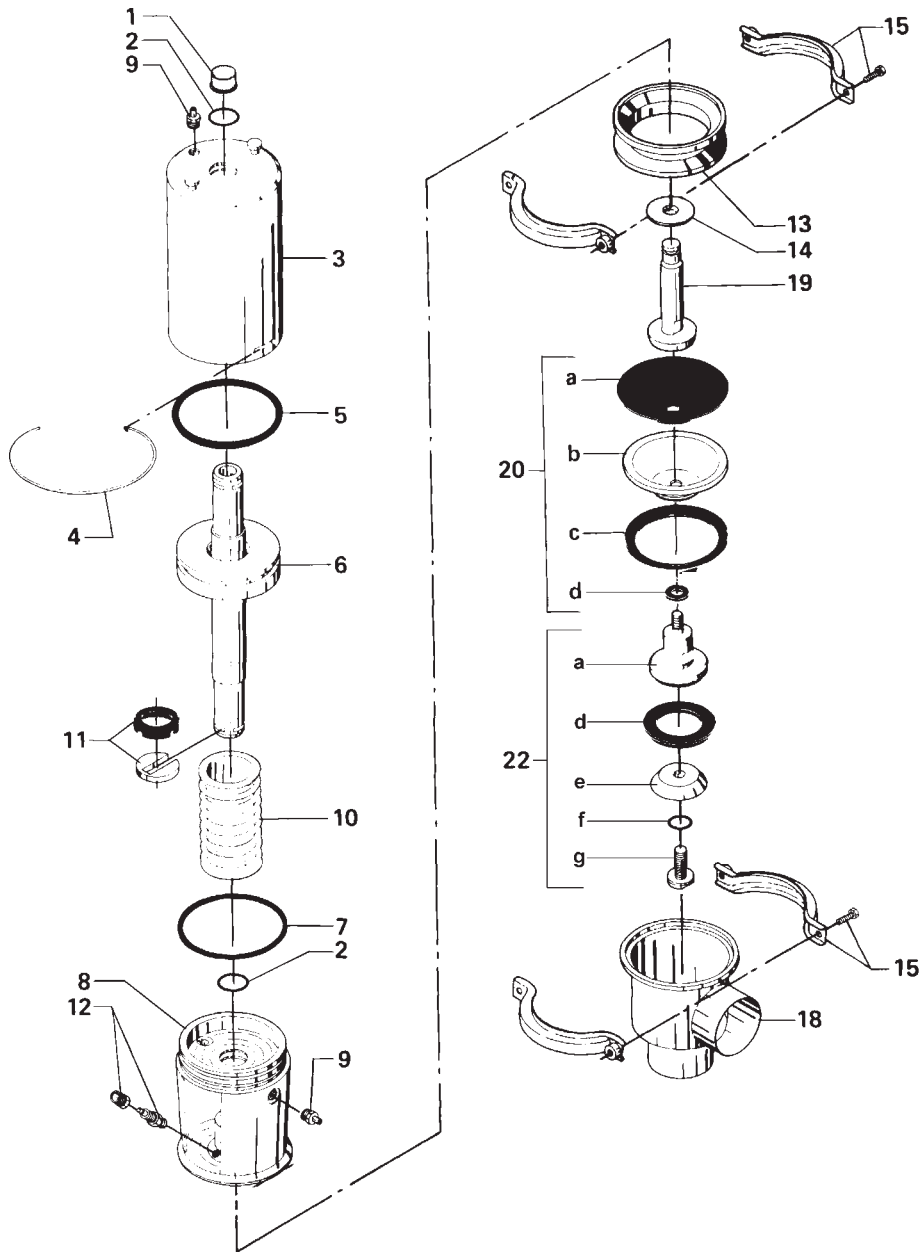
Δ : Service kit - EPDM, NBR, FPM
 (See Spare Parts List)

◆ : Only for NO- and NC actuators

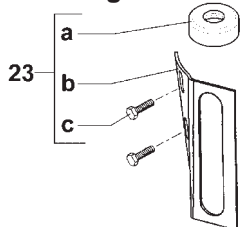
This page shows an exploded drawing of ARC with reduced stroke, stop valve.

The drawing includes all items of the valve. They are identical with the items in the Spare Parts List

Exploded drawing



Mounting bracket



Drawing/Parts list

The drawings and the parts list include all items.
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 NC = Normally closed.

The items are identical with the items in the Spare Parts List.
 When ordering spare parts, please use the Spare Parts List!

Parts list ARC with reduced stroke, stop valve

24

Item	Qty.	Denomination
1	1	Cap
2Δ	2	O-ring
3	1	Cylinder
4Δ	1	Lock wire
5Δ	1	O-ring
6	1	Piston
7Δ	1	O-ring
8	1	Bonnet
9	2	Plug
10◆	1	Spring assembly (standard, black) Extra strong spring (alternative, white)
11Δ	1	Clip, complete
12	1	Drain tube
13	1	Intermediate piece
14	1	Washer
15	1	Clamp and screws
16	1	Valve body, upper
17Δ	1	Seal ring (change-over valve)
18	1	Valve body, lower
19	1	Stem, upper
20Δ	1	Diaphragm set
20a	1	Diaphragm support
20b	1	Diaphragm
20c	1	L-seal
20d	1	Stem seal
22	1	Plug, single, compl.
a	1	Stem, lower
b Δ	1	Seal
c	1	Middle piece
d Δ	1	Seal
e	1	Washer
f Δ	1	O-ring
g	1	Screw
23	1	Mounting bracket complete
a	1	Activation ring
b	1	Mounting bracket
c	2	Screw

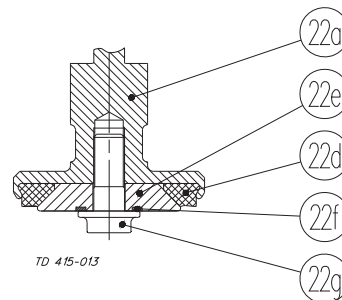
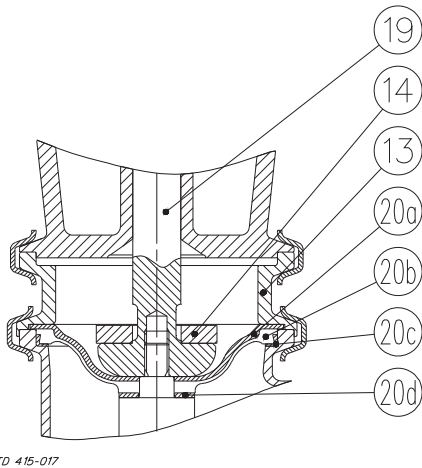
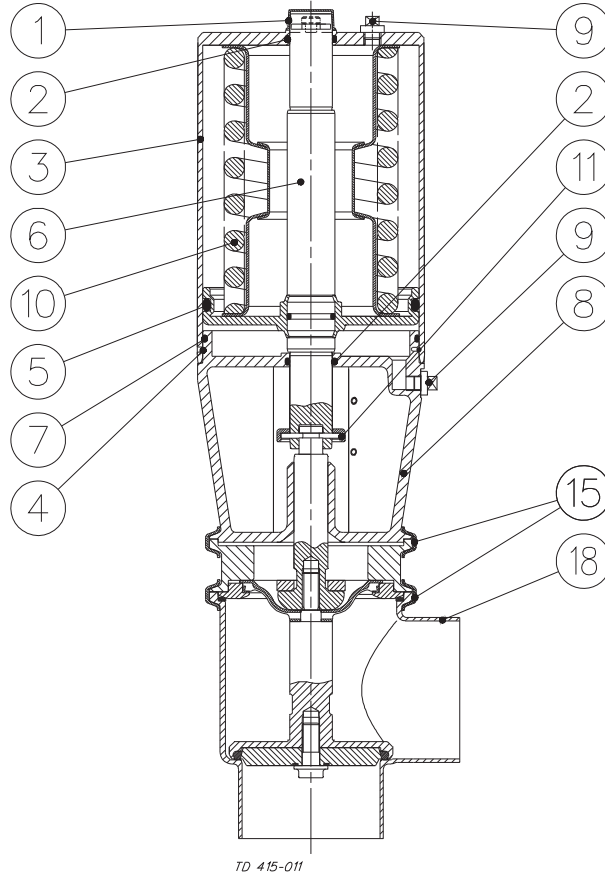
Δ : Service kit - EPDM, NBR, FPM
 (See Spare Parts List)

◆ : Only for NO- and NC actuators

The drawings below show ARC with reduced stroke, stop valve.

The items refer to the parts list on the opposite part of the page.

Drawings



Drawing/Parts list

The drawings and the parts list include all items.
NO = Normally open.
NC = Normally closed.

The items are identical with the items in the Spare Parts List.
When ordering spare parts, please use the Spare Parts List!

Parts list ARC with reduced stroke, change-over valve

26

Item	Qty.	Denomination
1	1	Cap
2Δ	2	O-ring
3	1	Cylinder
4Δ	1	Lock wire
5Δ	1	O-ring
6	1	Piston
7Δ	1	O-ring
8	1	Bonnet
9	2	Plug
10◆	1	Spring assembly (standard, black) Extra strong spring (alternative, white)
11Δ	1	Clip, complete
12	1	Drain tube
13	1	Intermediate piece
14	1	Washer
15	1	Clamp and screws
16	1	Valve body, upper
17Δ	1	Seal ring (change-over valve)
18	1	Valve body, lower
19	1	Stem, upper
20Δ	1	Diaphragm set
20a	1	Diaphragm support
20b	1	Diaphragm
20c	1	L-seal
20d	1	Stem seal
22	1	Plug, single, compl.
a	1	Stem, lower
b Δ	1	Seal
c	1	Middle piece
d Δ	1	Seal
e	1	Washer
f Δ	1	O-ring
g	1	Screw
23	1	Mounting bracket complete
a	1	Activation ring
b	1	Mounting bracket
c	2	Screw

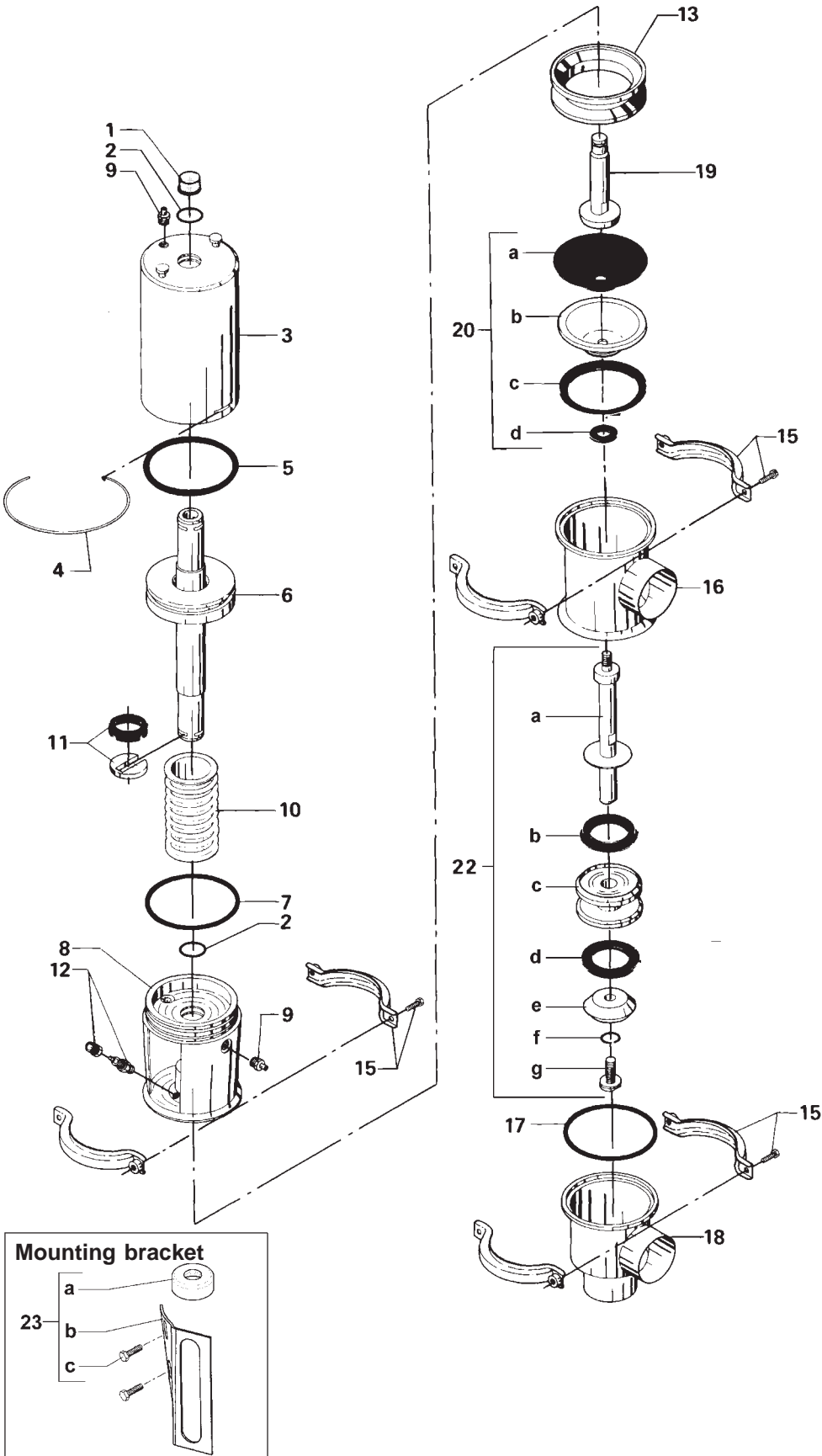
Δ : Service kit - EPDM, NBR, FPM
(See Spare Parts List)

◆ : Only for NO- and NC actuators

This page shows an exploded drawing of ARC with reduced stroke, change-over valve.

The drawing includes all items of the valve. They are identical with the items in the Spare Parts List.

Exploded drawing



Drawing/Parts list

The drawings and the parts list include all items.
 NO = Normally open.
 NC = Normally closed.

The items are identical with the items in the Spare Parts List.
 When ordering spare parts, please use the Spare Parts List!

Parts list ARC with reduced stroke, change-over valve

28

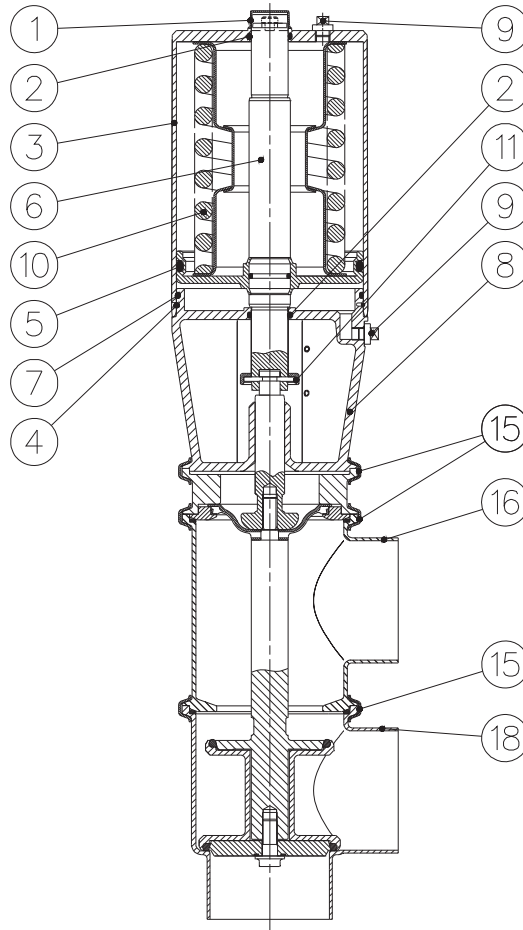
Item	Qty.	Denomination
1	1	Cap
2Δ	2	O-ring
3	1	Cylinder
4Δ	1	Lock wire
5Δ	1	O-ring
6	1	Piston
7Δ	1	O-ring
8	1	Bonnet
9	2	Plug
10◆	1	Spring assembly (standard, black) Extra strong spring (alternative, white)
11Δ	1	Clip, complete
12	1	Drain tube
13	1	Intermediate piece
14	1	Washer
15	1	Clamp and screws
16	1	Valve body, upper
17Δ	1	Seal ring (change-over valve)
18	1	Valve body, lower
19	1	Stem, upper
20Δ	1	Diaphragm set
20a	1	Diaphragm support
20b	1	Diaphragm
20c	1	L-seal
20d	1	Stem seal
22	1	Plug, single, compl.
a	1	Stem, lower
b Δ	1	Seal
c	1	Middle piece
d Δ	1	Seal
e	1	Washer
f Δ	1	O-ring
g	1	Screw
23	1	Mounting bracket complete
a	1	Activation ring
b	1	Mounting bracket
c	2	Screw

- Δ : Service kit - EPDM, NBR, FPM
(See Spare Parts List)
- ◆ : Only for NO- and NC actuators

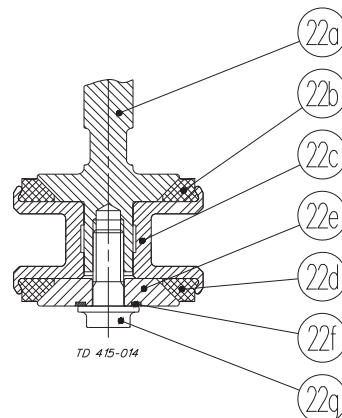
The drawings below show ARC with reduced stroke, change-over valve.

The items refer to the parts list on the opposite part of the page.

Drawings



TD 415-012



TD 415-014

Drawing/Parts list

The drawings and the parts list include all items.
NO = Normally open.
NC = Normally closed.

The items are identical with the items in the Spare Parts List.
When ordering spare parts, please use the Spare Parts List!

Parts list

Oil damper for ARC with reduced stroke (optional extra)

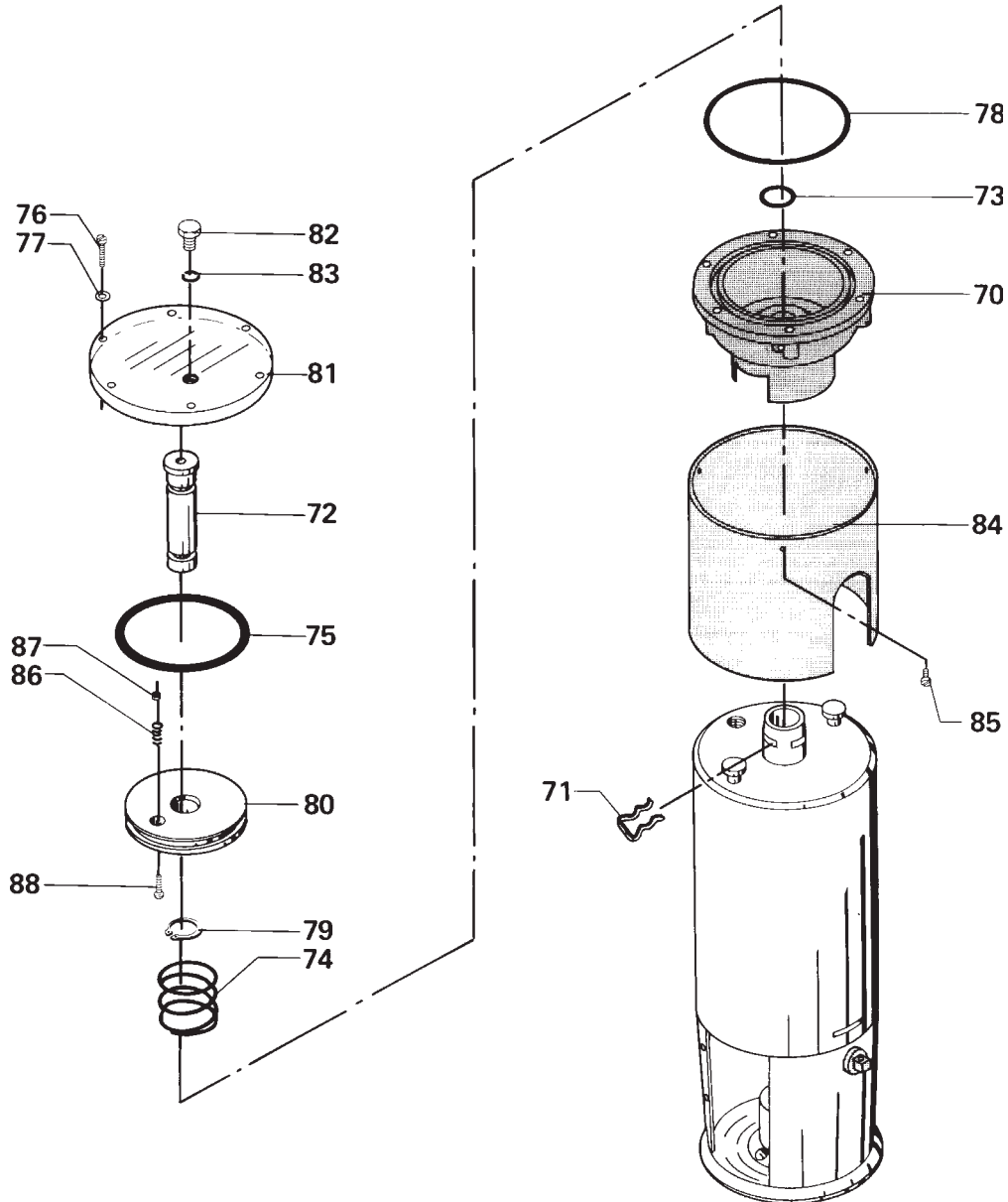
30

Item	Qty.	Denomination
70	1	Housing
71	1	Clip
72	1	Piston rod
73	1	O-ring
74	1	Spring
75	1	O-ring
76	6	Screw
77	6	Washer
78	1	O-ring
79	1	Circlip
80	1	Piston
81	1	Cover
82	1	Plug
83	1	O-ring
84	1	Protective hood
85	3	Screw
86	1	Spring
87	1	Nut
88	1	Screw

This page shows an exploded drawing of the oil damper for ARC with reduced stroke. The damper is an optional extra.

The drawing includes all items of the valve. They are identical with the items in the Spare Parts List.

Exploded drawing



Drawing/Parts list

The drawings and the parts list include all items.
NO = Normally open.
NC = Normally closed.

The items are identical with the items in the Spare Parts List.
When ordering spare parts, please use the Spare Parts List!

Parts list

Oil damper for ARC with reduced stroke (optional extra)

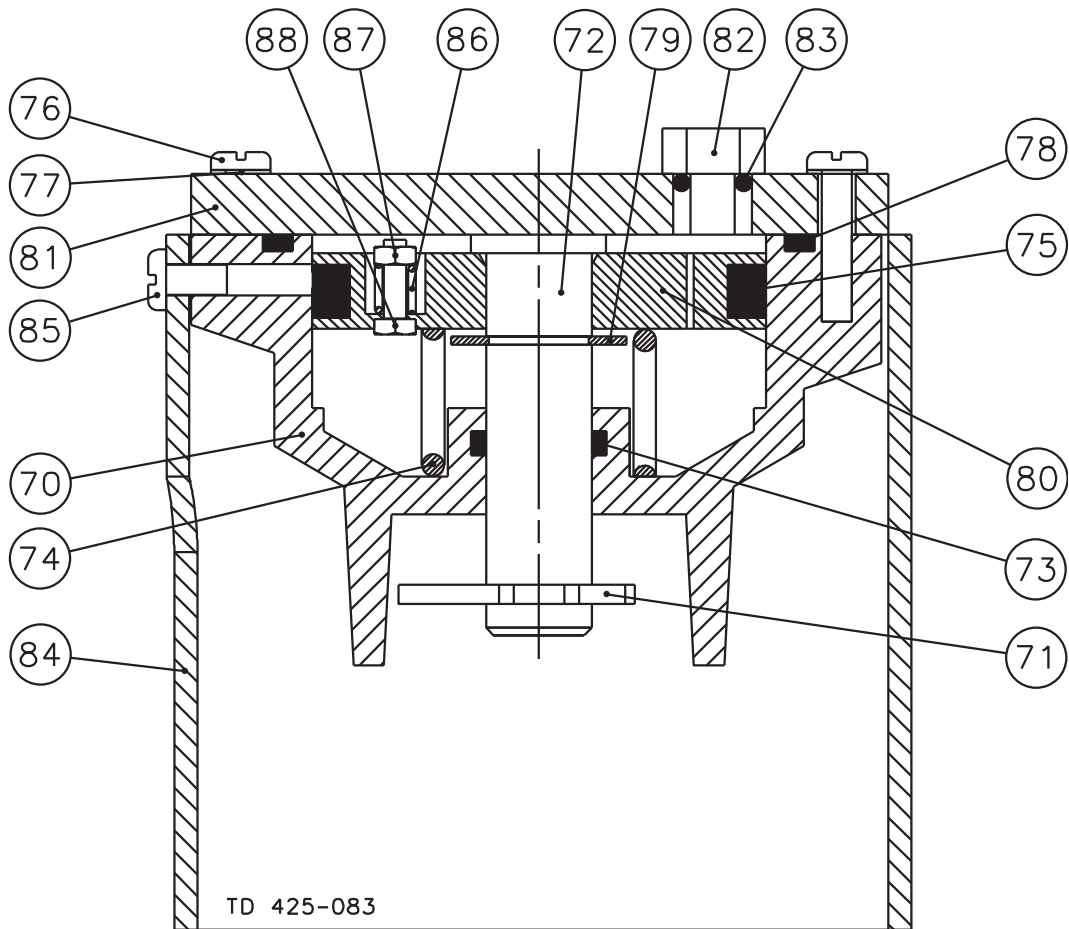
32

Item	Qty.	Denomination
70	1	Housing
71	1	Clip
72	1	Piston rod
73	1	O-ring
74	1	Spring
75	1	O-ring
76	6	Screw
77	6	Washer
78	1	O-ring
79	1	Circlip
80	1	Piston
81	1	Cover
82	1	Plug
83	1	O-ring
84	1	Protective hood
85	3	Screw
86	1	Spring
87	1	Nut
88	1	Screw

The drawing below shows the oil damper for ARC with reduced stroke.
The damper is an optional extra.

The items refer to the parts list on the opposite part of the page.

Drawing



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 direct.