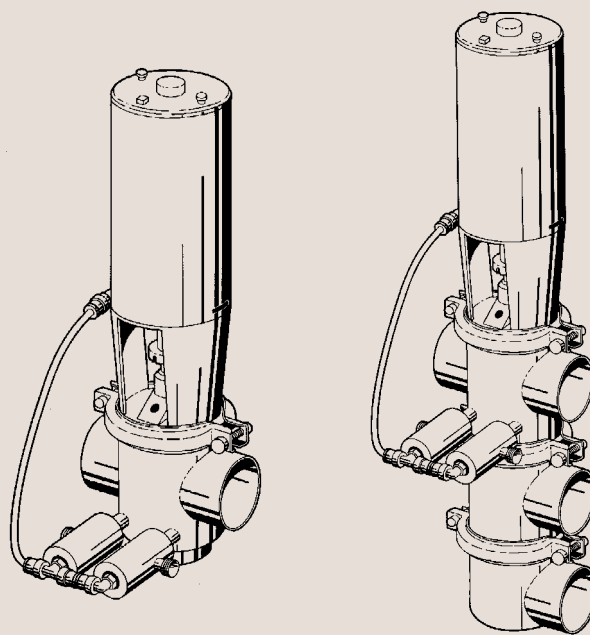




Instruction Manual

SMP-BC Sanitary Mixproof Valve



Declaration of Conformity

The designating company

Alfa Laval

Company Name

6000 Kolding

Address

+45 79 32 22 00

Phone No.

hereby declare that

Sanitary Mixproof Valve

Denomination

SMP-BC

Type

Year

Was manufactured in conformity with the provisions in the COUNCIL DIRECTIVE of 14 June 1989 on mutual approximation of the laws of the Member States on the safety of machines (89/392/EEC as amended by directives 91/368/EEC and 93/44/EEC) with special reference to Annex 1 of the directive on essential safety and health requirements in relation to the construction and manufacture of machines.

Bjarne Søndergaard

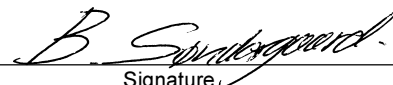
Name

Vice President, R & D

Title

Alfa Laval

Company



Signature

Designation



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

Safety

1. Important information 2
2. Warning signs 2
3. Safety precautions 3

Installation

1. Unpacking/Delivery 4
2. Recommended auxiliary equipment (DN125/150) 5
3. General installation 6
4. Welding 7

Operation

1. Operation 8
2. Fault finding 8
3. Recommended cleaning 9
4. Cleaning equipment (optional extra) 11

Maintenance

1. General maintenance 13
2. Dismantling of valve 15
3. Reassembly of valve 16
4. Dismantling of actuator 17
5. Reassembly of actuator 18
6. Replacement of plug seals 19

Technical data

1. Technical data 21

Drawings/Parts list

1. Parts list
 - SMP-BC 22+24+26+28
 - SMP-BC, DN125 and DN150 30+32
 - Tool for plug seals 34+36
2. Exploded drawing
 - SMP-BC 23+27
 - SMP-BC, DN125 and DN150 31
 - Tool for plug seals 35
3. Drawing/Parts list
 - SMP-BC 25+29
 - SMP-BC, DN125 and DN150 33
 - Tool for plug seals 37

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!

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.

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 21).
- **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** stick your fingers through the valve ports if the actuator is supplied with compressed air.



Operation:



- : - **Always** read the technical data thoroughly (see page 21).
- **Always** release compressed air after use.
- **Never** touch the clip assembly or the actuator piston rod when the actuator is supplied with compressed air.



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



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



- : - **Always** keep the cleaning pressure lower than the product pressure.
- **Never** throttle the outlet of the detecting valve.

Maintenance:



- : - **Always** read the technical data thoroughly (see page 21).
- **Always** release compressed air after use.
- **Always** remove the CIP connections before service.



- : - **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

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

Stop valve: With one valve body.
Change-over valve: With three valve bodies.
CIP = Cleaning In Place (see page 9).

1. Unpacking/Delivery

1

CAUTION!

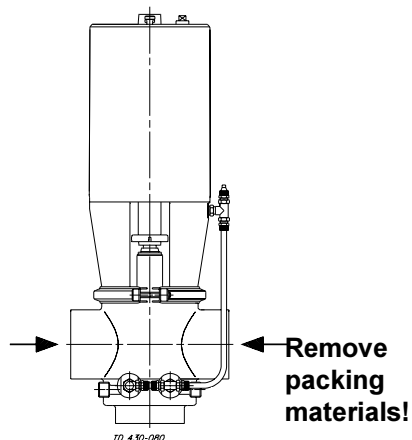
We cannot be held responsible for incorrect unpacking.

2

Check the delivery for:

1. Complete valve, stop valve or change-over valve.
2. Delivery note.
3. Instruction manual.

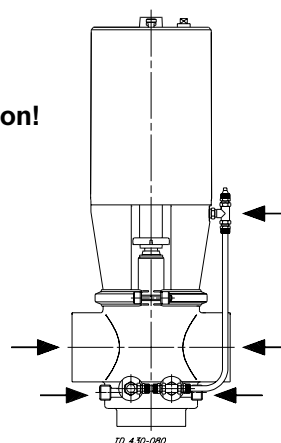
3



Remove possible packing materials from the valve ports.

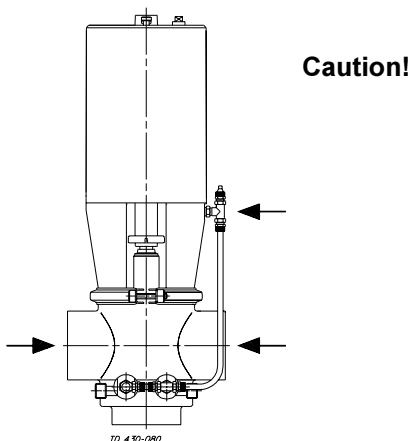
4

Inspection!



Inspect the valve for visible transport damage.

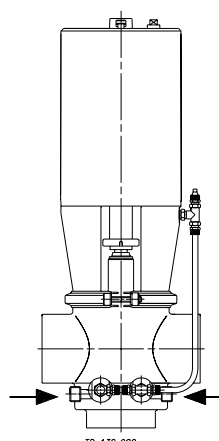
5



Avoid damaging the air connection and the valve ports.

6

Caution!



Avoid damaging the detecting valve and the CIP valve.

The valve sizes DN125-150 are very heavy. Therefore Alfa Laval recommends manufacturing and usage of auxiliary equipment. A proposal is given below.

Please note that the auxiliary equipment **cannot** be supplied by Alfa Laval. The item refers to the drawings and parts list on pages 30-33.

2. Recommended auxiliary equipment (DN125/150)

1

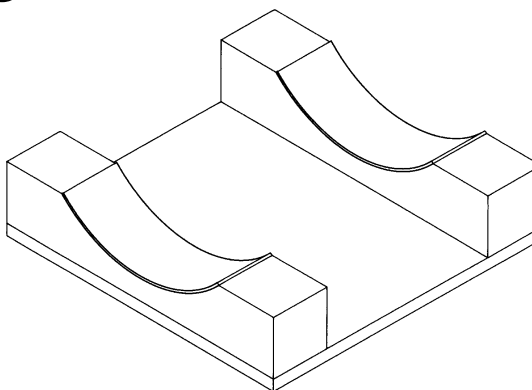
For lifting the valve:

Screw an eye bolt (6 mm) into top pin (10). Using a small hook crane or similar, lift the valve by the eye bolt.

Trestle:

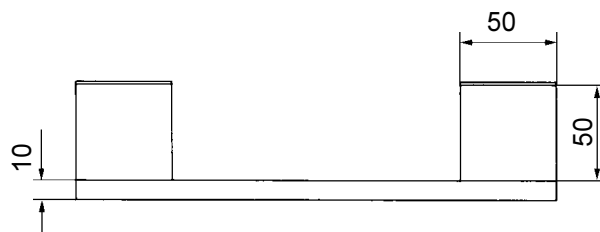
- The purpose of the trestle is to support the valve during dismantling and reassembly.
- The trestle is made of a base plate, two support plates, two rubber linings and four bolts.
- The rubber linings are attached to the support plates so that the valve/actuator will rest on these.
- To prevent the valve from turning during dismantling and reassembly the trestle must be made with the correct measurements (see 3, 4 and 5). All measurements are in mm.

2



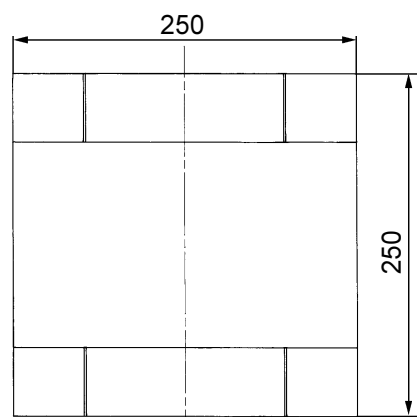
Trestle

3



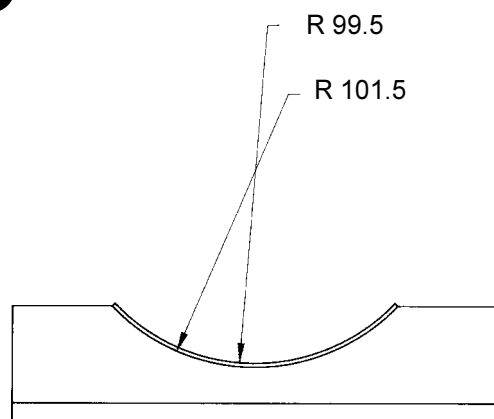
Side view

4



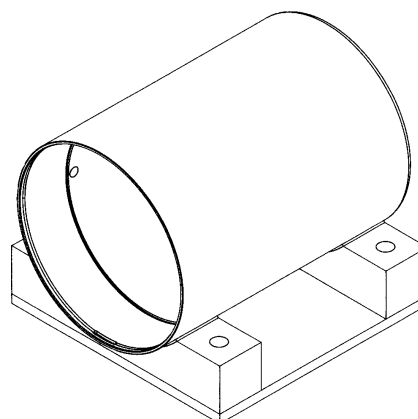
Top view

5



End view

6



1. Place the valve in the trestle.
2. Make sure that the actuator rests on the rubber linings on the trestle support plates.
3. Dismantle/reassemble the valve.

Installation

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.
CIP = Cleaning In Place (see page 9).

3. General installation

1



- **Always** read the technical data thoroughly (see page 21).
- **Always** release compressed air after use.
- **Never** touch the clip assembly or the actuator piston rod if the actuator is supplied with compressed air.

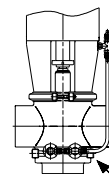
CAUTION!

We cannot be held responsible for incorrect installation.

2

Stop valve

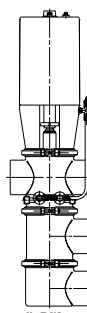
Change-over valve



Inlet

Ensure self-draining!

Avoid water hammer!



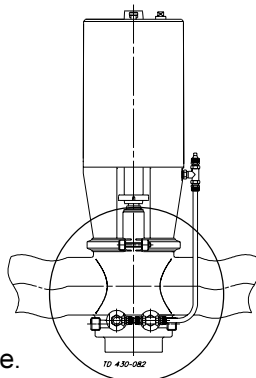
Inlet

Install the valve so that:

- The actuator is turned to the uppermost point.
- The detecting valve is self-draining.
- The flow is against the closing direction to avoid water hammer.

3

Risk of damage!

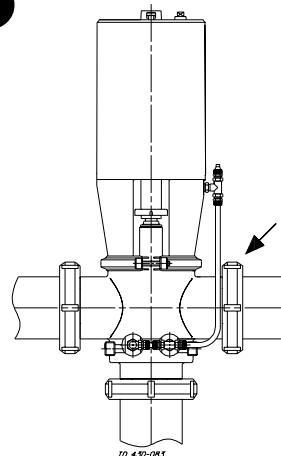


Avoid stressing the valve.

Pay special attention to:

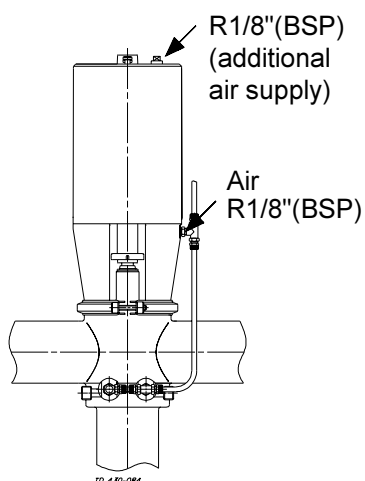
- Vibrations.
- Thermal expansion of the tubes.
- Excessive welding.
- Overloading of the pipelines.

4



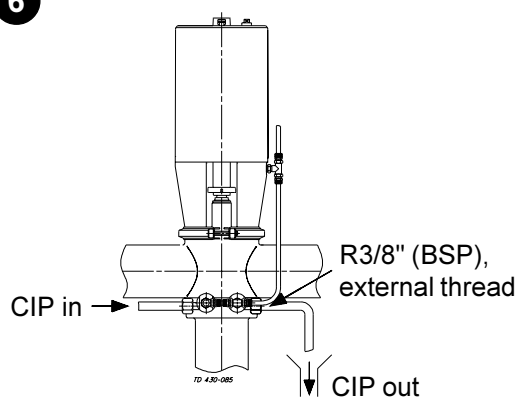
Remember seal rings!

5



Air connection:

6



CIP connection:

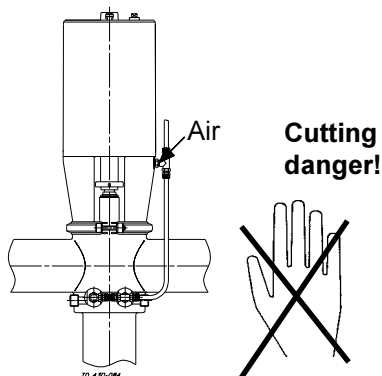
1. See the description of cleaning and optional extras on page 9-12.
2. Connect CIP correctly.

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

The valve has welding ends as standard.
Weld carefully.
Check the valve for smooth operation after welding.

4. Welding

1



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

3

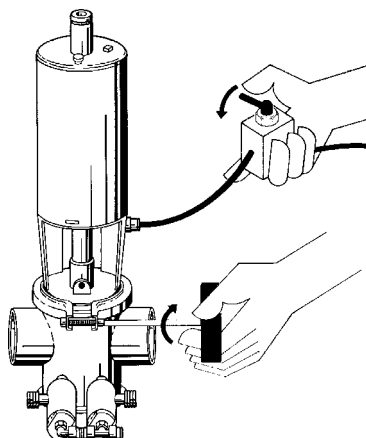
NOTE!

Always weld the valve body into the pipelines so that the valve body seal rings 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 parts can be removed.

Valve size	A (mm)	B ₁ (mm)	B ₂ (mm)
DN40/38 mm	280	550	730
DN50/51 mm	305	550	730
DN65/63.5 mm	360	550	730
DN80/76 mm	410	600	780
DN100/101.6 mm	470	650	830
DN125	-	750	930
DN150	-	790	970

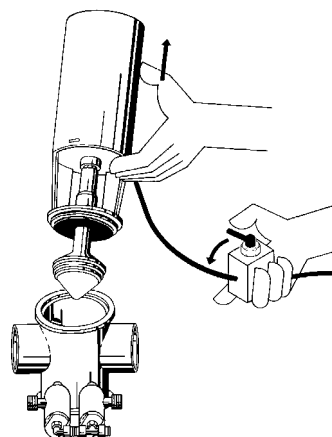
5



Reassemble the valve in accordance with instructions 4-6 on page 16.

Pay special attention to the warnings!

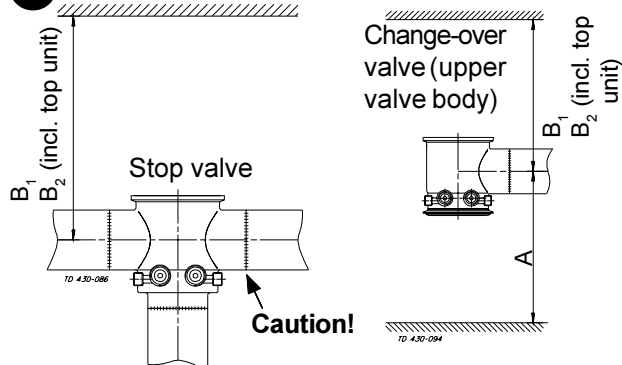
2



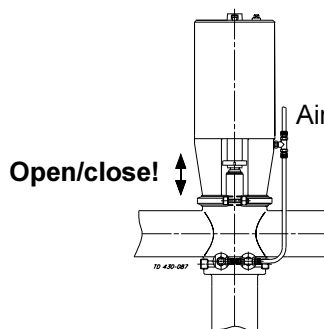
Dismantle the valve in accordance with instructions 1-3 on page 14.

Pay special attention to the warnings!

4



6



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!

Operation

The valve is adjusted and tested before delivery.
Study the instructions carefully and pay special attention to the warnings!

Pay attention to possible faults.
The items refer to the drawings and parts list on pages 22-33.
CIP = Cleaning In Place (see page 9).

1. Operation

1

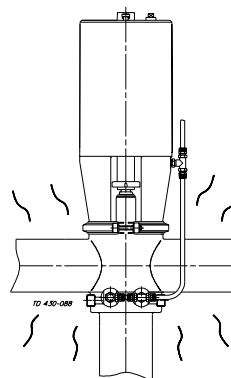


- **Always** read the technical data thoroughly (see page 21).
- **Always** release compressed air after use.
- **Never** touch the clip assembly or the actuator piston rod when the actuator is supplied with compressed air.

CAUTION!

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.

2. Fault finding

NOTE!

Study the maintenance instructions carefully before replacing worn parts. - See page 13!

Problem	Cause/result	Possible solution
Product leakage through the detecting valve (closed valve)	<ul style="list-style-type: none"> - Worn seal rings - The two seal rings affected by different products - Incorrect fitting of seal rings - Product deposits on the seat and/or plug 	<ul style="list-style-type: none"> - Replace the seal rings - Select a different rubber grade - Frequent cleaning
Product leakage through the detecting valve (open valve)	<ul style="list-style-type: none"> - Worn O-ring (26a) - Worn spindle (26d) - Product deposits on the seat and/or plug 	<ul style="list-style-type: none"> - Replace the O-ring - Replace the spindle - Frequent cleaning
Product leakage at stem and/or clamp	Worn/product affected lip seal (22a) and/or seal rings (22c, 27)	<ul style="list-style-type: none"> - Replace the seal rings - Select a different rubber grade
Product leakage through middle or lower valve body (closed lower plug)	<ul style="list-style-type: none"> - Worn/product affected plug seal ring - Loose parts (vibrations) - Product deposits on the seat and/or plug 	<ul style="list-style-type: none"> - Replace the seal ring - Select a different rubber grade - Tighten the loose parts - Frequent cleaning
<ul style="list-style-type: none"> - Air leakage through the CIP and detecting valve - Air leakage at the actuator 	Worn seal rings	Replace the seal rings

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!

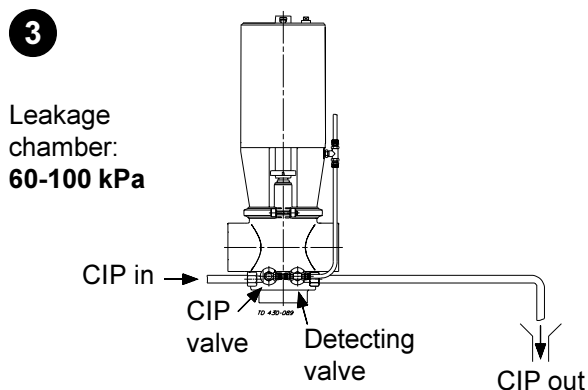



Always use rubber gloves!



Always use protective goggles!

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



-  - **Always** keep the cleaning pressure lower than the product pressure.
- **Never** throttle the outlet of the detecting valve.
(Risk of mixing because of overpressure).

5

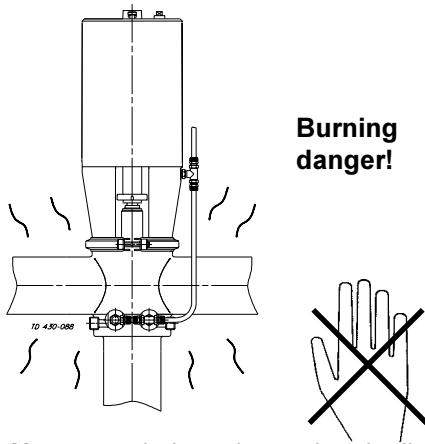
Recommended cleaning periods:
Cleaning periods of 10-15 seconds for the leakage chamber.

Product	Periods
Milk	1-2
Yoghurt	3-5
Beer	2-5
Cold wort	5-10


Recommended cleaning flow rates:
(For special processes, see 6).

Leakage chamber: 12-15 l/min.

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**
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!**

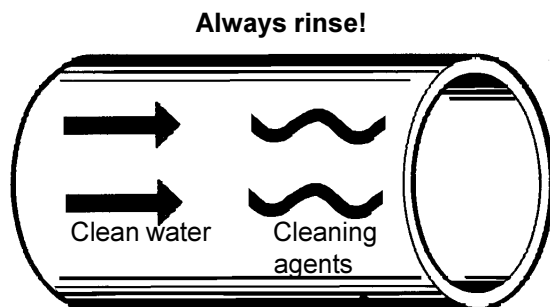
Operation

Internal leakage in the valve is externally visible by means of the outlet of the detecting valve.

Study the instructions carefully.

3. Recommended cleaning

7



8

NOTE!

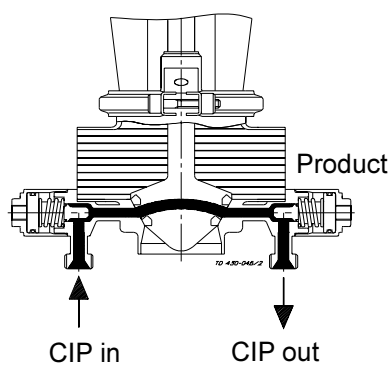
The cleaning agents must be stored/disposed of in accordance with current rules/directives.

Always rinse well with clean water after the cleaning.

Cleaning cycle:

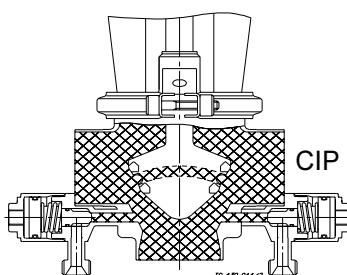
Pay special attention to the warnings!

Closed stop valve:



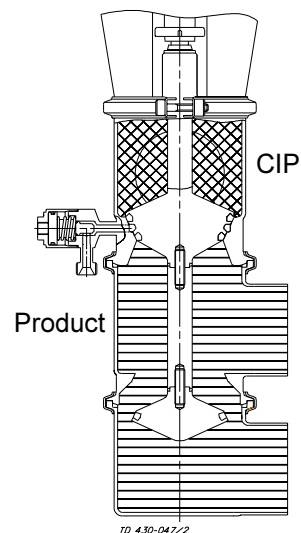
Cleaning of the leakage chamber

Open stop valve:



Cleaning of the valve body and the leakage chamber

Closed change-over valve:



Cleaning of the upper valve body

The installation kits are for cleaning of the leakage chamber when the valve is closed.

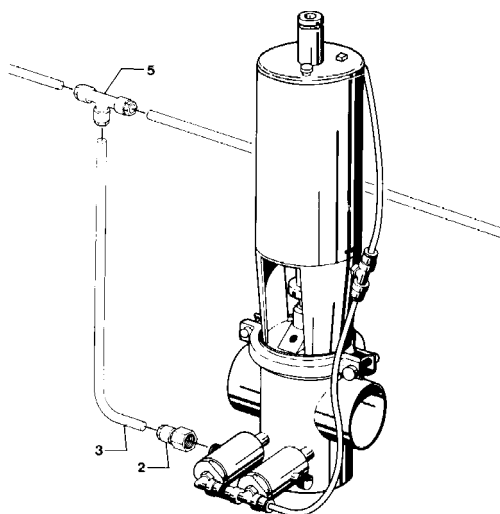
The combination of the different kits depends on the actual applications.
CIP = Cleaning In Place.

4. Cleaning equipment (optional extra)

1

Installation kit A for CIP and leakage connections of a single valve (PVDF / stainless steel tubes)

11

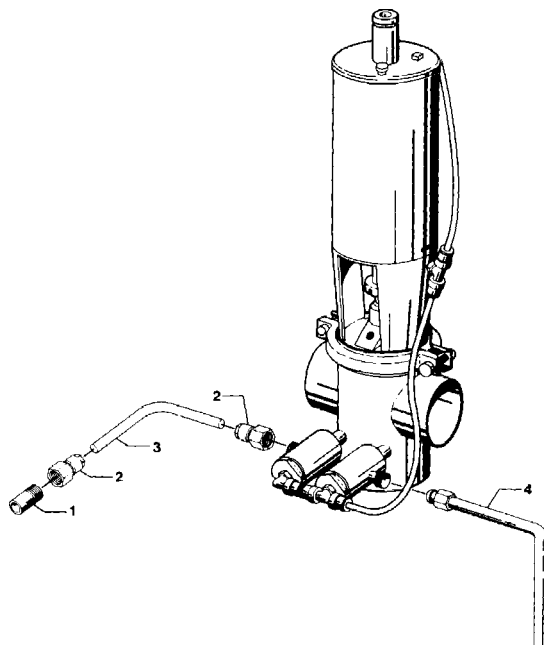


Contents:

- Pos. 2 Fitting PVDF female
- Pos. 3 Tube PVDF
- Pos. 5 Fitting PVDF

2

Installation kit B (inlet) for parallel connection of CIP (PVDF tubes)



Contents:

- Pos. 1 Welding male part
- Pos. 2 Fittings PVDF female
- Pos. 3 Tube PVDF
- Pos. 4 Leakage tube AISI 316

Operation

The installations kits are for cleaning of the leakage chamber when the valve is closed.

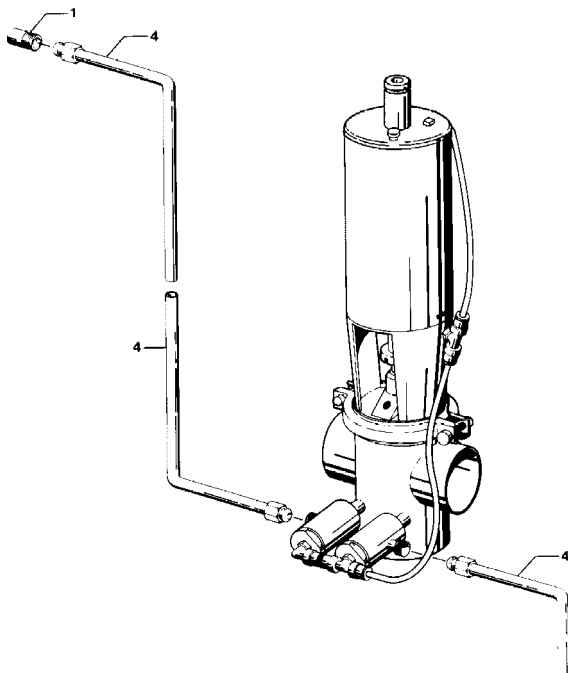
The stainless steel tubes must be cut and welded during installation.
CIP = Cleaning In Place.

4. Cleaning equipment (optional extra)

3

12

Installation kit C for CIP and leakage connection of a single valve (stainless steel tubes)



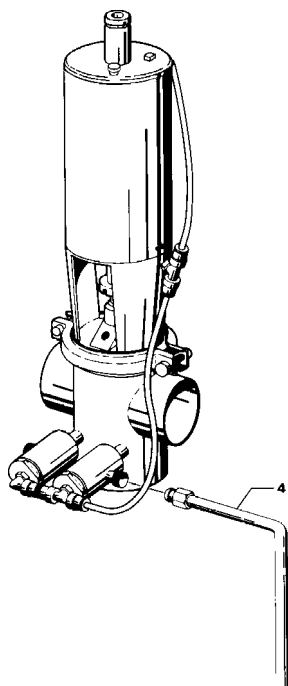
Contents:

- Pos. 1 Welding male part
- Pos. 4 CIP leakage tube AISI 316

* Adjust and weld during installation.

4

Installation kit D for leakage connection (stainless steel tube)



Contents:

- Pos. 4 Leakage tube AISI 316

Maintain the valve regularly.
Study the instructions carefully and pay special attention to the warnings!
CIP = Cleaning In Place.

Always keep spare rubber seals, lip seals and guide rings in stock.

1. General maintenance

1

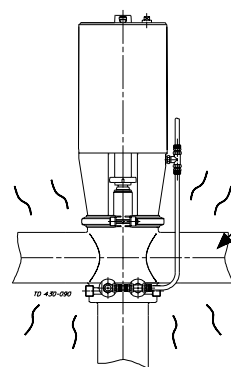


- **Always** read the technical data thoroughly (see page 21).
- **Always** release compressed air after use.
- **Always** remove the CIP connections before service.

CAUTION!

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

2



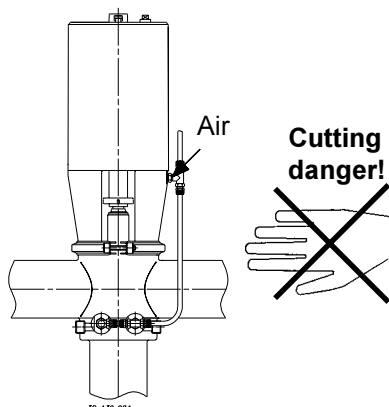
Atmospheric pressure required!

Burning danger!



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

3

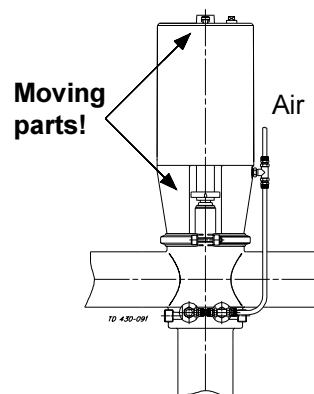


Cutting danger!



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

4



Moving parts!

Air



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).

Maintenance

14

The valve is designed so that single internal leakages do not result in the products becoming mixed. Internal leakage in the valve is externally visible. Study the instructions carefully.

Always keep spare rubber seals, lip seals and guide rings in stock. Check the valve for smooth operation after service.

1. General maintenance

	Valve rubber seals	Valve lip seal	Valve guide rings (for DN125 and DN150 only)	Actuator rubber seals	Bonnet guide ring
Preventive maintenance	Replace after 12 month	Replace when replacing the valve rubber seals	Replace when required	Replace after 5 years	Replace when replacing the actuator rubber seals (*)
Maintenance after leakage (leakage normally starts slowly)	Replace by the end of the day	Replace when replacing the valve rubber seals	Replace when required	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 valve rubber seals	Replace when required	<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	Replace when replacing the actuator rubber seals (*)
Lubrication (USDAH1 approved oil/grease)	Before fitting: Silicone oil or silicone grease	Before fitting: Silicone oil or silicone grease	None	Before fitting: Silicone oil or silicone grease	None

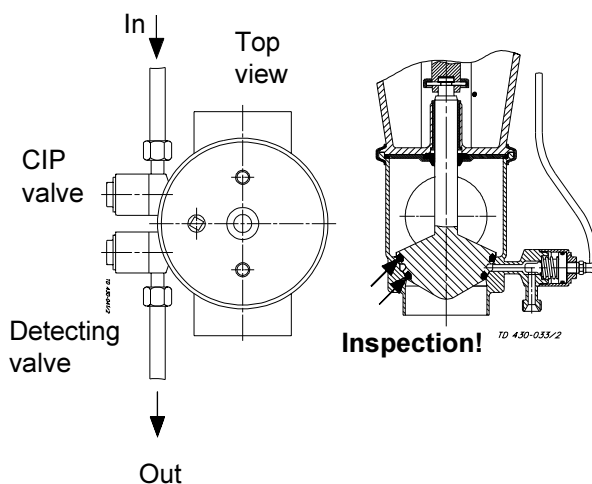
(*) IMPORTANT!

Check that the guide ring is fitted if replacing the bonnet (except on DN125 and DN150).

Pre-use check:

1. Ensure that the valve plug seals against the seat.
Pay special attention to the warnings!
2. Pressurise the leakage chamber by means of water.
3. Check that the plug seals are tight (no water leakage through the valve ports).
4. Supply compressed air to the actuator.
5. Open and close the valve several times to ensure that it operates smoothly.
Pay special attention to the warnings!

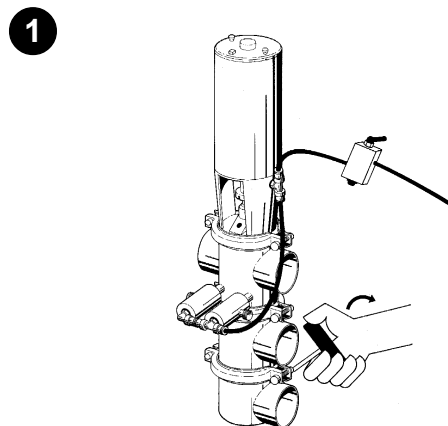
Water: 3-4 bar



Study the instructions carefully.
The items refer to the drawings and the parts list on pages 22-33.

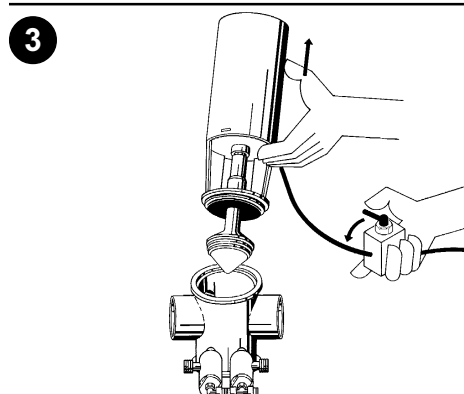
Handle scrap correctly.
Removal of plug seals, please see the special instructions on page 19.

2. Dismantling of valve



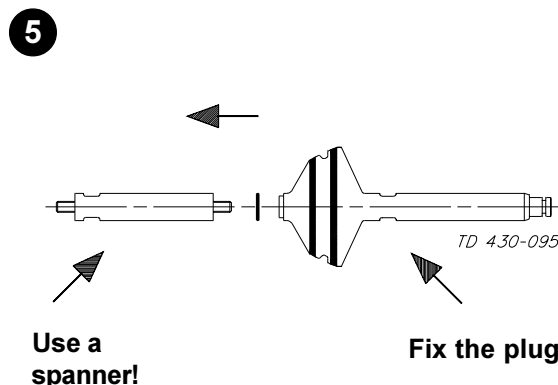
Change-over valve:

1. Loosen and remove lower clamp (24).
2. Remove lower valve body (32).
3. Pull out lower seal ring (27).



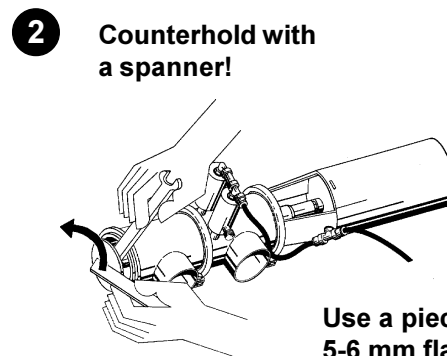
1. Supply compressed air to the actuator.
2. Loosen and remove upper clamp (24).
3. Lift out the actuator together with plug (23).
4. Release compressed air.

Pay special attention to the warnings!



Change-over valve:

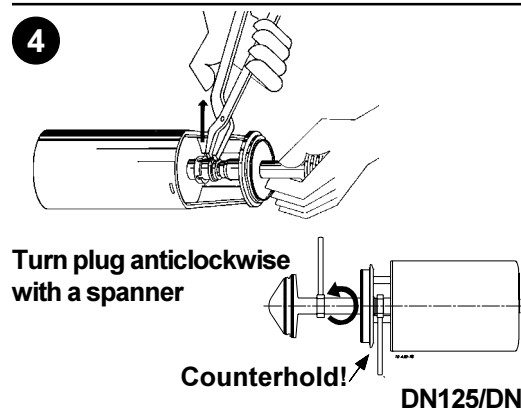
1. Remove stem (30) from plug (23a).
2. Pull off upper O-ring (29) from the plug.



Use a piece of
5-6 mm flat bar!

Change-over valve:

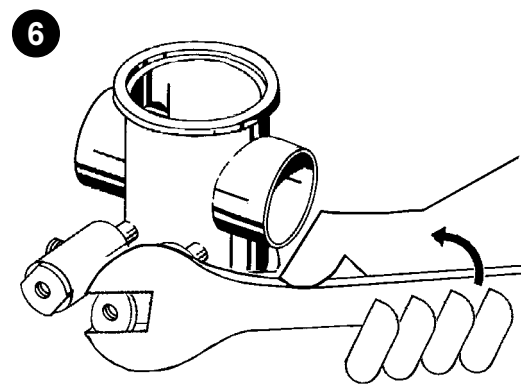
1. Remove lower plug (31b).
2. Pull off lower O-ring (29) from the plug.
3. Loosen and remove middle clamp (24).
4. Remove middle valve body (28).
5. Pull out upper seal ring (27).



Turn plug anticlockwise
with a spanner

Counterhold!
DN125/DN150

1. Remove clip assembly (12), (not NW125/ NW150: see illustration above).
2. Pull out plug (23).
3. Remove stem seal (22), (not DN125/DN150: see illustration above).



1. Remove air fittings (26g, 26h).
2. Unscrew plugs (26f).
3. Remove the internal parts.

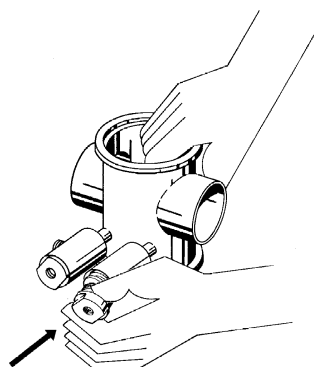
Maintenance

Study the instructions carefully.
The items refer to the drawings and the parts list on pages 22-33.

Lubricate the rubber seals and the lip seal before fitting them.
Fitting of plug seals, please see the special instructions on pages 19-20.

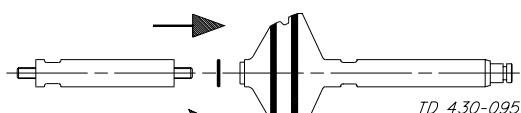
3. Reassembly of valve

1



1. Fit internal parts.
2. Screw in plugs (26f).
3. Fit air fittings (26g, 26h)

2

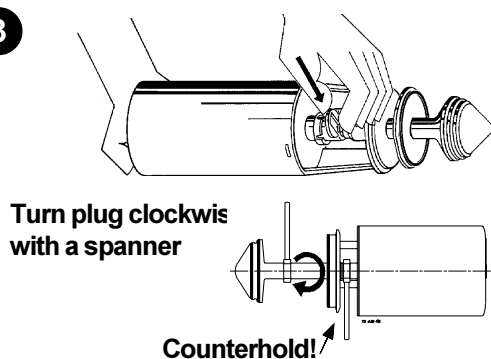


Use Loctite or something similar!

Change-over valve:

1. Slide upper O-ring (29) onto plug (23a).
2. Fit stem (30) in the plug.

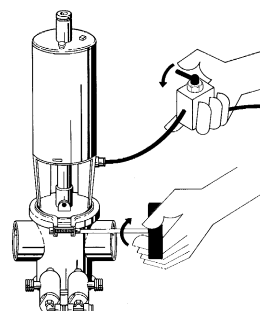
3



DN125/DN150

1. Push stem seal (22) onto plug (23), (not DN125/DN150: see illustration above).
2. Fit the plug in piston (11).
3. Fit clip assembly (12), (not DN125/DN150: see illustration above).

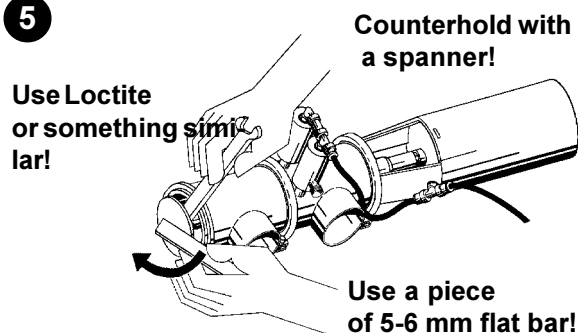
4



1. Supply compressed air to the actuator.
2. Lift in the actuator together with plug (23).
3. Fit and tighten upper clamp (24).
4. Release compressed air.

Pay special attention to the warnings!

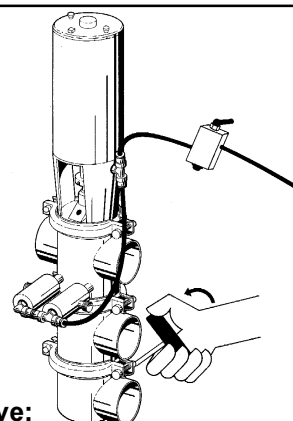
5



Change-over valve:

1. Fit upper seal ring (27) in middle valve body (28).
2. Position the middle valve body on upper valve body (25).
3. Fit and tighten middle clamp (24).
4. Slide lower O-ring (29) onto lower plug (31b).
5. Fit the lower plug.

6



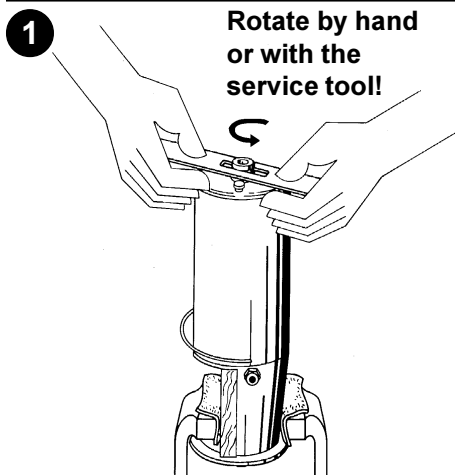
Change-over valve:

1. Fit lower seal ring (27) in lower valve body (32).
2. Position the lower valve body on middle valve body (28).
3. Fit and tighten lower clamp (24).

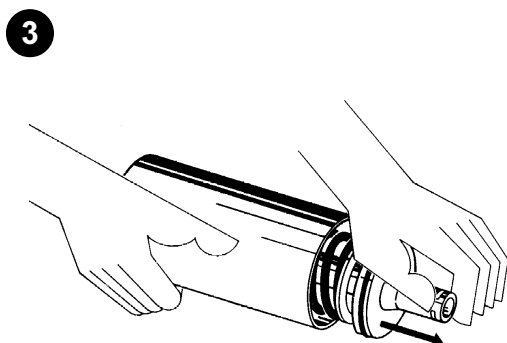
Study the instructions carefully.
The items refer to the drawings and the parts list on pages 22-33.

Handle scrap correctly.

4. Dismantling of actuator

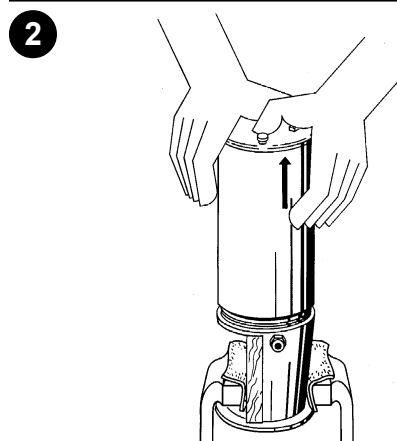


1. Rotate cylinder (5) to unhook lock wire (7).
2. Remove the lock wire.

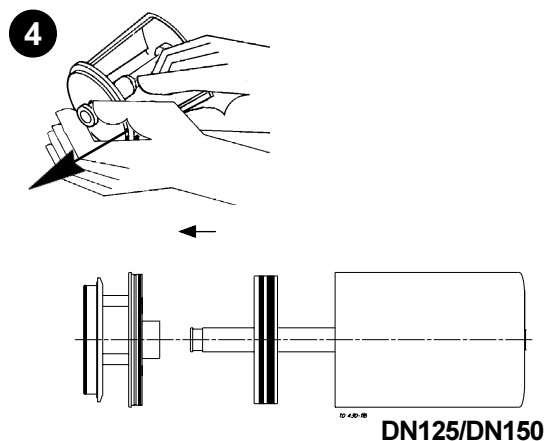


1. Pull out piston (11) and spring packet (6).
2. Pull off O-rings (2, 9) from the piston.
3. Remove guide ring (8) from the piston (DN125/DN150).

5



1. Disconnect cylinder (5) from bonnet (16).
2. Pull off O-ring (13) from the bonnet.



- Remove guide ring (17) from bonnet (16).
Remove guide rings (18, 19) from bonnet (16) (DN125/DN150).

Remove lip seal (20) from bonnet (16), (DN125/DN150).

Maintenance

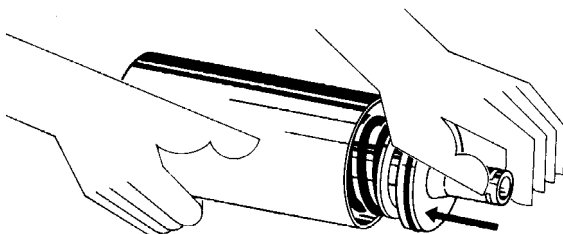
Study the instructions carefully.
The items refer to the drawings and the parts list on
pages 22-33.

5. Reassembly of actuator

1

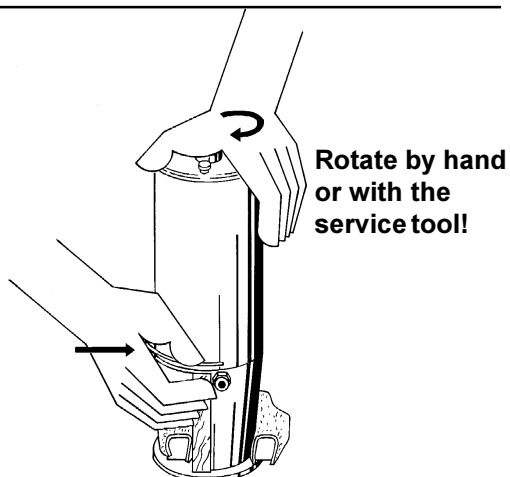
Fit lip seal (20) in bonnet (16) (DN125/DN150).

3



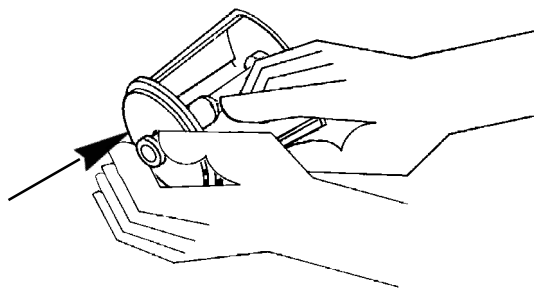
1. Fit guide ring (8) on piston (11) (DN125/ DN150).
2. Fit O-rings (2, 9) on the piston.
3. Push the piston and spring packet (6) into cylinder (5).

5



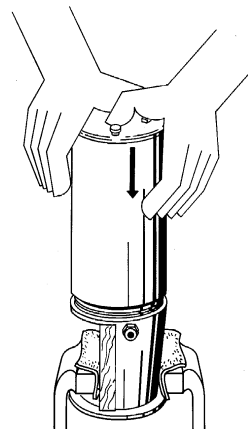
1. Rehook lock wire (7) through the slot in cylinder (5) in the hole in bonnet (16).
2. Rotate the cylinder 360° (see illustration above).

2



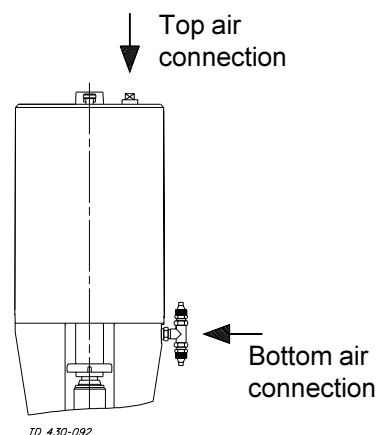
Fit guide ring (17) in bonnet (16).
Fit guide rings (18, 19) in bonnet (16) (DN125/ DN150).

4



1. Slide O-ring (13) onto bonnet (16).
2. Fit cylinder (5) on the bonnet.

6



NOTE!

Rotate cylinder (5) further 180° in relation to bonnet (16) so that the top and bottom air connections are fixed on the same side.

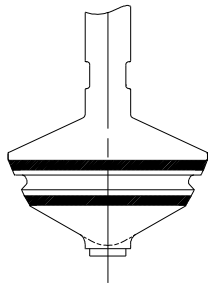
Study the instructions carefully.
The items refer to the drawings and the parts list on the pages 34-37.

Handle scrap correctly.
Do **not** lubricate the rubber seals or the tool parts before fitting the seals.

6. Replacement of plug seals

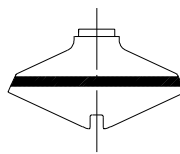
1

Removing the seal rings



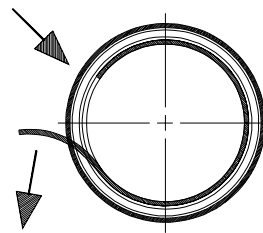
TD 4.30-096

Upper valve plug



Lowervalue plug

Cut through!



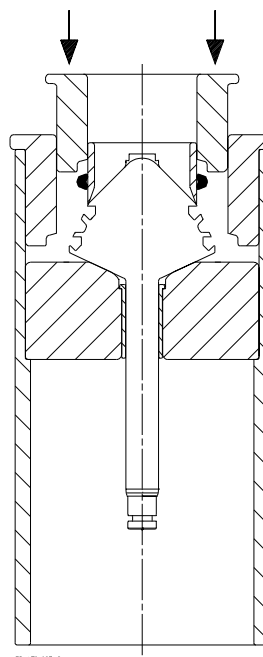
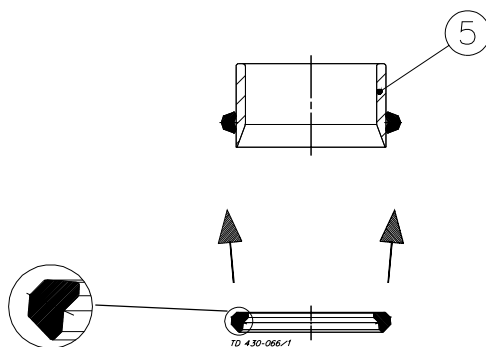
Pull!

Remove the old seal rings by cutting them through and pulling them out of the grooves.

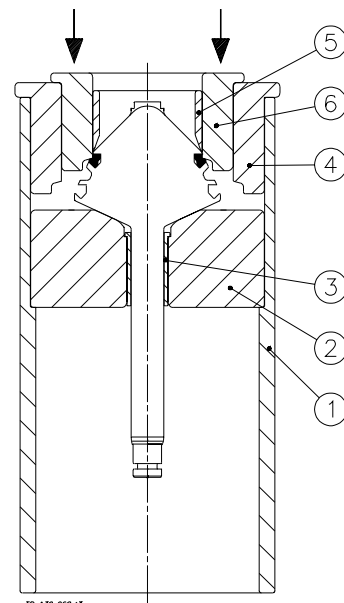
2

Fitting the seal rings

Upper valve plug:
(Stop valve and change-over valve)



TD 4.30-061/2



TD 4.30-068/3

Lower seal ring

1. Fit the lower seal ring on guide ring (5).
2. Assemble the tool (1-6).
3. Press guide piston (6) downwards so that the seal ring is fitted in the groove of the valve plug.

Study the instructions carefully.
The items refer to the drawings and the parts list on the pages 28-29.

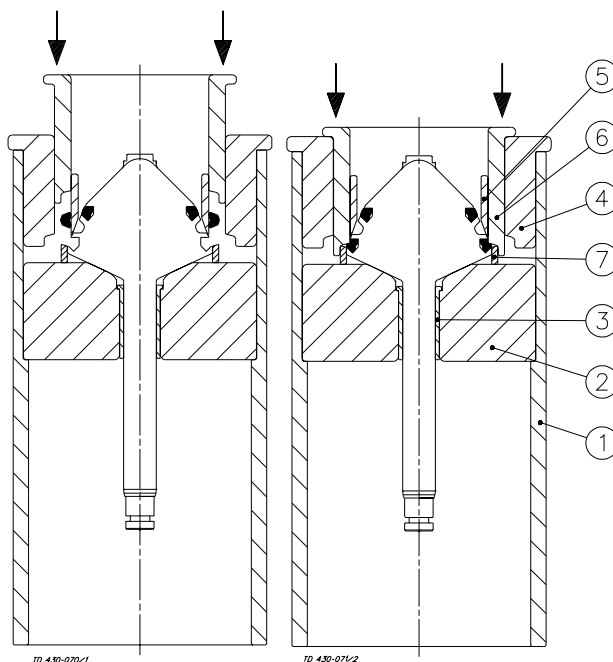
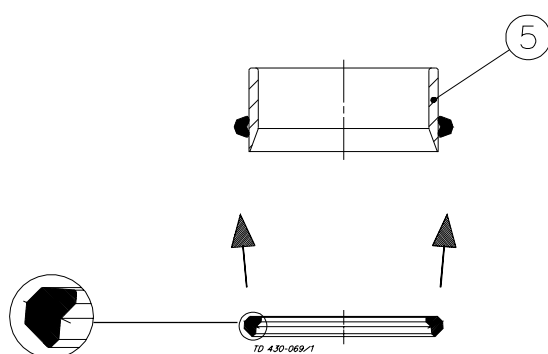
Do not lubricate the rubber seals or the tool parts before fitting the seals.

6. Replacement of plug seals

3

Fitting the seal rings

Upper valve plug:
(Stop valve and change-over valve)

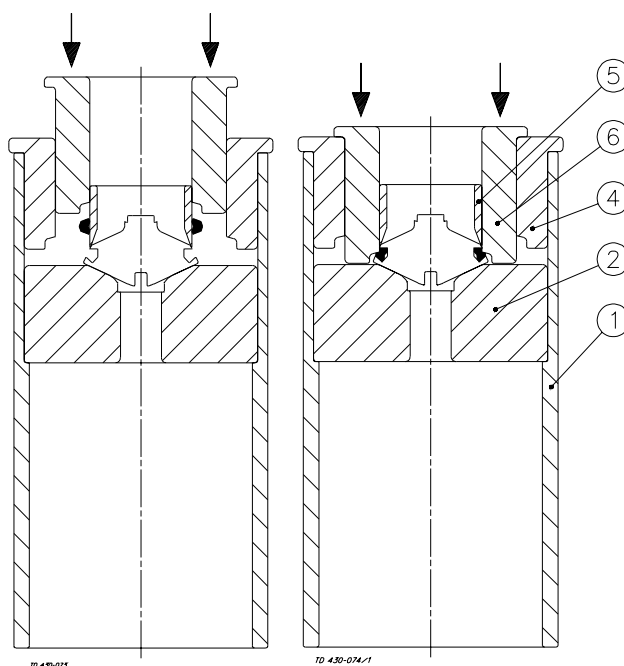
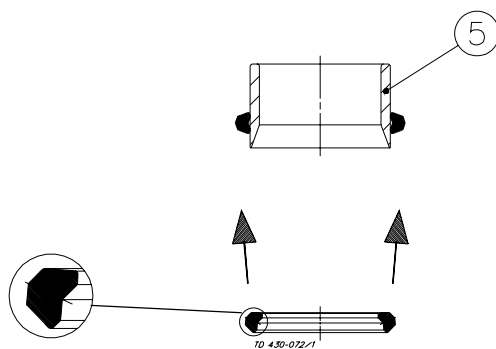


Upper seal ring:

1. Fit the upper seal ring on guide ring (5).
2. Assemble the tool (1-6), (also ring 7 for large seal on sizes DN125 and DN150).
3. Press guide piston (6) downwards so that the seal ring is fitted in the groove of the valve plug.

Fitting the seal rings

Lower valve plug:
(Change-over valve)



1. Fit the lower seal ring on guide ring (5).
2. Assemble the tool (1-6).
3. Press guide piston (6) downwards so that the seal ring is fitted in the groove of the valve plug.

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

Inform the personnel about the technical data.

1. Technical data

Data

Max. product pressure	1000 kPa (10 bar)
Min. product pressure	Full vacuum
Temperature range	-10°C to +140°C (EPDM)
Air pressure, actuator	500 to 800 kPa (5 to 8 bar)
Air consumption (litres free air)	
- 38mm, 51mm, DN40, DN50	0.2 x air pressure (bar)
- 63.5mm, 76mm, 101.6mm, DN65, DN80, DN100	0.7 x air pressure (bar)
- DN125/150, NC	
For opening the valve	1.5 x air pressure (bar)
Support air for closing the valve	3.6 x air pressure (bar)

Materials

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

Drawing/Parts list

The drawings and the parts list include all items.

The items are identical with the items in the Spare Parts List.

When ordering spare parts, please use the Spare Parts List!

Parts list SMP-BC, Stop valve

22

Item	Qty.	Denomination
1	1	Cap
2 ●	2	O-ring
4	1	Plug
5	1	Cylinder
6	1	Spring packet, standard (black)
	1	Spring packet with extra strong spring (white)
7 ●	1	Lock wire
9 ●	1	O-ring
11	1	Piston
12 ●	1	Clip, complete
13 ●	1	O-ring
15	1	Air fitting, swivel tee
16	1	Bonnet
17 ●	1	Guide ring
22	1	Lip seal kit
a ◆ Δ	1	Lip seal
b	1	Plate
c ◆ Δ	1	Seal ring
23	1	Plug, complete
a	1	Plug
b ◆ Δ	1	Seal ring
c ◆ Δ	1	Seal ring
24	1	Clamp complete
25	1	Valve body, upper
26a ◆ □ Δ ○	2	O-ring, NBR
26b □ ○	2	Spring
26c ◆ □ Δ ○	2	O-ring
26d □ ○	2	Spindle
26e ◆ □ Δ ○	2	O-ring
26f □ ○	2	Plug
26g □ ○	1	Air fitting, swivel tee
26h	1	Air fitting, swivel bend
27 ◆ Δ	2	Seal ring ■
28	1	Valve body, middle ■
29 ◆ Δ	2	O-ring ■
30	1	Stem, lower ■
31	1	Plug, lower, complete ■
a ◆ Δ	1	Seal ring ■
b	1	Plug, lower ■
32	1	Valve body, lower ■

●◆ : Service set, EPDM, NBR, FPM

■ : Change-over valve

○: CIP / detecting valve
- Internal rubber parts of EPDM, NBR, FPM

□: CIP / detecting valve -

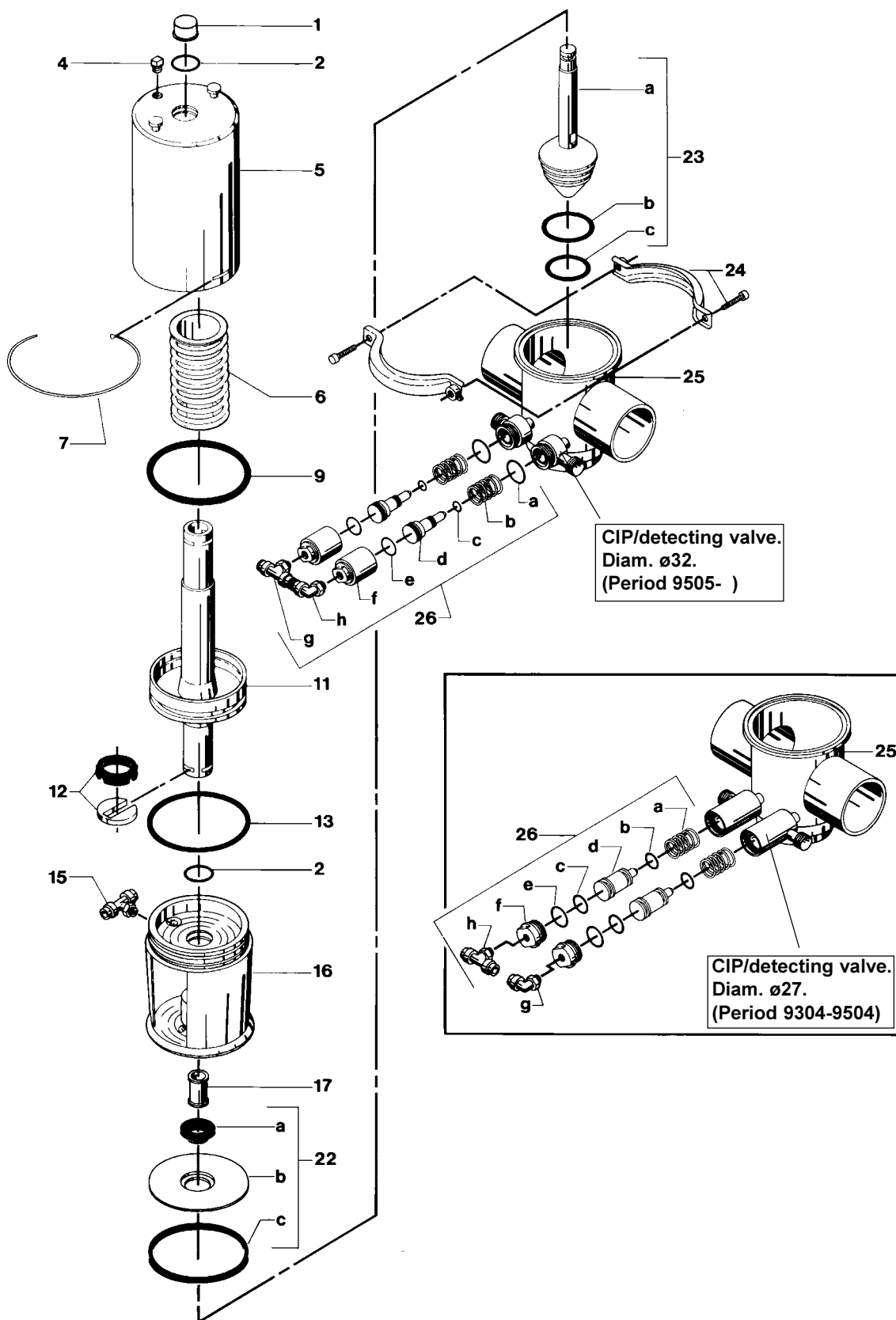
(See Spare Parts List)

This page shows an exploded drawing of SMP-BC, stop valve.

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

Exploded drawing

23



Drawing/Parts list

The drawings and the parts list include all items.

The items are identical with the items in the Spare Parts List.

When ordering spare parts, please use the Spare Parts List!

Parts list SMP-BC, Stop valve

24

Item	Qty.	Denomination
1	1	Cap
2 ●	2	O-ring
4	1	Plug
5	1	Cylinder
6	1	Spring packet, standard (black)
	1	Spring packet with extra strong spring (white)
7 ●	1	Lock wire
9 ●	1	O-ring
11	1	Piston
12 ●	1	Clip, complete
13 ●	1	O-ring
15	1	Air fitting, swivel tee
16	1	Bonnet
17 ●	1	Guide ring
22	1	Lip seal kit
a ◆ Δ	1	Lip seal
b	1	Plate
c ◆ Δ	1	Seal ring
23	1	Plug, complete
a	1	Plug
b ◆ Δ	1	Seal ring
c ◆ Δ	1	Seal ring
24	1	Clamp complete
25	1	Valve body, upper
26a ◆ □ Δ ○	2	O-ring, NBR
26b □ ○	2	Spring
26c ◆ □ Δ ○	2	O-ring
26d □ ○	2	Spindle
26e ◆ □ Δ ○	2	O-ring
26f □ ○	2	Plug
26g □ ○	1	Air fitting, swivel tee
26h	1	Air fitting, swivel bend
27 ◆ Δ	2	Seal ring
28	1	Valve body, middle
29 ◆ Δ	2	O-ring
30	1	Stem, lower
31	1	Plug, lower, complete
a ◆ Δ	1	Seal ring
b	1	Plug, lower
32	1	Valve body, lower

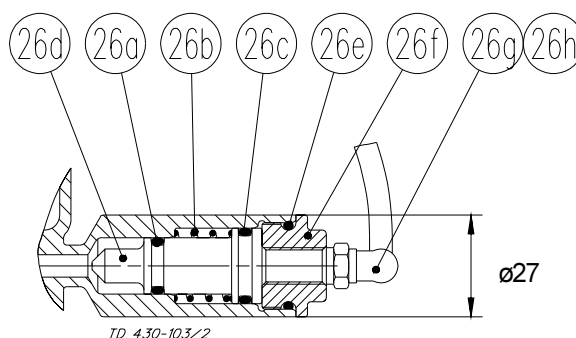
●◆ : Service set, EPDM, NBR, FPM

■ : Change-over valve

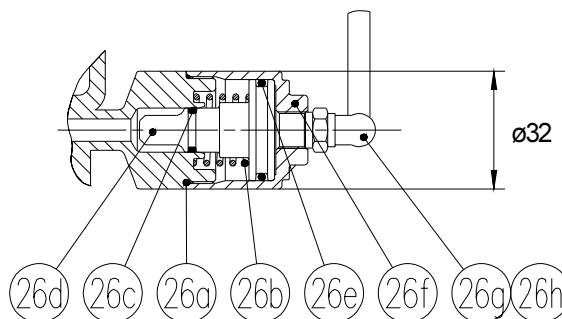
○ : CIP / detecting valve
- Internal rubber parts of EPDM, NBR, FPM

□ : CIP / detecting valve -

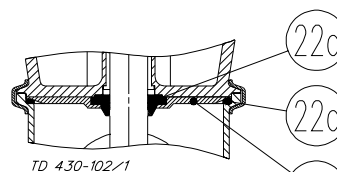
(See Spare Parts List)



**CIP / detecting valve
(Period 9304-9504)**



**CIP / detecting valve
(Period 9505-)**

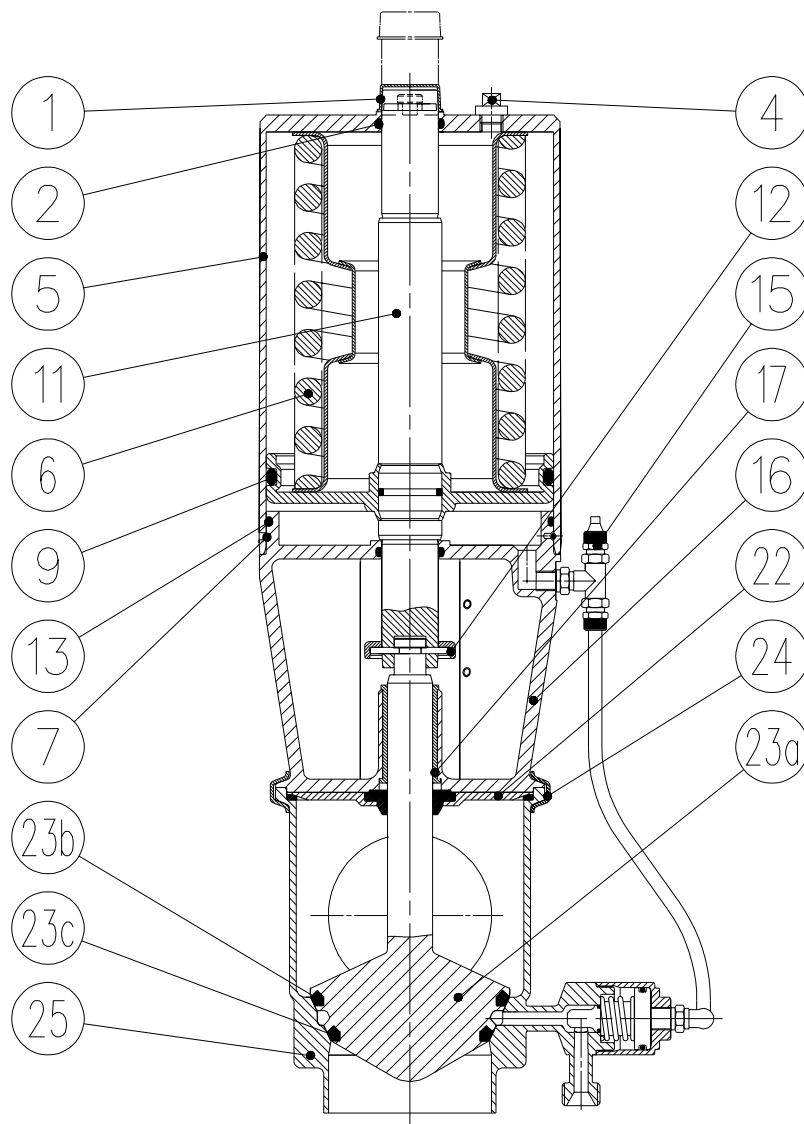


Stem seal

The drawings below show SMP-BC, stop valve.

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

Drawing



TD 430-098/2

Drawing/Parts list

The drawings and the parts list include all items.

The items are identical with the items in the Spare Parts List.

When ordering spare parts, please use the Spare Parts List!

Parts list SMP-BC, Change-over valve

26

Item	Qty.	Denomination
1	1	Cap
2 ●	2	O-ring
4	1	Plug
5	1	Cylinder
6	1	Spring packet, standard (black)
	1	Spring packet with extra strong spring (white)
7 ●	1	Lock wire
9 ●	1	O-ring
11	1	Piston
12 ●	1	Clip, complete
13 ●	1	O-ring
15	1	Air fitting, swivel tee
16	1	Bonnet
17 ●	1	Guide ring
22	1	Lip seal kit
a ◆ Δ	1	Lip seal
b	1	Plate
c ◆ Δ	1	Seal ring
23	1	Plug, complete
a	1	Plug
b ◆ Δ	1	Seal ring
c ◆ Δ	1	Seal ring
24	1	Clamp complete
25	1	Valve body, upper
26a ◆ □ Δ ○	2	O-ring, NBR
26b □ ○	2	Spring
26c ◆ □ Δ ○	2	O-ring
26d □ ○	2	Spindle
26e ◆ □ Δ ○	2	O-ring
26f □ ○	2	Plug
26g □ ○	1	Air fitting, swivel tee
26h	1	Air fitting, swivel bend
27 ◆ Δ	2	Seal ring ■
28	1	Valve body, middle ■
29 ◆ Δ	2	O-ring ■
30	1	Stem, lower ■
31	1	Plug, lower, complete ■
a ◆ Δ	1	Seal ring ■
b	1	Plug, lower ■
32	1	Valve body, lower ■

●◆ : Service set, EPDM, NBR, FPM

■ : Change-over valve

○ : CIP / detecting valve
- Internal rubber parts of EPDM, NBR, FPM

□ : CIP / detecting valve -

(See Spare Parts List)

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

Exploded view diagram of a CIP/detecting valve assembly, showing components for two different diameters: ø32 and ø27.

ø32 (Period 9505-)

ø27 (Period 9304-9504)

Drawing/Parts list

The drawings and the parts list include all items.

The items are identical with the items in the Spare Parts List.

When ordering spare parts, please use the Spare Parts List!

Parts list SMP-BC, Change-over valve

28

Item	Qty.	Denomination
1	1	Cap
2 ●	2	O-ring
4	1	Plug
5	1	Cylinder
6	1	Spring packet, standard (black)
	1	Spring packet with extra strong spring (white)
7 ●	1	Lock wire
9 ●	1	O-ring
11	1	Piston
12 ●	1	Clip, complete
13 ●	1	O-ring
15	1	Air fitting, swivel tee
16	1	Bonnet
17 ●	1	Guide ring
22	1	Lip seal kit
a ◆ Δ	1	Lip seal
b	1	Plate
c ◆ Δ	1	Seal ring
23	1	Plug, complete
a	1	Plug
b ◆ Δ	1	Seal ring
c ◆ Δ	1	Seal ring
24	1	Clamp complete
25	1	Valve body, upper
26a ◆ □ Δ ○	2	O-ring, NBR
26b □ ○	2	Spring
26c ◆ □ Δ ○	2	O-ring
26d □ ○	2	Spindle
26e ◆ □ Δ ○	2	O-ring
26f □ ○	2	Plug
26g □ ○	1	Air fitting, swivel tee
26h	1	Air fitting, swivel bend
27 ◆ Δ	2	Seal ring
28	1	Valve body, middle
29 ◆ Δ	2	O-ring
30	1	Stem, lower
31	1	Plug, lower, complete
a ◆ Δ	1	Seal ring
b	1	Plug, lower
32	1	Valve body, lower

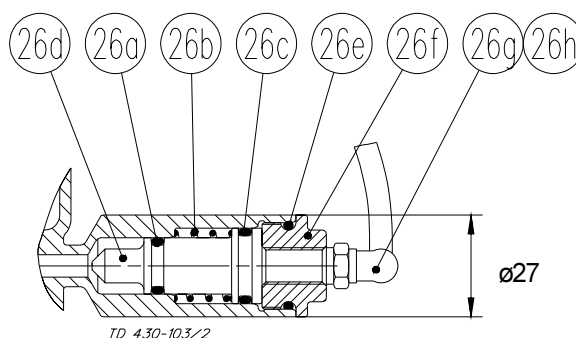
●◆ : Service set, EPDM, NBR, FPM

■ : Change-over valve

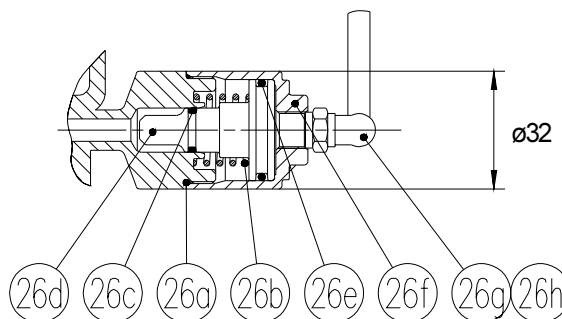
○ : CIP / detecting valve
- Internal rubber parts of EPDM, NBR, FPM

□ : CIP / detecting valve -

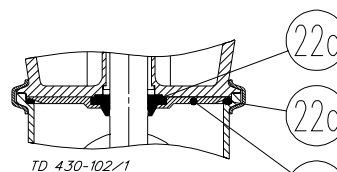
(See Spare Parts List)



**CIP / detecting valve
(Period 9304-9504)**



**CIP / detecting valve
(Period 9505-)**

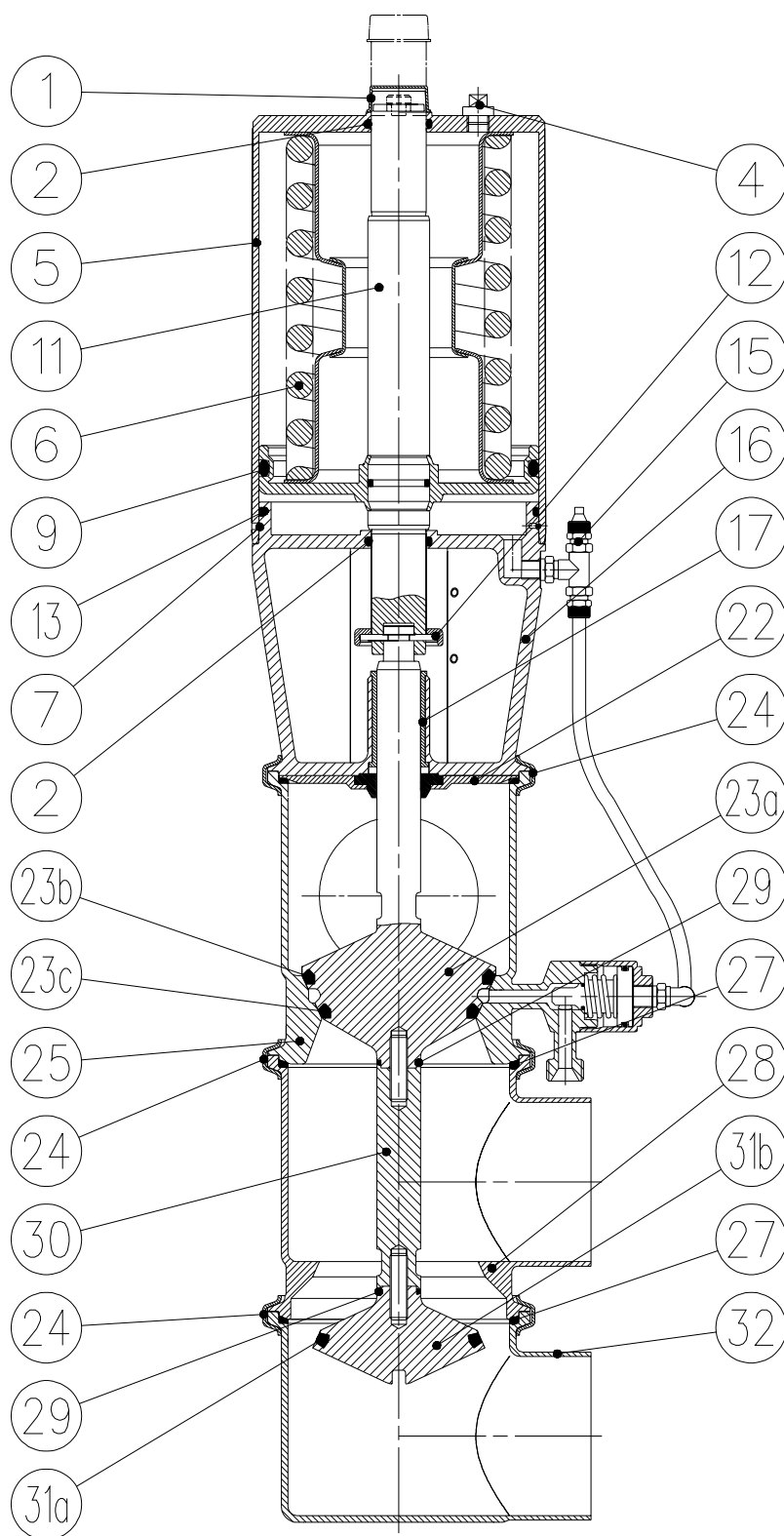


Stem seal

The drawings below show SMP-BC, change-over valve.

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

Drawing



TD 430-097/2

Drawing/Parts list

The drawings and the parts list include all items.

The items are identical with the items in the Spare Parts List.

When ordering spare parts, please use the Spare Parts List!

Parts list SMP-BC, Stop valve DN125/DN150

30

Item	Qty.	Denomination
1	1	Cap
2●	2	O-ring
3●	1	Guide ring
4	1	Plug
5	1	Cylinder
6	1	Spring packet
7●	1	Lock wire
8●	1	Guide ring
9●	1	O-ring
10	1	Top pin
11	1	Piston
13●	1	O-ring
14●	1	O-ring
15	1	Air fitting, swivel tee
16	1	Bonnet
18●	1	Guide ring
19●	1	Guide ring
20●	1	Lip seal
21◆	1	O-ring
23	1	Plug, complete
a	1	Plug
b◆	1	Seal ring
c◆	1	Seal ring
24	1	Clamp complete
25	1	Valve body
26a◆□	2	O-ring
26b □	2	Spring
26c◆□	2	O-ring
26d □	2	Spindle
26e◆□	2	O-ring
26f □	2	Plug
26g □	1	Air fitting, swivel tee
26h	1	Air fitting, swivel bend

●,◆ : Service set, EPDM, NBR, FPM

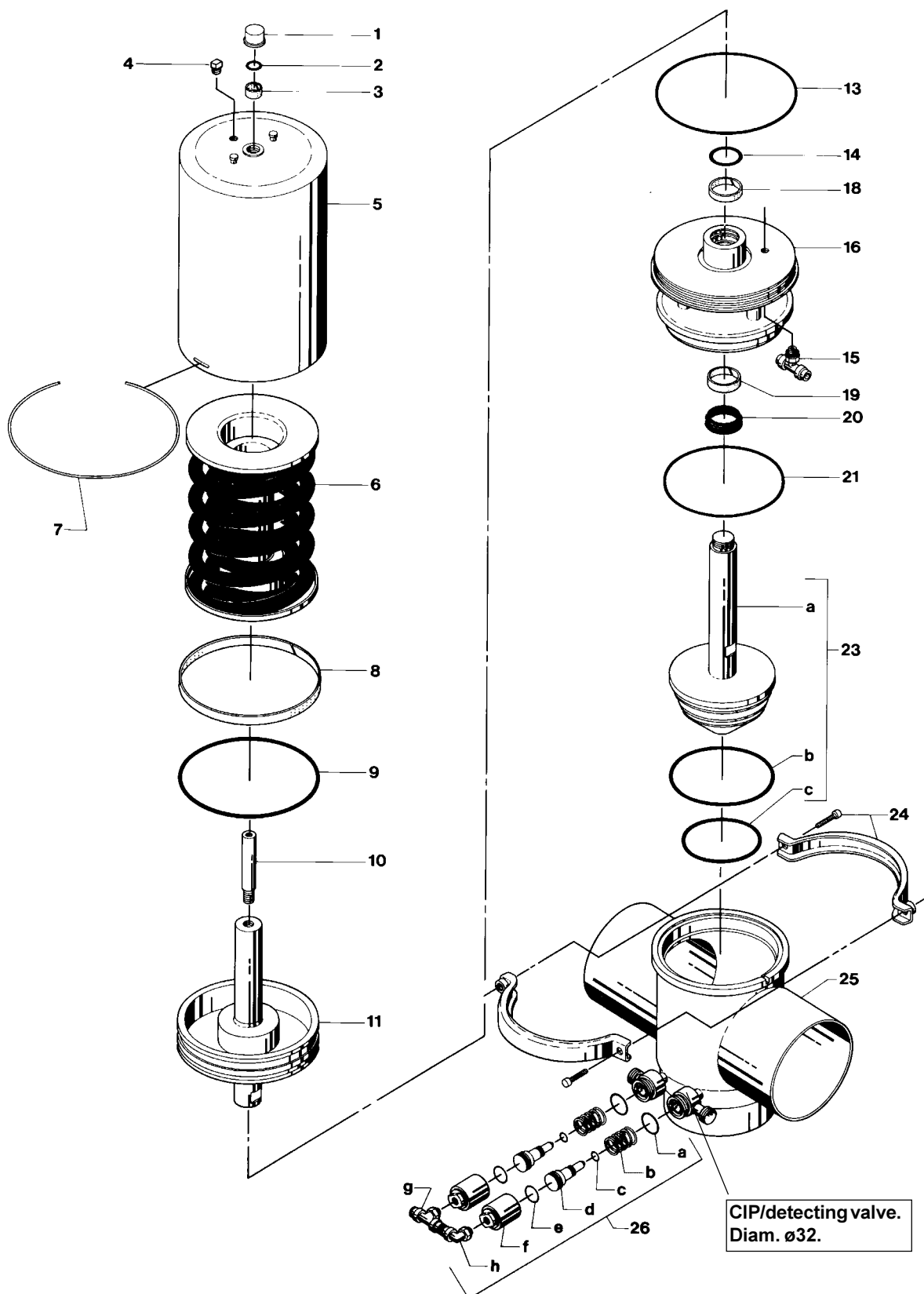
□: CIP / detecting valve -

(See Spare Parts List)

This page shows an exploded drawing of SMP-BC, stop valve, valve sizes DN125/DN150.

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.

The items are identical with the items in the Spare Parts List.

When ordering spare parts, please use the Spare Parts List!

Parts list SMP-BC, Stop valve DN125/DN150

32

Item	Qty.	Denomination
1	1	Cap
2●	2	O-ring
3●	1	Guide ring
4	1	Plug
5	1	Cylinder
6	1	Spring packet
7●	1	Lock wire
8●	1	Guide ring
9●	1	O-ring
10	1	Top pin
11	1	Piston
13●	1	O-ring
14●	1	O-ring
15	1	Air fitting, swivel tee
16	1	Bonnet
18●	1	Guide ring
19●	1	Guide ring
20●	1	Lip seal
21◆	1	O-ring
23	1	Plug, complete
a	1	Plug
b◆	1	Seal ring
c◆	1	Seal ring
24	1	Clamp complete
25	1	Valve body
26a◆□	2	O-ring
26b □	2	Spring
26c◆□	2	O-ring
26d □	2	Spindle
26e◆□	2	O-ring
26f □	2	Plug
26g □	1	Air fitting, swivel tee
26h	1	Air fitting, swivel bend

●,◆ : Service set, EPDM, NBR, FPM

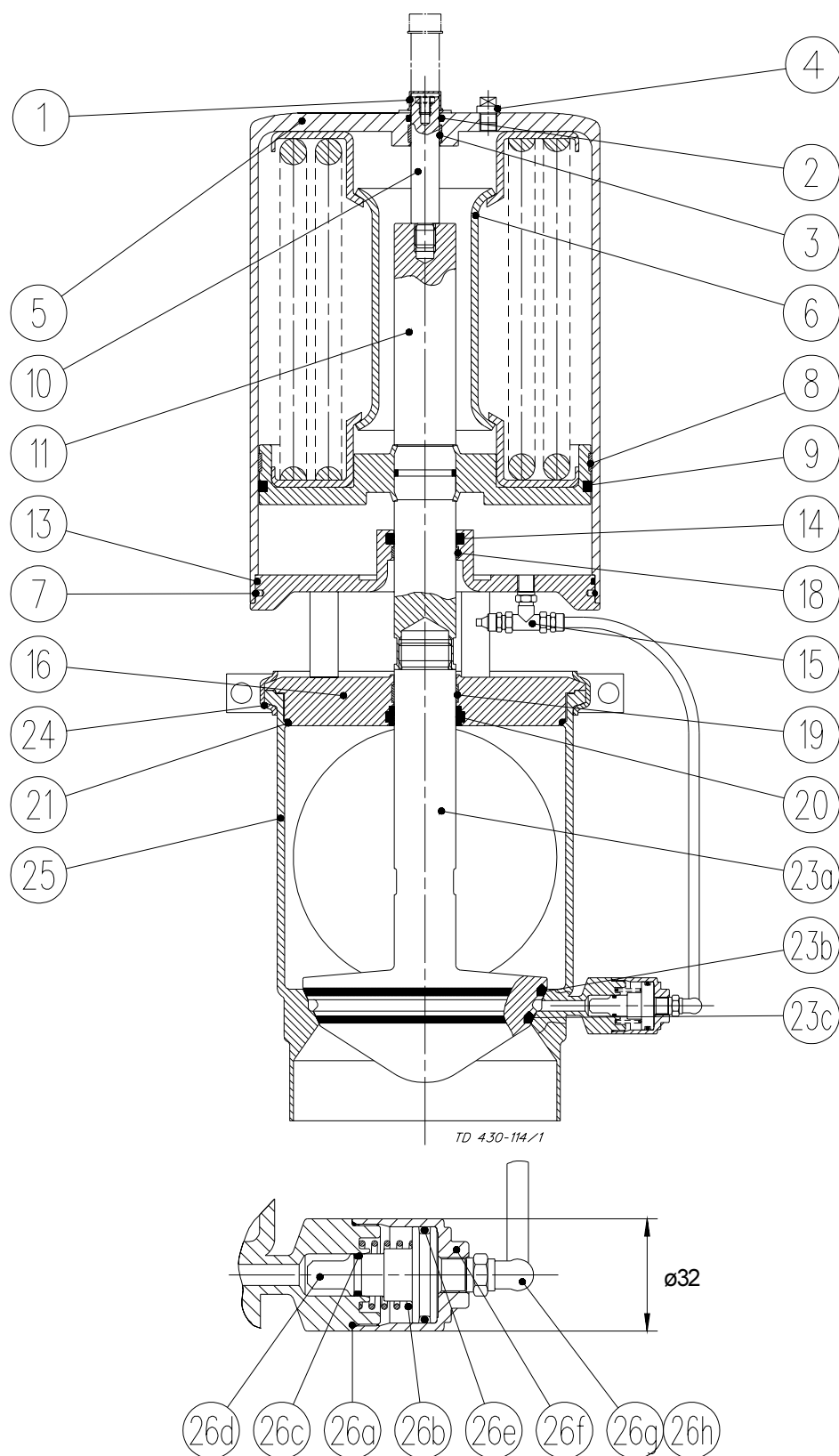
□: CIP / detecting valve -

(See Spare Parts List)

The drawings below show SMP-BC, stop valve, sizes DN125/DN150.

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

Drawings



CIP / detecting valve

Drawing/Parts list

*The drawing below shows the tool for the plug seals.
The drawing and the parts list include all items.*

*The items are identical with the items in the Spare
Parts List.*

*When ordering spare parts, please use the Spare
Parts List!*

Parts list Tool for plug seals

34

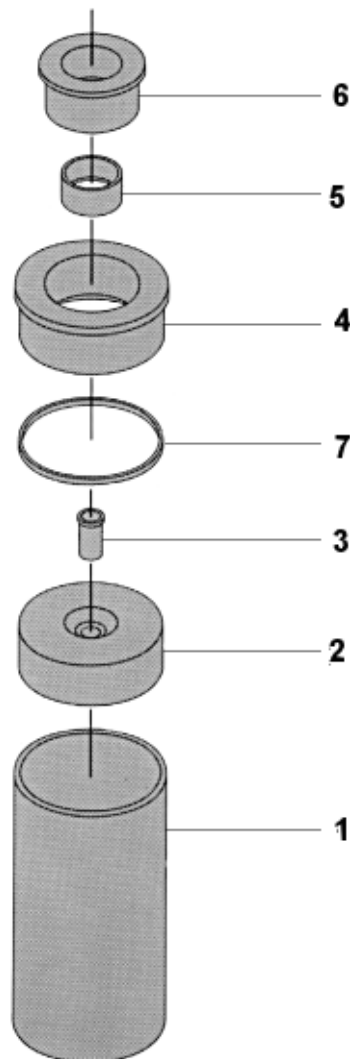
Item	Qty.	Denomination
1	1	Outer main guide
2	1	Lower guide ring
3	1	Bush
4	1	Piston ring
5	1	Guide ring
6	1	Guide piston
7	1	Ring

(See Spare Parts List)

This page shows an exploded drawing of the tool for the plug seals.

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

Exploded drawing



Drawing/Parts list

The drawing and the parts list include all items.

The items are identical with the items in the Spare Parts List.

When ordering spare parts, please use the Spare Parts List!

Parts list Tool for plug seals

36

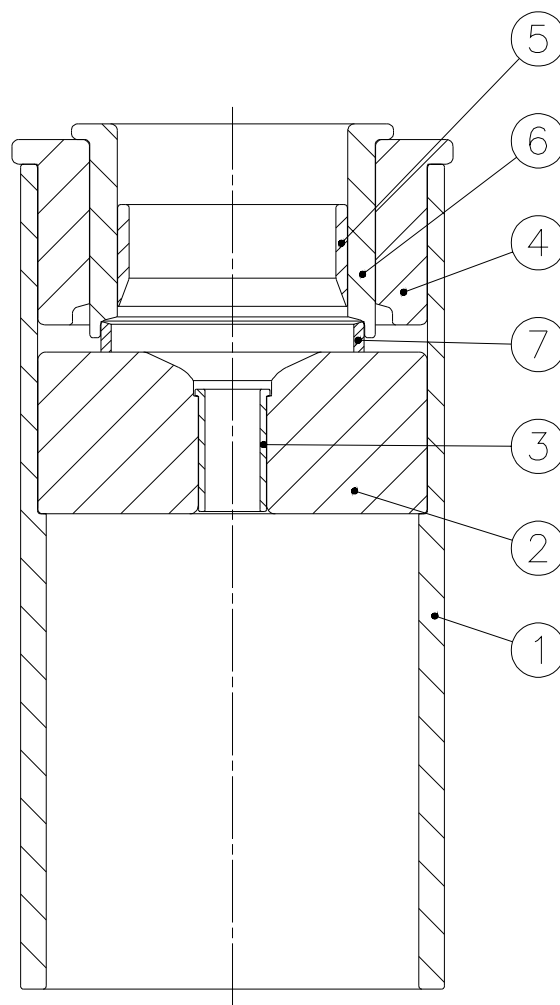
Item	Qty.	Denomination
1	1	Outer main guide
2	1	Lower guide ring
3	1	Bush
4	1	Piston ring
5	1	Guide ring
6	1	Guide piston
7	1	Ring

(See Spare Parts List)

The drawing below shows the tool for the plug seals.

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

Drawing



TD 430-099/1

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.