SOMAS®

Edition: 2024-02

Mi-115 EN

Operation and service instruction
Ball segment valves HVV

Type HVVW-A:
Wafer design Standard face to face dimension

Nominal pressure:	PN 10/16/25/40, Class 150/300
Nominal size:	DN 40/32-250, NPS $1^{1/2}$/ $1^{1/4}$-10

Type HVVW-D:
Wafer design Short face to face dimension

PN 10/16,25/40, Class150/300
DN 40/32-250, NPS $1^{1/2}$/ $1^{1/4}$-10

Type HVVF-L:
Flanged design

Nominal pressure:	PN 10/16/25/40, Class 150/300
Nominal size:	DN 40/32-50, NPS $1^{1/2}$/ $1^{1/4}$-2

Type HVVF-B:
Flanged design

Nominal pressure:	PN 10/16/25, Class 150, NPS 3-10
Nominal size:	DN 80-250

Type HVVF-C:
Flanged design Short face to face dimension

PN 10/16/25, Class150, NPS $1^{1/2}$/ $1^{1/4}$-10
DN 80-300

Introduction

This operating manual is intended for the operating, maintenance and supervisory personnel.

This operating manual also describes components, equipment and ancillary units which are not or only partially included in the scope of supply.

The operating personnel must have read, understood and must comply with this operating manual.

We keep the right to do any technical changes which are necessary to improve the product without prior notice.

Copyright

Valve supplier

Somas Instrument AB
Norrlandsvägen 26-28
SE-661 40 SÄFFLE
SWEDEN

Phone: +46 (0)533 69 17 00
E-mail: sales@somas.se
Website: www.somas.se

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1 Preliminary remarks

To enable you to find information quickly and reliably in the operation manual, this chapter familiarises you with the structure of the operating manual.

This manual uses symbols and special characters which make it easier for you to find information. Please read the explanations of the symbols given in the section below.

Ensure that you read all the safety instructions in this operating manual very carefully.

You will find safety instructions in section 2, in the foreword to the sections and before any working instructions.

1.1 Explanation of warnings, symbols and signs

1.1.1 Warnings

Warnings are used in this operating manual to warn against injury and material damage. Always read and observe these warnings! Warnings are identified by the following symbols:

In this manual are used diverse types of safety and warning notices:

Danger!	
Type of danger. Advise for imminent danger. Not attention of the advices could be mortal or cause severe injuries as a consequence. Explanation of the countermeasures.	International Safety symbol

Warning!	
Type of danger. Advise for imminent danger. Not attention of the advices could cause severe injuries or property damage as a consequence. Explanation of the countermeasures.	International Safety symbol

Attention!	
Type of danger. Advise for possible danger. Not attention of the advices could cause property damage as a consequence. Explanation of the countermeasures.	International Safety symbol

Note

Advices and give tips for better understanding of the manual or a better handling of the valve.

1.1.2 Symbols and signs

Symbols and signs are used in this operating manual to provide fast access to information.

1.1.2.1 Symbols and signs in the text

Symbol	Denotation	Explanation
⇨	Operating instructions	This means there is an action to be carried out.
1. 2.	Operating instructions, multi-step	Work instructions must be carried out in the sequence shown. Deviations from the sequence shown may result in damages to the valves and accidents.
• –	Lists, two-stage	No activities are linked with lists.
➔	Cross-reference	References to images, tables, other sections or other instructions.

Tab.1-1 Symbols in the text

2 Safety

2.1 Safety instructions

2.1.1 General dangers

Sources of danger resulting in general hazards:

- Mechanical hazards
- Electrical hazards

2.1.2 Hazards due to electrical equipment

Due to the permanent dampness, electrically-operated machine parts represent a potential source of danger. Comply with all regulations on electrical equipment in damp areas!

2.1.3 Additional hazards

2.1.3.1 Entanglement, crushing and cut/sever hazards

- by moving machine parts left exposed, by removing covers for inspection, sampling, etc.
- by automatic operated valves

2.1.3.2 Burning or scalding hazards

- by opening or leaving open function-check and/or sampling openings on systems operating at high temperatures (above 40° C)
- by operating temperature >= 70° C. Short contacts (approx. 1s) of the skin with the surface of the valve may cause burns (pr EN 563)
- by operating temperature = 65° C. Longer contacts (approx. 3s) of the skin with the surface of the valve may cause burns (pr EN 563)
- by operating temperature 55° C…65° C. Longer contacts (approx. 3-10s) of the skin with the surface of the valve may cause burns (pr EN 563)

2.1.3.3 Explosion hazards

A high surface temperature on a valve and actuator, constitutes (a risk for burn injuries, and) a risk of ignition of explosive atmospheres in ATEX applications.

The surface temperature of the equipment is not dependent on the equipment itself, but on the ambient conditions and the process conditions. The protection from the surface temperature is the responsibility of the end user, and must be effectuated before the equipment is put into service.

2.1.4 State of the art

This product has been built by Somas Instrument AB in accordance with state-of-the-art standards and the recognized safety rules. Nevertheless, its use may constitute a risk to life and limb of the user or of third parties, or cause damage to the valve and to other material property, if:

- the product is not used as designated
- the product is operated or repaired by untrained personnel
- the product is modified or converted improperly and/or
- the safety instructions are not observed

Therefore, every person involved in erecting, operating, inspecting, maintaining, servicing and repairing the valve must read, understand and observe the complete operating instructions, particularly the safety instructions.

2.1.5 Preconditions for using the valve

The valve only has to be used:

- in perfect technical condition
- as designated
- according to the instructions in the operating manual, and only by safetyconscious persons who are fully aware of the risks involved in operating the valve
- if all protective devices are installed and operative

Rectify immediately any functional disorders, especially those affecting the safety of the valve!

2.2 Designated use of the valve

2.2.1 Use

The valves are appropriate to be used in pulp and paper industry, chemical industry, shipbuilding industry, energy industry and offshore industry.

Particular data to the operation and limit values are specified on the datasheet “Si-115 ”.

The operating values, limit values and setting data must not deviate from the values specified in the operating manual and correspondig information sheet without consulting the manufacturer! The manufacturer cannot be held liable for any damages resulting from non-observance of the operating manual.

2.2.2 Liability for non-designated use

Using the valve for other purposes than those mentioned previously is considered contrary to its designated use. For resulting damages of this, Somas Instrument AB is not liable! The user take the risk.

2.3 Organizational measures

2.3.1 Availability of operating manual

The operating manual has to be stored and be readily available!

2.3.2 Additional regulations

In addition to the operating manual, it have to be observed all other generally applicable legal and other mandatory regulations relevant to accident prevention and environmental protection! Direct the personnel to comply with them!

2.3.3 Checks

Periodically check that the personnel carry out the work in compliance with the operating manual and that they pay attention to risks and safety factors.

2.3.4 Protective equipment

Use when necessary protective equipment.

2.3.5 Rebuilds or modifications at the valve

Do not make any rebuilds or modifications at the valve yourself, which can affect the security of the valve.

2.3.6 Replacing damaged parts

Valve parts that are not in perfect condition must be replaced immediately with original spare parts! Use only original spare and wear parts from Somas Instrument AB.

On unauthorized parts is not guarantee that they have been designed and manufactured according to the application.

2.4 Selection and qualification of personnel

Operation, maintenance and repairing works require special knowledge and may only be carried out by trained technical specialists or qualified personnel authorized by the user.

2.5 Safety instructions for ball segment valves

Operation of the ball segment valve is always subject to the local safety and accident prevention regulations.

Danger!

Risk of injury!
Observe movements of the ball segment.
Keep hands, tools and other objects away from the area where the ball segment moves when the actuator is connected to compressed air system. Single action actuators may move to “open” or “closed” position without being connected to the air system.

Warning!

Before carrying out maintenance or repair work on the ball segment valve with actuator or installation and removal of the ball segment valve from the pipeline, always disconnect the compressed air supply to the actuator.
Single action actuators may move to “open” or “closed” position without being connected to the air system.

Warning!

Ensure that personnel who work with, install or repair the ball segment valve are appropriately trained. This prevents unnecessary damage and accidents or injury to personnel.

The maintenace and assembly personnel must be familiar with the process of installing and disassembling the ball segment valve in a process line, the special and possible risks of the process and the most important safety regulations.

The repair and assembly personnel must be familiar with the risks when handling pressurised equipment, hot and cold surfaces, dangerous substances and substances which represent a hazard to health.

Warning!

Do not exceed the design data of the ball segment valve!
Exceeding the design data marked on the ball segment valve may lead to damage and uncontrolled escape of the pressurised medium.
Both the damage as such and the pressurised medium may lead to injuries to personnel.

Warning!

Do not remove the ball segment valve from the line as long as it is pressurised!
Dismantling or disassembly of a pressurised ball segment valve leads to an uncontrolled loss of pressure. Always isolate the relevant ball segment valve in the pipe system; despressurise the ball segment valve and remove the medium before working on the ball segment valve.

Warning!

Before assembling or disassembling the pneumatic actuator of a ball segment valve installed in the pipeline depressurise the relevant valve in the pipeline system, isolate the valve and remove the medium before working on the valve.
The pressurised medium may lead to injuries to personnel.

Warning!

Inform yourself of the properties of the medium. Protect yourself and your environment from hazardous or poisonous substances.
Observe the safety instructions in the safety data sheets of the manufacturers. Ensure that no medium can enter the pipeline during maintenance work.

Warning!

Before replacing the stuffing box of a ball segment valve installed in the pipeline depressurise the relevant valve in the pipeline system, isolate the valve and remove the medium before working on the valve.
The pressurised medium may lead to injuries to personnel.

Danger!

Risk of injury!
Observe movements of the ball segment.
Keep hands, tools and other objects away from the area where the ball segment moves. The valve with ball segment mounted may work as a cutting tool. Do not leave any foreign objects in the valve body. The ball segment of the ball segment valve always works as a separate device. There is no difference whether an actuator is installed or not. The position of the ball segment may change during transport or handling of the ball segment valve.

Warning!

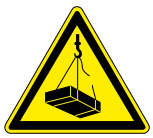
Protect yourself against noise - use the relevant safety equipment.
The ball segment valve may cause noise in the pipeline. The noise level depends on the type of application and can be determined with the Somas software SomSize.
Additional noise sources in the vicinity of the ball segment valve may increase the noise level.

Warning!

Beware of very cold or hot surfaces!
The body of the ball segment valve may become very cold or very hot during operation. Protect yourself against frostbite and burns.

Warning!

When transporting and handling the ball segment valve, observe its weight.
Never lift the valve by its positioner, limit switch, solenoid valve or piping. Place the hoisting ropes securely according to lift instruction.
The ball segment valve or parts thereof may injure persons if dropped.
Do not walk under suspended loads.



3 Description

3.1 General information

Somas ball segment valve type HVV with an excentrically mounted unchromed bearing shaft is available in wafer or flanged design. The design of the valve is a modification of Somas ball segment valve with a unique shaft design and a specifically engineered excentricity, and it is always equipped with a spring-loaded gland. Combinations of various media with added chemicals along with temperature changes sometimes result in a build-up of coating.

Another example where media with a high level of dry content that can cause clogging can be found in air-based applications. Somas HVV is intended for applications that require high reliability as well as easy maintenance while still offering a optimal control function.

To improve HVV even further the valve has been designed with an axis seal that prevents media from entering the shaft bearing. It is also equipped with bearings to maintain smooth maneuverability.

The valve is supplied with a high-cobolt alloy-seat as standard. The design of the valve is specifically engineered to counteract the build-up of media coating between the valve seat and ball segment.

4 Technical specifications

4.1 Tightening torque for bolts

4.1.1 Torques for flange boltings

DN	PN/Class	Bolt-dimension	Number of bolts	Torque (Nm)[1]
25	10, 16, 25 40 /150 /300	M12 M12 1/2“ 5/8“	4 4 4 4	32 48 35 60
40	10, 16, 25 40 /150 /300	M16 M16 1/12” 3/4“	4 4 4 4	65 95 65 75
50	10, 16, 25 40 /150 /300	M16 M16 5/8“ 5/8“	4 4 4 8	80 120 60 45
65	10, 16, 25 40 /150 /300	M16 M16 5/8“ 3/4“	8 8 4 8	55 80 75 65
80	10, 16, 25 /150	M16 5/8”	8 4	65 105
100	10, 16, 25 /150	M16 M20 5/8”	8 8 8	80 95 70
125	10,16 25 /150	M16 M24 3/4”	8 8 8	90 110 110
150	10,16 25 /150	M20 M24 3/4”	8 8 8	120 140 130
200	10 16 25 /150	M20 M20 M24 3/4”	8 12 12 8	175 120 140 180
250	10 16 25 /150	M20 M24 M27 7/8”	12 12 12 12	140 150 200 170
300	10 16 25 /150	M20 M24 M27 7/8“	12 12 16 12	160 180 205 230

Tab.4-1 Torque for flange boltings

[1] The information in the table refers to lubricated bolts. The correction factor for new, unlubricated bolts is 1.5. Tighten the bolts alternately until the correct tightening torque is reached.

Tightening torque applies to flat gaskets corresponding to non-reinforced and reinforced graphite according to EN 12516-2: 2014 with m-factor according to ASME 2.0 to 2.5. Maximum thickness for gasket: 2.0 mm. Tightening torque must not be exceeded, because then the functionality of the valve can be compromised. Tightening torques in Nm are designed for gaskets according to EN 1514-1, ASME B16.21 and counter flanges according to EN 1092-1, EN 1759-1, ASME B16.47.

4.1.2 Tightening torque for screws in covers

Screw dim.	M6	M8	M10	M12	M16	M20	M24
Tightening torque Nm MV 1)	10	25	47	57	140	273	472

1) Mv-recommendations refer to flat burr-free surfaces lubricated with a good quality lubricant.

Tightening torque for ball segment

Screw dim.	M5	M6	M8	M10	M12	M16	M20	M24
Tightening torque Nm	6,6	12	29	54	94	228	442	765

Tightening torque for stuffing box nuts

The table applies to expanded graphite stuffing boxes. For stuffing boxes made of other materials, a slightly lower torque must be used.

							Torque	
							1) First	2) Final
Type	DN	PN	di	Dy	Bolt	Qty.	Nm	Nm
HVVF/HVVW	40/32, 40, 50	40	15	24	M6	2	5	3
HVVW	65	40	20	30	M8	2	9	5
HVVF/ HVVW/ HVVF-C	80	25	20	30	M8	2	9	5
HVVF/ HVVW/ HVVF-C	100	25	20	30	M8	2	9	5
HVVF/ HVVW	125/150	25	25	35	M8	2	10	6
HVVF-C	150	25	25	35	M8	2	10	6
HVVF/ HVVW	150/200	25	30	40	M10	2	14	8
HVVF-C	200	25	30	40	M10	2	14	8
HVVF/ HVVW	200/250	25	35	45	M10	2	16	9
HVVF-C	250	25	35	45	M10	2	16	9
HVVF/ HVVF-C	250/300	25	40	55	M12	2	33	19

1) A first compression.
The nuts must be tightened alternately repeatedly until all achieves the specified torque.

2) The final compression.
Before the final compression, loosen the nuts and thereafter tighten again at the specified final torque. The nuts must again be tightened alternately repeatedly until all achieves the specified torque.

4.2 Pressure and temperature rating

Pressure temperature relations from EN1092-1:2007.
Max working pressure in bar (g) for Stainless Steel 1.4408 or CF8M

		Working temperature		
		100 °C	150 °C	200 °C
Pressure class	PN10	10	9	8,4
	PN16	16	14,5	13,4
	PN25	25	22,7	21
	PN40	40	36,3	33,7
	Class 300	42,2	38,5	35,7
	Class 600	84,4	77	71,3

Minimum working temperature -60°. If lower temperatures are needed contact Somas.

5 Assembly

5.1 Unpacking and transportation

Inspect the ball segment valve for transport damage when unpacking. The protective caps must only be removed immediately before assembly. The valve must be stored on a suitable base and protected against dirt until installed.

The valve must be stored in a cool, dry, clean place, not in direct contact with the floor. The valve must always be protected against dirt during storage and assembly, see Technical Information sheet, Ti-935 that is available at www.somas.se.

Warning!

When transporting and handling the valve, observe the weight of the valve or of the whole unit. Do not walk under suspended loads.

Transportation must be carried out with suitable hoisting equipment as shown in (➔ Fig.5-1). The picture shows a standard situation. Please note that all possible situations that can occur can not be covered in this lift instruction.

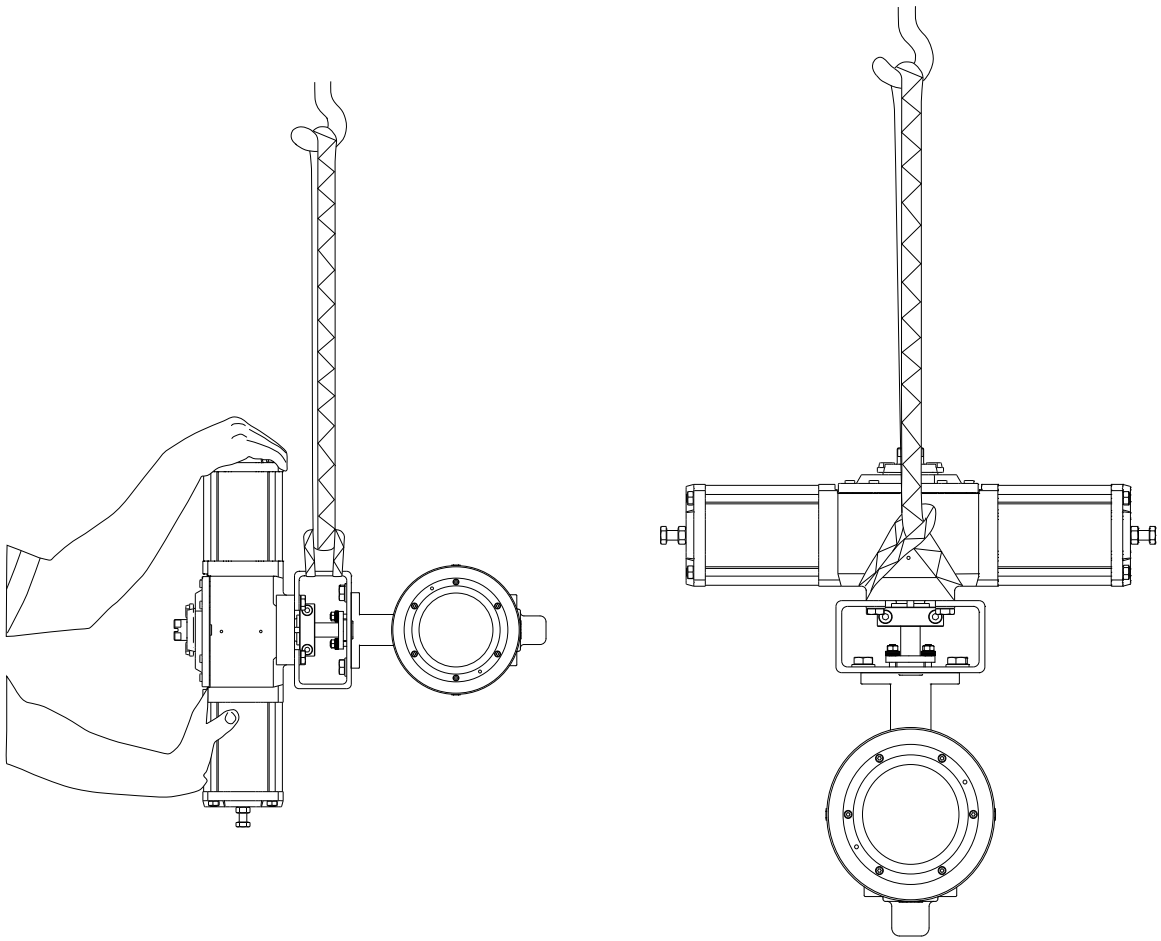


Fig.5-1 Lifting.

5.2 Installation of the valve in the pipeline

Attention!

The valve is normally installed in the pipeline complete with mounted actuator.

Mounting in horizontal pipes

How Somas valves are mounted in a horizontal pipe can depend on a variety of factors like the media, the application as such and available space.

Somas valves (ball valves, segmented valves and butterfly valves) should generally be mounted:

- In the first place with the shaft horizontally.
- If it is necessary to deviate from above, the spindle should point upwards in the upper half plane
- For media that has a thick ”bottom fraction” that can accumulate in the lower shaft bearing, avoid mounting with the shaft straight up or near straight up.
- Mounting with the shaft pointing down in the lower half plane should be avoided, and especially mounting with the shaft straight down.
- If there are strong reasons for choosing the mountings that contradict the instructions above, Somas should be contacted to evaluate the risks associated with these mountings.

The direction of flow is indicated with arrows on the valve body. Fix the pipeline correctly to prevent the exertion of external forces on the valve.

Warning!

Before carrying out maintenance or repair work on the valve with actuator as well as installation and disassembly of the ball segment valve in the pipeline, always disconnect the compressed air supply to the actuator.
Single action actuators may move to “open” or “closed” position without being connected to the air system.

5.2.1 Important information for installation

- Only remove protective devices immediately before installation of the valve.
- Counterflanges must be in accordance to the European or ASME standards.
- Ensure that the valve is not dirty and the pipeline is cleanly purged. Dirt damages the seat and the ball segment and leads to leakages.
- Ensure that the sealing surfaces of the counterflanges are clean and parallel.
- Ensure that the valve and the gaskets are correctly centred and gaskets of the correct quality are used. The sealing function of the valve depends on the gasket on the inlet side, which transmits the pressure from the connecting flange to the cover plate (➔ Fig.5-2)
- Tighten the flange bolt carefully. The tightening torque depends on the bolt size (➔ Tab.4-1). Keep the valve closed when it is not put into operation.
- **Valves can be delivered with threaded connection holes intended for TA Luft, flushing, lubrication, steam etc. Components and equipment to be connected shall fulfil the safety requirements according to the PED (2014/68/EU). Pipe threads with parallel threads and a separate sealing ring shall be used.**

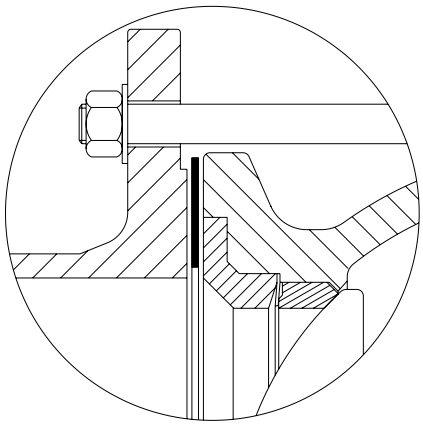


Fig.5-2 Gasket.

5.3 Commissioning

1. Ensure that the valve is cleaned well before commissioning. Dirt damages the ball segment and/or seat and leads to leakages.
2. Open the valve completely.
3. Check the stuffing box when the pipe system is pressuerized and retighten the nuts of the stuffing box gland in the event of leakage.

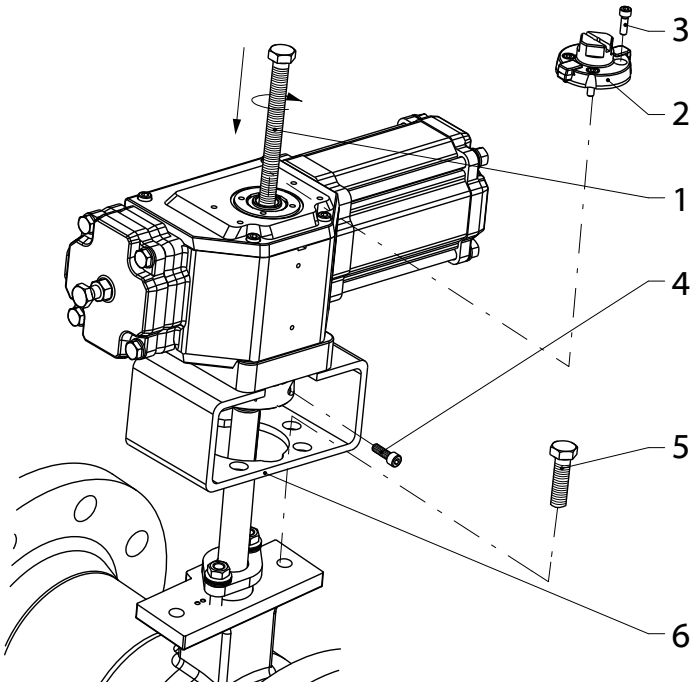
5.4 Disassembly of the pneumatic actuator

Note

Observe also the detailed information in the operating manual of the actuator Mi-503EN.

Warning!	
Before assembling or disassembling the pneumatic actuator of a ball segment valve installed in the pipeline depressurise the relevant valve in the pipeline system, isolate the valve and remove the medium before working on the valve. The pressurised medium may lead to injuries to personnel.	

Warning!	
Before carrying out maintenance or repair work on the valve with actuator as well as installation and disassembly of the ball segment in the pipeline, always disconnect the compressed air supply to the actuator. Single action actuators may move to “open” or “closed” position without being connected to the air system.	



1	Puller	3	Screw	5	Bolt
2	Driver	4	Clamping ring bolts	6	Bracket

Fig.5-3 Disassembly of the actuator (schematic diagram)

To avoid damage to the seat (s) and ball segment should a puller be used when removing the actuator from the valve. Pullers provided by Somas, part number according to the table below.

Pullers

Actuator size	**A11**	**A13**	**A21**	**A22**	**A23**	**A24**	**A31**	**A32**
Article no.	34786	34786	34786	34786	34786	34786	34787	34787
Actuator size	**A33**	**A34**						
Article no.	34787	34787						

1. Undo the clamping ring bolts (➔ Fig.5-3/4).
2. Remove the accessory parts such as positioners and end position limit switches.
3. Remove the screws (➔ Fig.5-3/3) to remove the driver (➔ Fig.5-3/2).
4. Remove the bracket (➔ Fig.5-3/6) from the valve by removing the bolts (➔ Fig.5-3/5).
5. Press the actuator off the valve with the puller (➔ Fig.5-3/1) Turn the puller in until the actuator can be removed from the valve shaft.
6. Lift the actuator off and turn the puller out again.

5.5 Positioning of the shaft with disassembled actuator

The groove at the end of the shaft marks the position of the ball segment in the valve. The ball segment must be turned to the valve inlet when the valve is closed (➔ Fig.5-4).

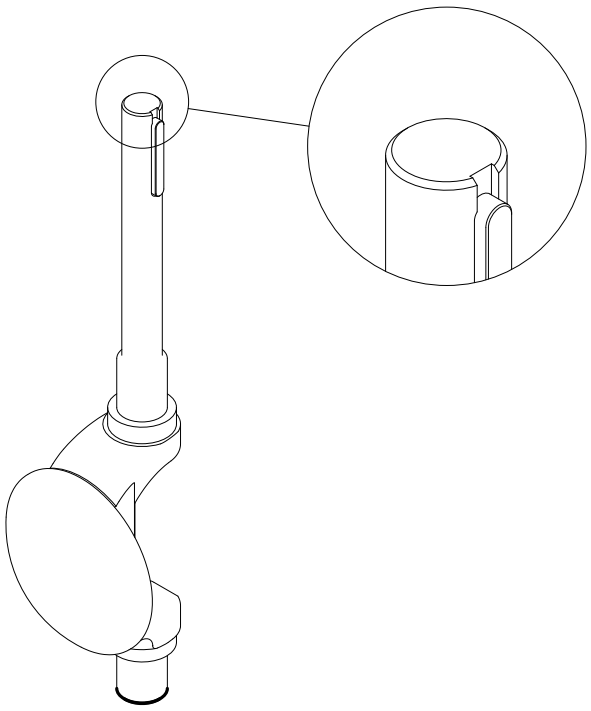


Fig.5-4 The groove at the end of the shaft marks the position of the ball segment in the valve.

5.6 Assembly of the pneumatic actuator

Note

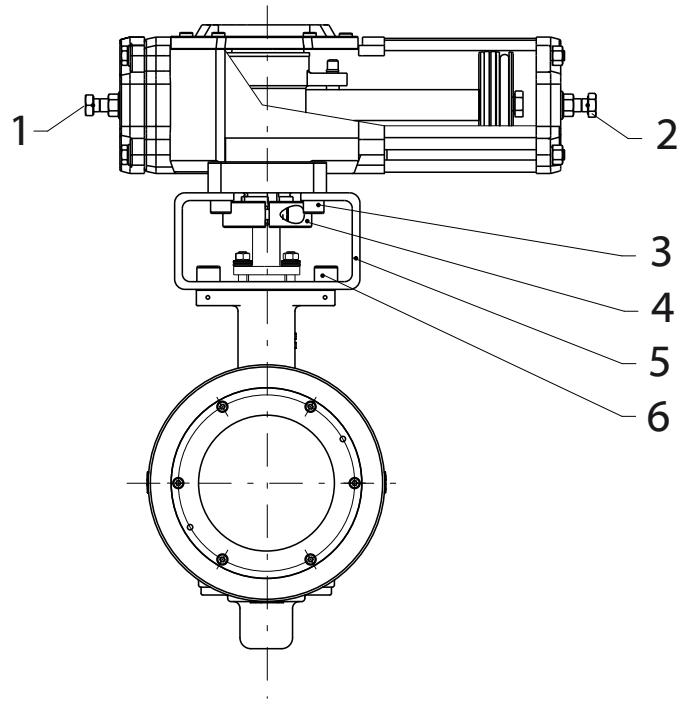
Observe also the detailed information in the operating manual of the actuator Mi-503 EN.

Warning!	
Before assembling or disassembling the pneumatic actuator of a ball segment valve installed in the pipeline depressurise the relevant valve in the pipeline system, isolate the valve and remove the medium before working on the valve. The pressurised medium may lead to injuries to personnel.	

Warning!	
Before carrying out maintenance or repair work on the ball segment valve with actuator or installation and removal of the ball segment valve from the pipeline, always disconnect the compressed air supply to the actuator. Single action actuators may move to “open” or “closed” position without being connected to the air system.	

Danger!

Risk of injury!
Observe movements of the ball segment.
Keep hands, tools and other objects away from the area where the ball segment moves. The valve with ball segment mounted may work as a cutting tool. Do not leave any foreign objects in the valve body. The ball segment of the ball segment valve always works as a separate device. There is no difference whether an actuator is installed or not. The position of the ball segment may change during transport or handling of the ball segment valve.



1	End stop bolt	4	Clamping ring
2	End stop bolt	5	Bracket
3	Bolt	6	Bolt

Fig.5-5 Assembly of the actuator (schematic diagram).

5.6.1 Actuator mounting alternatives

Following mounting positions are possible.

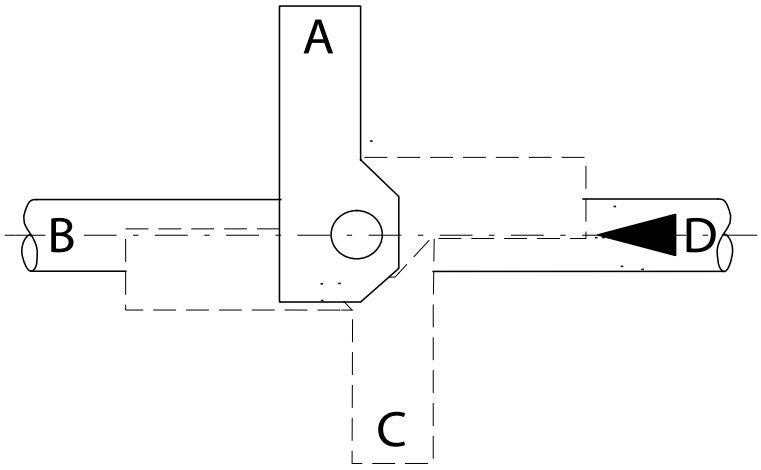


Fig.5-6 Actuator mounting position

Note

To prevent damage, do not fit the actuator with force.
When large actuators (both single - and double acting) are used in vertical pipes, install them with the cylinder in the pipe direction. This will result in less wear and easier maintenance.

Procedure

1. When using double action and spring closed actuators, ensure that the valve is in “closed” position.
2. When using spring opened actuators, ensure that the valve is in “open” position.
3. Lubricate the shaft and the key.
4. Fix the bracket (➔ Fig.5-5/5) to the actuator with the aid of the bolts (➔ Fig.5-5/3).
5. Place the actuator with the bracket in the required (position A, B, C or D) (➔ Fig.5-6) on the shaft of the valve body and fix the unit with the aid of the bolts (➔ Fig.5-5/6).
6. Fit the clamping ring (➔ Fig.5-5/4). Ensure that the clamping rings yellow marking follows the key on the valveshaft.
7. Tighten the bolts on the clamping ring (➔ Fig.5-5/4).
8. Set the actuators end positions. (➔ Kap. 6.9).

6 Maintenance

6.1 Disassembling the ball segment valve from pipeline

Attention!

The valve is normally removed from the pipeline complete with mounted actuator.

Warning!

Before carrying out maintenance or repair work on the ball segment valve with actuator or installation and removal of the ball segment valve from the pipeline, always disconnect the compressed air supply to the actuator.
Single action actuators may move to “open” or “closed” position without being connected to the air system.

Warning!

Inform yourself of the properties of the medium. Protect yourself and your environment from hazardous or poisonous substances.
Observe the safety instructions in the safety data sheets of the manufacturers.
Ensure that no medium can enter the pipeline during maintenance work.

Warning!

Do not remove the valve from the line as long as the valve is under pressure!
Dismantling or disassembly of a valve under pressure leads to an uncontrolled pressure drop.
Always isolate the relevant valve in the pipeline system; depressurise the valve and remove the medium before working on the valve.

Warning!

When transporting and handling the valve, observe the weight of the valve or of the whole unit.
Never lift the valve by its positioner, limit switch, solenoid valve or piping. Place the hoisting ropes securely according to lift instruction.
The valve or parts thereof may injure persons if dropped.
Do not walk under suspended loads.

Procedure

1. Seal off the pipeline section containing the ball segment valve.
2. Depressurise the sealed off pipeline section.
3. Drain the sealed off pipeline section.
4. If necessary, purge the pipeline section.
5. Check the temperature of the pipeline and of the valve. Allow the pipeline and valve to cool down to the ambient temperature if necessary.
6. Secure the valve against falling (➔ Fig.5-1).
7. Undo the boltings between the ball segment valve and the pipeline (➔ Chap. 5.2).

6.2 Maintenance

Regular maintenance is necessary to be able to operate the valve with maximum efficiency and low operating costs. Somas products enable trouble-free operation and are very low-maintenance.

Check the valve, the actuator and accessory parts regularly to ensure safe, trouble-free operation. The tightening torques of the boltings on the flanges must be checked in accordance with the specifications of the gasket manufacturer and tightened if necessary. The stuffing box must be checked regularly and re-tightened if necessary. The most important replacement parts are contained in the Somas Sealing Kit (SK). These kit contains all necessary seals and sealing rings for basic repair of the valve.

NOTE

Note the details of the type plate (➔ Fig.6-1) before contacting the contact partners given in the order confirmation. Only use original replacement and wear parts from Somas Instrument AB.

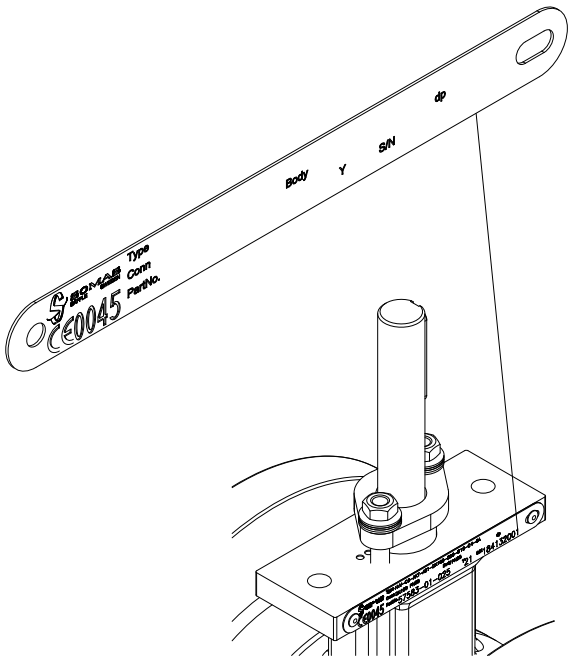


Fig.6-1 Type plate.

6.3 Installation and disassembly of the stuffing box

Check the stuffing box after commissioning and then regularly.

Changing the stuffing box is normally a part of valve overhaul. Follow applicable safety instructions concerning dismounting of the ball segment valve from pipeline (➔ Chap. 6.1) and dismounting the pneumatic actuator from the ball segment valve (➔ Chap. 5.4).

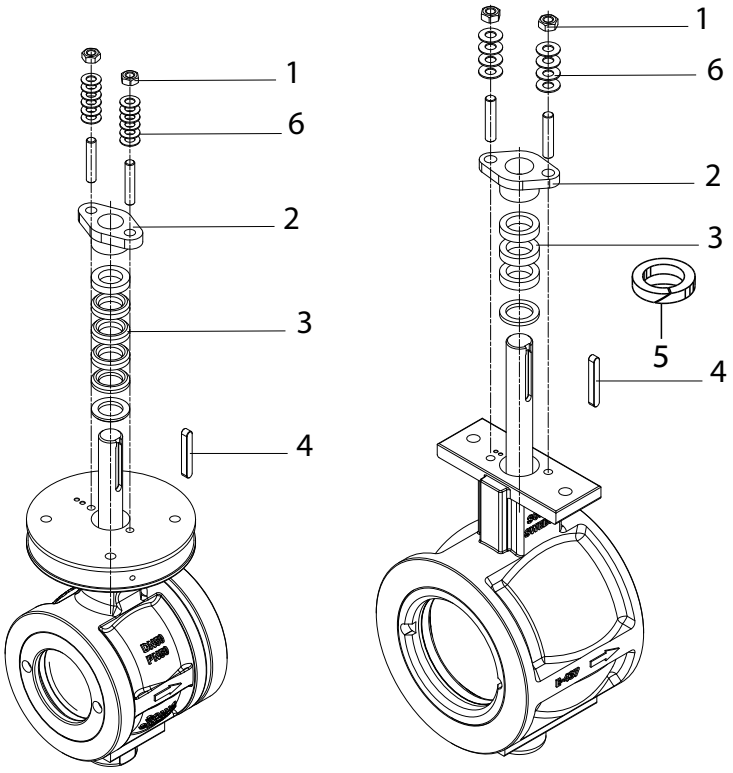
When indicated it is possible to change the stuffing box if the valve is installed in the pipeline. For this regard the following safety instructions.

Warning!	
Before replacing the stuffing box of a ball segment valve installed in the pipeline depressurise the relevant valve in the pipeline system, isolate the valve and remove the medium before working on the valve. The pressurised medium may lead to injuries to personnel.	

Warning!	
Before carrying out maintenance or repair work on the ball segment valve with actuator or installation and removal of the ball segment valve from the pipeline, always disconnect the compressed air supply to the actuator. Single action actuators may move to “open” or “closed” position without being connected to the air system.	

Installation and disassembly of the stuffing box

When using graphite stuffing boxes, the actuator can remain installed. In this case you can install the graphite rings by cutting through them at an angle (➔ Fig.6-2/5) and then carefully pushing them over the shaft.



1	Nut	3	Stuffing box set Graphite	5	Stuffing box ring (cutted)
2	Stuffing box gland	4	Key	6	Disc springs

Fig.6-2 Assembly of the stuffing box.

1. Remove the key (➔ Fig.6-2/4) and undo the nuts (➔ Fig.6-2/1) and disc springs (➔ Fig.6-2/6 Please observ the position of the disc springs.
2. Remove the stuffing box gland (➔ Fig.6-2/2). Remove the used graphite rings (➔ Fig.6-2/3).
3. Mount the new graphite rings (➔ Fig.6-2/3).
4. Fit and mount the gland and disc springs and the nuts. Please observ the position of the disc springs, see illustration (➔ Fig.6-3).
5. Tighten the nuts (➔ Fig.6-2/1) alternately, but not too tight.
6. Insert the new key (➔ Fig.6-2/4). Use a rubber hammer and attach the key to the shaft.

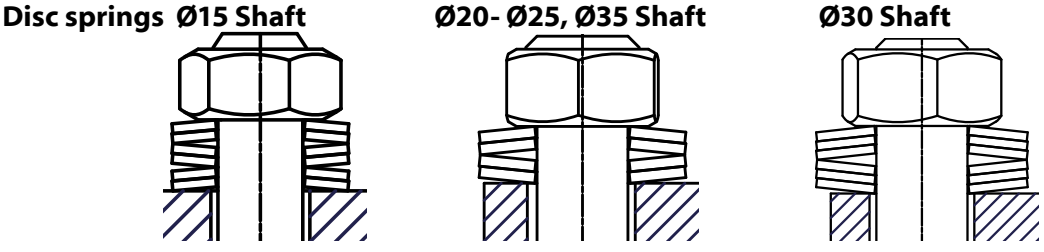


Fig.6-3 Posistion of the disc springs.

6.4 Replacing the cover seal (gasket)

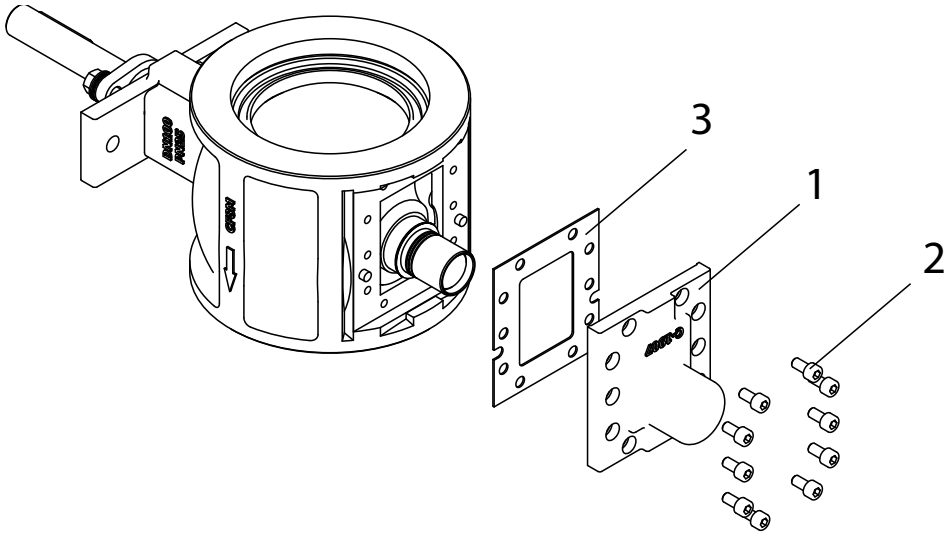
Changing the cover seal (gasket) is normally a part of valve overhaul.

Warning!

Do not remove the valve from the line as long as the valve is under pressure!
Dismantling or disassembly of a valve under pressure leads to an uncontrolled pressure drop.
Always isolate the relevant valve in the pipeline system; depressurise the valve and remove the medium before working on the valve.

Warning!

Before carrying out maintenance or repair work on the ball segment valve with actuator or installation and removal of the ball segment valve from the pipeline, always disconnect the compressed air supply to the actuator.
Single action actuators may move to “open” or “closed” position without being connected to the air system.



1 Cover 2 Screw 3 Cover Seal (Gaske)t

Fig.6-4 Replacing the cover seal (gasket).

1. Undo the screws (➔ Fig.6-3/2) and remove the cover (➔ Fig.6-3/1).
2. Remove the cover seal (gasket) (➔ Fig.6-3/3) from the cover and the valve body.
3. Fit the new seal (gasket).
4. Fit the cover into the valve body and tighten the screw.

6.5 Replacing the HiCo seat

Attention!

To replace the seat, the valve should when possible be securely clamped in a clamping device with the inlet side facing upwards!

Danger!

Risk of injury!
Observe movements of the ball segment. Keep hands, tools and other objects away from the area where the ball segment moves. The valve with ball segment mounted may work as a cutting tool. Do not leave any foreign objects in the valve body. The ball segment of the ball segment valve always works as a separate device. There is no difference whether an actuator is installed or not. The position of the ballsegment may change during transport or handling of the ball segment valve.

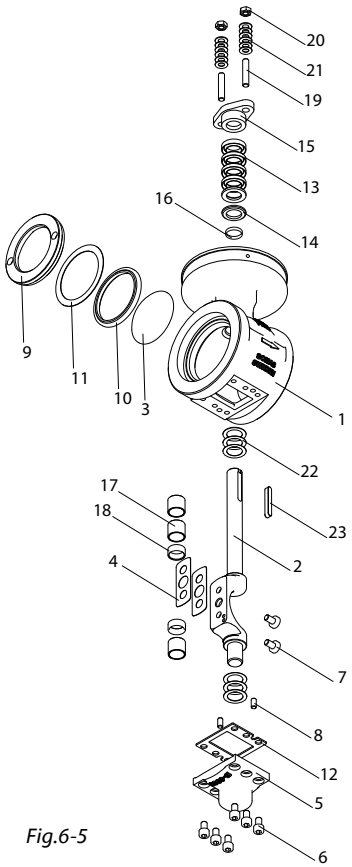
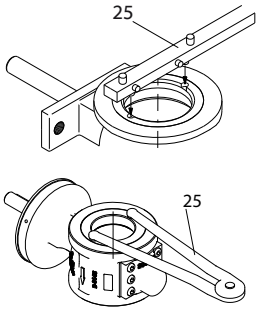


Fig.6-5



The cover plate is threaded on some variants. Special tools are recommended for loosening the cover plate (➔ Fig 25).

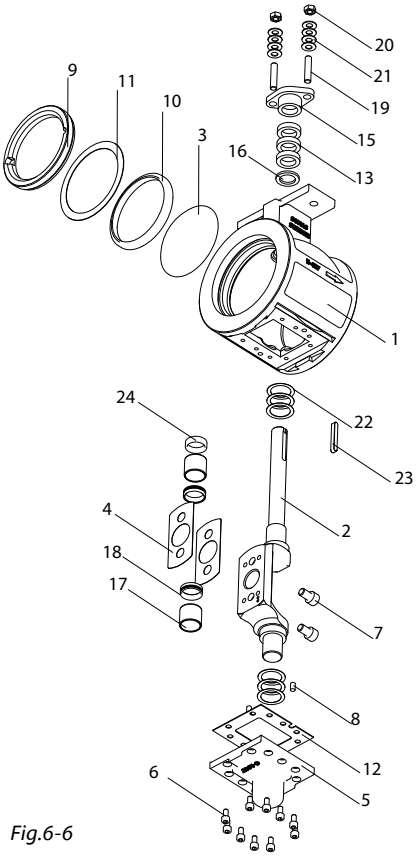


Fig.6-6

1 Valve body
2 Shaft device
3 Ball segment
4 Shaft shims
5 Cover
6 Screw
7 Screw
8 Cylindrical pin
9 Cover plate
10 Seat
11 Spring washer
12 Cover seal
13 Stuffing box
14 Sleeve
15 Gland
16 Washer
17 Bearing
18 Sealing ring
19 Stud
20 Nut
21 Disc spring
22 Shims
23 Key
25 Special tool (f. cover plate)

6.5 Replacing the HiCo seat

Attention!

To replace the seat, the valve should when possible be securely clamped in a clamping device with the inlet side facing upwards!

Danger!

Risk of injury!
Observe movements of the ball segment.
Keep hands, tools and other objects away from the area where the ball segment moves. The valve with ball segment mounted may work as a cutting tool. Do not leave any foreign objects in the valve body. The ball segment of the ball segment valve always works as a separate device. There is no difference whether an actuator is installed or not. The position of the ball segment may change during transport or handling of the ball segment valve.

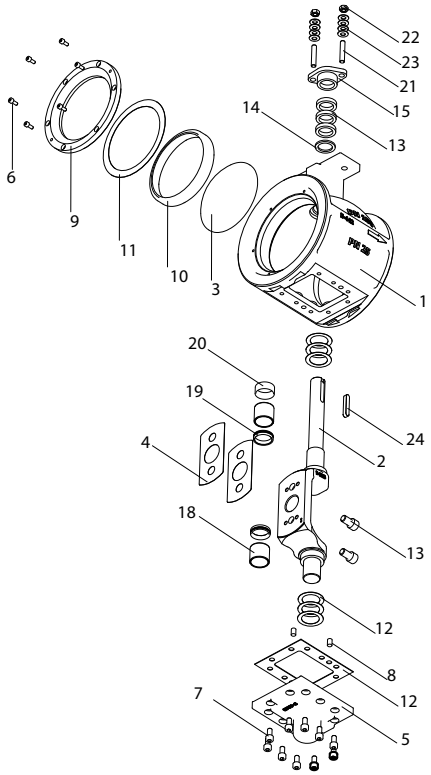


Fig.6-7

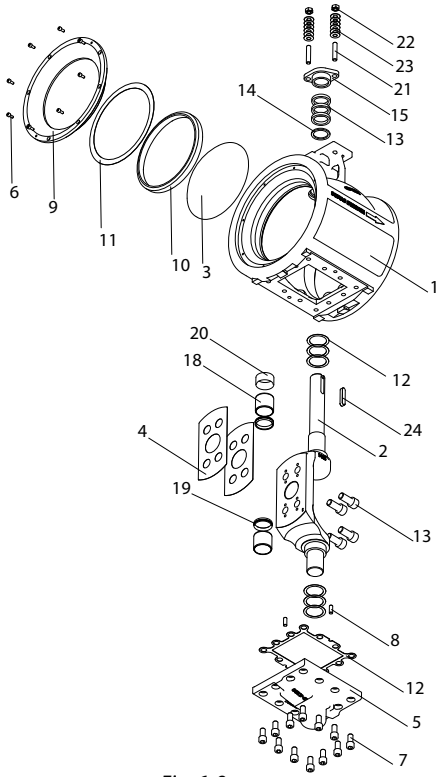


Fig. 6-8

1	Valve body	8	Cylindrical pin	15	Gland	24	Key
2	Shaft device	9	Cover plate	18	Bearing		
3	Ball segment	10	Seat	19	Sealing ring		
4	Shaft shims	11	Spring washer	20	Sleeve		
5	Cover	12	Cover seal (gasket)	21	Stud		
6	Screw	13	Screw	22	Nut		
7	Screw	14	Washer	23	Disc spring		

6.5.1 Disassembly

Condition

The actuator is disassembled.

Procedure DN 40-100

1. Remove the cover plate (➔ Fig.6-5/9, 6-6/9) with a hook tool (➔ Fig.6-5/25).
2. Remove the spring washer (➔ Fig.6-5/11, 6-6/11) and seat (➔ Fig.6-5/10, 6-6/10).

Procedure DN 125-300

1. Undo the screws (➔ Fig.6-7/6) and remove the coverplate (➔ Fig.6-7/9).
2. Remove the spring washer (➔ Fig.6-7/11)and the seat (➔ Fig.6-7/10

Note

The cover plates is threaded on some variants. For these valves, it is recommended to use a special tool to remove the cover plates (➔ Fig.6-5/25, Fig.6-6/25).

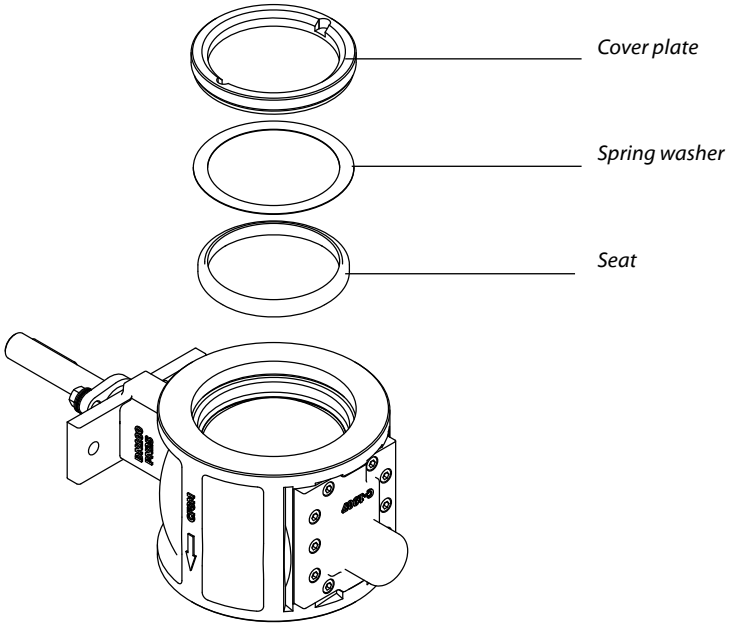


Fig. 6-9

6.5.2 Cleaning, grinding and lubrication

1. Clean the seat recess and cover plate. Check the surface of the ball segmen and replace it if necessary. Damage can very quickly destroy a new seat. If the ball segment has to be replaced, see section “Replacing ball segment” (➔ Chap. 6.7).
2. Clean all parts.
3. Grind into the new seat against the ball segment. Add to valve grinding paste and rub the seat and ball segment against each other until a continuous matte finish obtained around sealing surfaces (➔ Fig.6-10.2).
4. Lubricate the seat surface with molybdenum disulfide paste

6.5.3 Assembly

1. Locate the valve with the inlet side pointing upwards and ensure that it is opened by 90° (from the closed position).
2. Mount the new seat and the spring washer (➔ Fig.6-10).
1. Mount the cover plate. The cover plates is threaded on some valve variants. For these valves, it is recommended to use a special tool to remove the cover plates (➔ Fig.6-5/25, Fig.6-6/25).
2. Fit the actuator (➔ Chap.5.6) and check the end positions (➔ Chap.6.9).

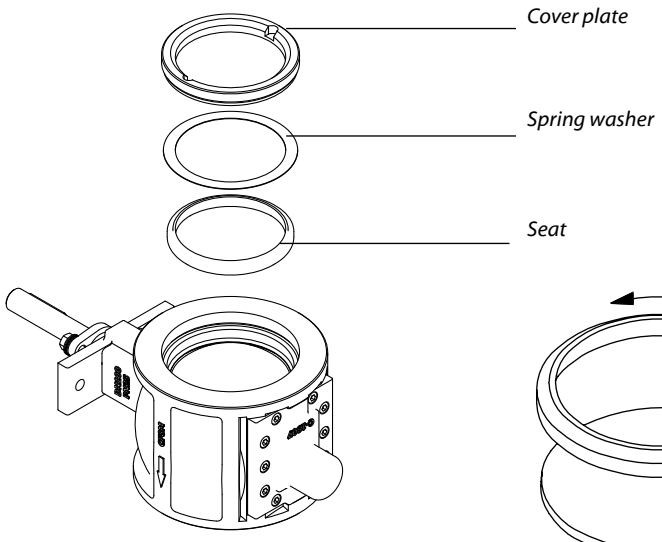


Fig.6-10

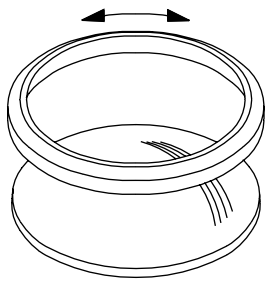


Fig.6-10.2

6.6 Replacing the ball segment

To replace the ball segment, the complete valve assembly is dismounted from the pipeline (➔ Chap. 6.1) and the actuator is dismounted from the valve (➔ Chap. 5.4).

Danger!

Risk of injury!
Observe movements of the ball segment.
Keep hands, tools and other objects away from the area where the ball segment moves. The valve with ball segment mounted may work as a cutting tool. Do not leave any foreign objects in the valve body. The ball segment of the ball segment valve always works as a separate device. There is no difference whether an actuator is installed or not. The position of the ball segment may change during transport or handling of the ball segment valve.

6.6.1 Disassembly

Condition

The actuator is disassembled.

Procedure

1. Undo the screws (➔ Fig.6-7/6) and remove the cover plate (➔ Fig.6-7/9) or use a special tool (Fig. ➔ 6-6/25) and remove the cover plate (➔ Fig. 6-6/9).

Note

The cover plates is threaded on some valve variants. For these valves, it is recommended to use a special tool to remove the cover plates (➔ Fig.6-5/25, Fig.6-6/25).

2. Remove the spring washer (➔ Fig. 6-5/11) or (➔ Fig. 6-7/11) and the seat (➔ Fig.6-5/10) or (➔ Fig.6-7/10)
3. Turn the ball segment into the “closed” position and place the valve with the outlet side pointing upwards on a soft surface.
4. Undo the screws(➔ Fig.6-5/7) or (➔ Fig.6-7/13) alternately with the aid of a Allen key.
5. Remove the ball segment (➔ Fig.6-5/3 or (➔ Fig.6-7/3).
6. If the valve is equipped with shaft shims - remove these shaft shims (➔ Fig.6-5/4 or (➔ Fig.6-7/4) from the shaft (➔ Fig.6-5/2 or (➔ Fig.6-7/2) .

1. Clean all parts.

Note

Grind the ball segment into the new seat. Use valve grinding paste and rub the seat and ball segment against each other until the surfaces of the sealing area are evenly matt (➔ Fig.6-12).

6.6.2 Centre ball segment

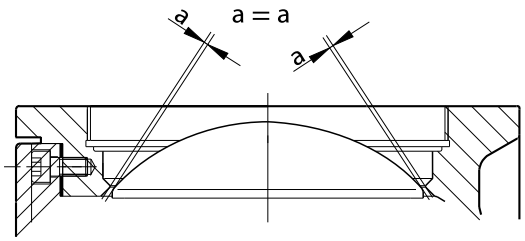


Fig.6-14 Centre ball segment

1. Fit the new ball segment without the bolts to test.
2. Ensure that the ball segment is centred with the valve body. The ball segment must not be attached with too much play or too tightly. There must be an evenly sized gap around the complete ball segment. This can be checked more precisely with a feeler gauge on the relevant shaft end (➔ Fig. 6.11). Set the position of the ball segment with the aid of shims.
   New Shims can be found in Somas Repair Kit.

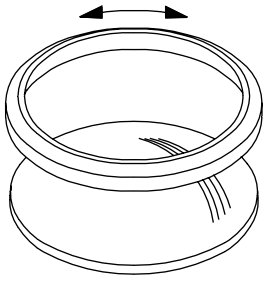


Fig.6-14.2 Grinding-in

6.6.3 Cleaning, grinding and lubrication

1. Clean the seat recess, the cover plate and the contact surfaces between shaft device and ball segment.
2. Lubricate the bolts (➔ Fig.6-5/13) or (➔ Fig.6-7/13) of the shaft device with molybdenum disulfide paste.
3. Lubricate the seat surface and the cover plate with molybdenum disulfide paste. For valves with screw-on cover plates, also lubricate the thread in the valve body.

6.6.4 Assembly

1. Fit the shaft shims (➔ Fig.6-13.1) to the shaft. The number of shaft shims to be mounted is according to the number of shims that was earlier mounted at the shaft.
   Mount the ball segment (➔ Fig.6-13.1) to the shaft.
2. Refit the screws (➔ Fig.6-13.1) to the segment. Lock the bolts with a centre punch on the back of the shaft device. It is recommended to use the existing centre marks on the back for this (➔ Fig.6-13.2).
3. Locate the valve with the inlet side pointing upwards and ensure that it is opened by 90° (from the closed position).

Note

The cover plates is threaded on some valve variants. For these valves, it is recommended to use a special tool to remove the cover plates (➔ Fig.6-5/25, Fig.6-6/25).

4. Mount the new seat and the spring washer and cover plate (➔ Fig.6-13.1).
5. Fit the actuator(➔ Chap. 5.6) and check the end positions. (➔ Chap. 6.9).

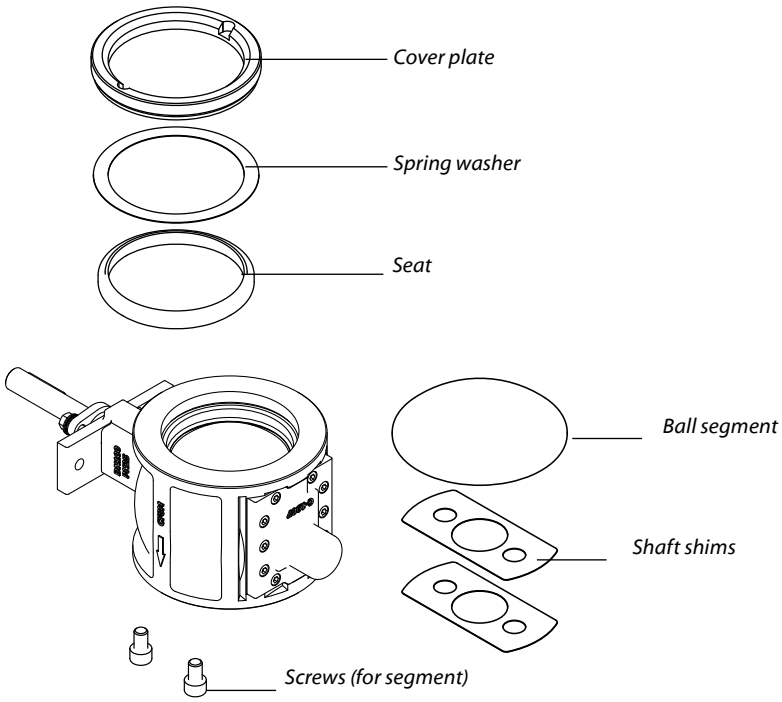


Fig.6-13.1 Assembly.

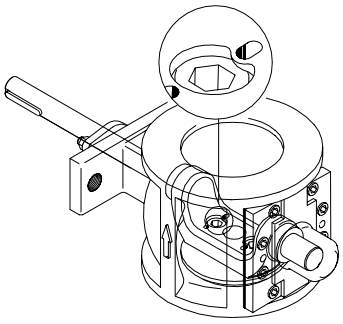


Fig.6-13.2 Centre marks.

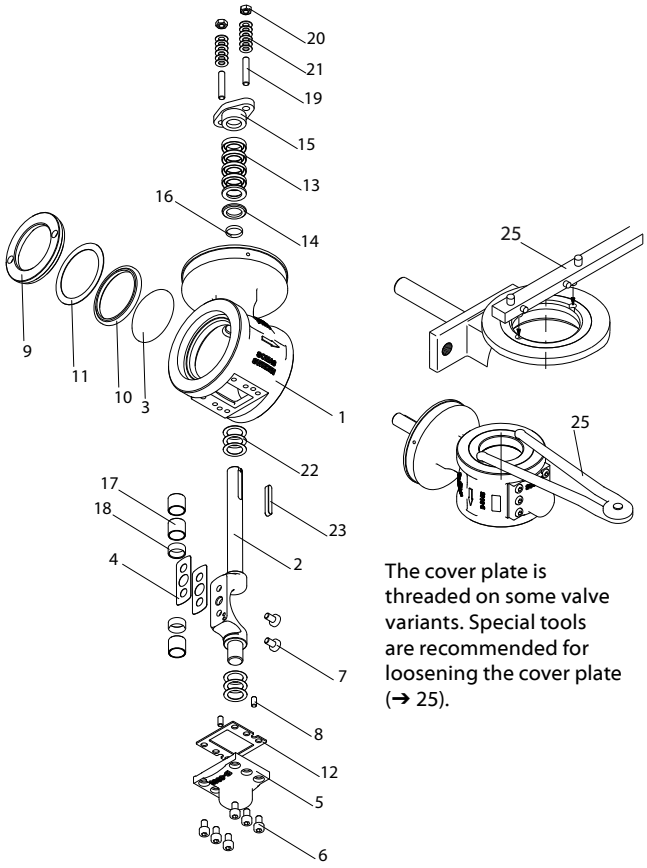
6.7 Replacing the shaft device

To replace the shaft device, the complete valve assembly is dismounted from the pipeline (➔ Chap. 6.1) and the actuator is dismounted from the valve (➔ Chap. 5.4).

Danger!

Risk of injury!
Observe movements of the ball segment.
Keep hands, tools and other objects away from the area where the ball segment moves. The valve with ball segment mounted may work as a cutting tool. Do not leave any foreign objects in the valve body. The ball segment of the ball segment valve always works as a separate device. There is no difference whether an actuator is installed or not. The position of the ball segment may change during transport or handling of the ball segment valve.

6.7.1 Disassembly



The cover plate is threaded on some valve variants. Special tools are recommended for loosening the cover plate (➔ 25).

Fig.6-14

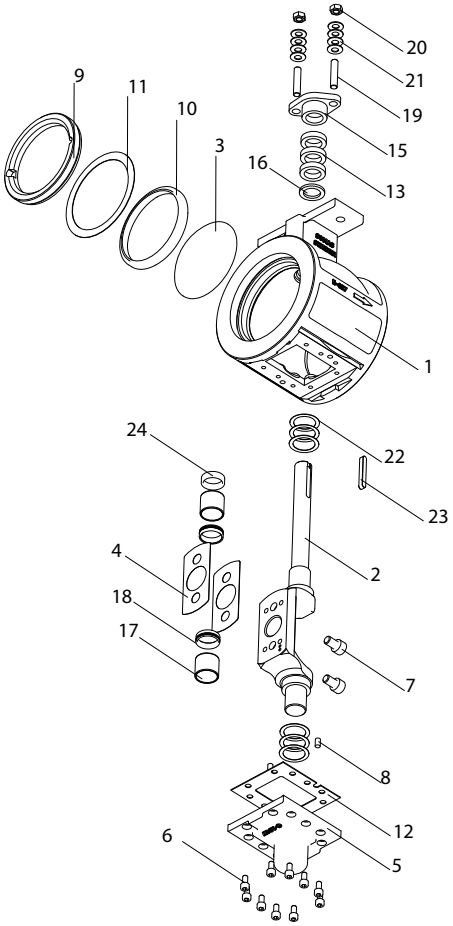


Fig. 6-15

1	Valve body	8	Cylindrical pin	15	Gland	22	Shims
2	Shaft device	9	Cover plate	16	Washer	23	Key
3	Ball segment	10	Seat	17	Bearing	25	Special tool (f. cover plate)
4	Shaft shims	11	Spring washer	18	Sealing ring		
5	Cover	12	Cover seal	19	Stud		
6	Screw	13	Stuffing box	20	Nut		
7	Screw	14	Sleeve	21	Disc spring		

6.7 Replacing the shaft device

To replace the shaft device, the complete valve assembly is dismounted from the pipeline (➔ Chap. 6.1) and the actuator is dismounted from the valve (➔ Chap. 5.4).

Danger!

Risk of injury!
Observe movements of the ball segment.
Keep hands, tools and other objects away from the area where the ball segment moves. The valve with ball segment mounted may work as a cutting tool. Do not leave any foreign objects in the valve body. The ball segment of the ball segment valve always works as a separate device. There is no difference whether an actuator is installed or not. The position of the ball segment may change during transport or handling of the ball segment valve.

6.7.1 Disassembly

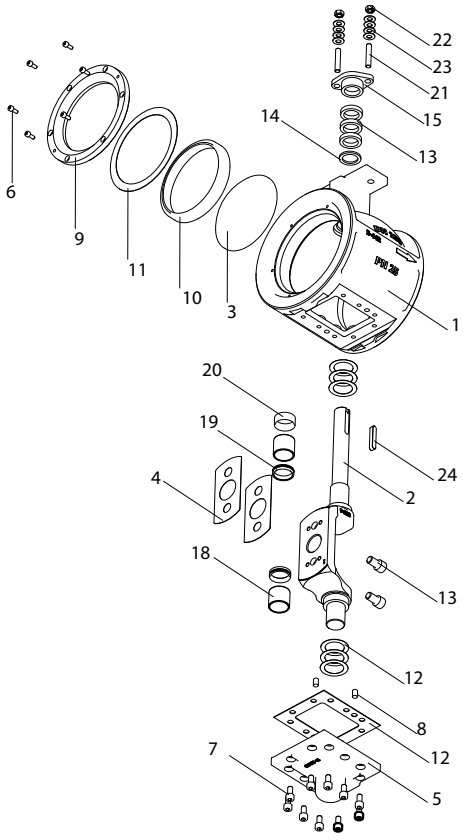


Fig.6-16

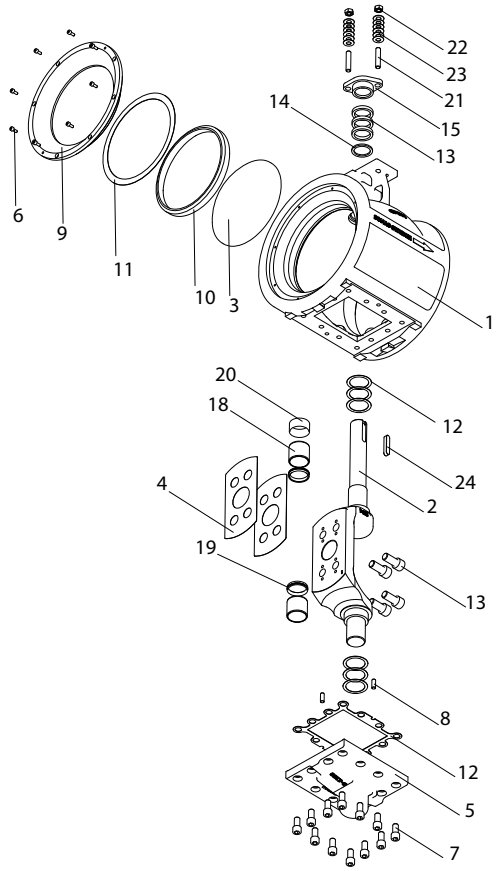
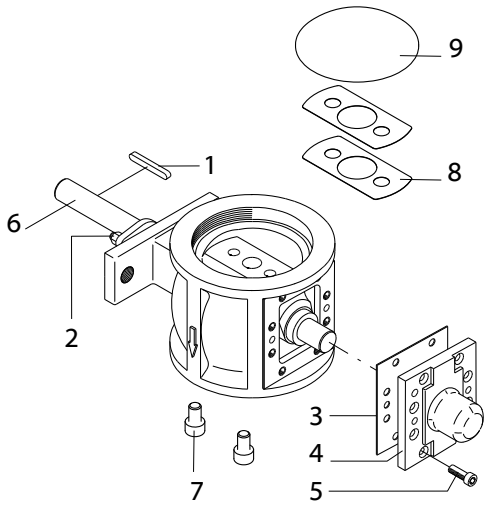


Fig. 6-17

F

1	Valve body	8	Cylindrical pin	15	Gland	24	Key
2	Shaft device	9	Cover plate	18	Bearing		
3	Ball segment	10	Seat	19	Sealing ring		
4	Shaft shims	11	Spring washer	20	Sleeve		
5	Cover	12	Cover seal (gasket)	21	Stud		
6	Screw	13	Screw	22	Nut		
7	Screw	14	Washer	23	Disc spring		



1	Key	3	Seal (Gasket)	5	Screw
2	Nut	4	Cover	6	Shaft device

Fig.6-18 Replacing shaft device.

1. Undo the screws (➔ Fig.6-16/6) or use the special tool (➔ Fig.6-14/25) and remove the cover plate (6-14/9,6-16/9).

Note

The cover plate is threaded on some valve variants. For these valves, it is recommended to use a special tool to remove the cover plates (➔ Fig.6-14/25).

2. Remove the spring washer (➔ 6-14/11, 6-16/11,) and the seat (➔ 6-14/10, 6-16/10).

3. Turn the ball segment into the “closed” position and place the valve with the outlet side pointing upwards on a soft surface.

4. Check the surface of the ball segment for damage. Damage can very quickly destroy a new seat. If the ball segment has to be replaced, see section “Replacing ball segment” (➔ Chap. 6.7).

5. Remove the ball segment and the shims (➔ 6-14/4, 6-16/4 from the shaft device.

6. Undo the nuts (➔ 6-14/20, 6-16/20) to reduce friction of the shaft in the stuffing box. Undo the screws (➔ 6-14/7, 6-16/7) alternately with the aid of a Allen key.

7. Remove the screws (➔ 6-14/6, 6-16/6) cover (➔ 6-14/5, 6-16/5) and the seal (gasket) (6-14/12 , 6-16/12).

8. Remove the key (➔ 6-14/23, 6-16/23).

9. Press the shaft down so that the shaft device can be removed through the opening on the underside of the valve.

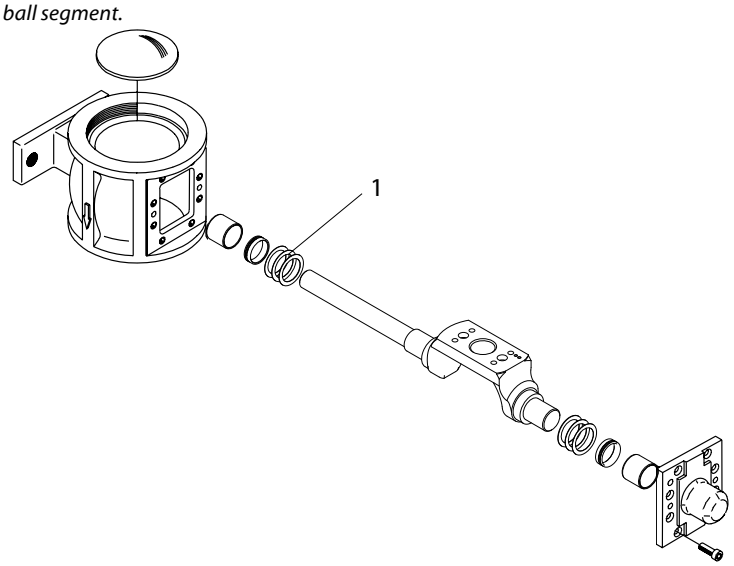
10. Remove the bearings (➔ 6-14/17, 6-16/17) and the sealing rings (➔ 6-14/23, 6-16/23) from the shaft.

6.7.2 Cleaning, grinding and lubrication

1. Clean the shaft bearing in the valve body and the cover.
2. Clean the sealing areas of the cover and the valve body.
3. Clean the seat recess and cover plate.
4. Ensure that the cover and the shaft bearing in the valve body are not damaged.
5. Lubricate the bolts of the shaft and the washers with molybdenum disulfide paste.
6. Lubricate the seat surface and the cover plate with molybdenum disulfide paste. For valves with screw-on cover plates, also lubricate the thread in the valve body.

6.7.3 Centre ball segment

Fig.6-19 Centre ball segment.



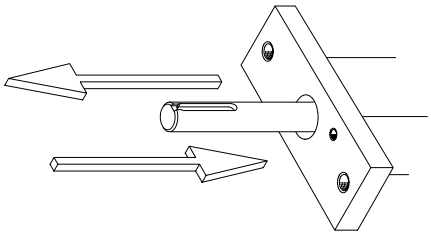


Fig.6-20 Centre ball segment (cont.)

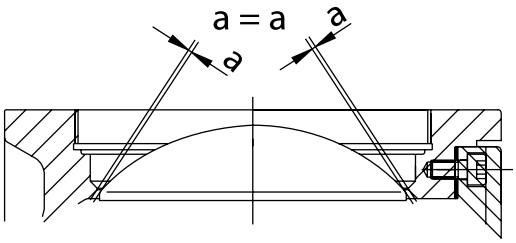
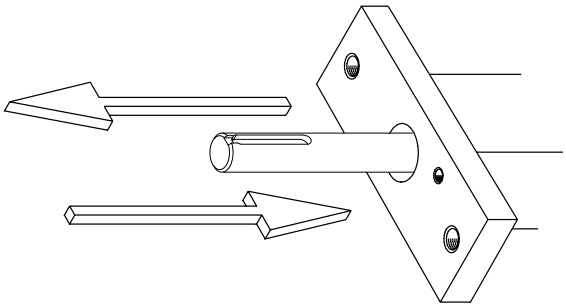


Fig.6-21 Aligning the ball segment.

1. Locate the valve with the inlet side pointing upwards and fit the new bearing sleeves if necessary.
2. Fit the shims (1 mm) to the long shaft of the new shaft device (➔ Fig.6-19/1).
3. Fit the shaft device and the cover without the (seal) gasket to test. Place the bolts next to the guide shaft devices on the inside of the cover. Only four bolts are required.
4. Fit the ball segment without the bolts to test.
5. Take the long shaft of the shaft device and pull the shaft device against the axial shoulder of the housing (➔ Fig.6-20).
6. Hold the shaft device in this position. Ensure that the ball segment is centrally aligned with the valve body.
7. There should be an even gap between the ball segment and the housing. This can be checked more precisely with a feeler gauge on the relevant shaft end (➔ Fig.6-21).
8. Correct the position of the shaft device in the housing by removing or adding shims (➔ Fig.6-19/1).

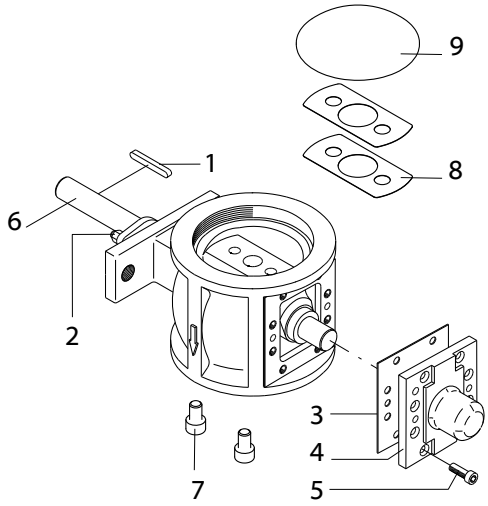


6.7.4 Axial adjustment of the shaft device

Fig.6-22 Axial adjustment of the shaft device.

1. Check the axial play. Open the cover and add the number of washers according to the difference between the two dimensions minus the permissible axial play. The axial play should be 0.1 - 0.2 mm. Attach the cover again without the seal (gasket).
2. Check the faultlessly turning of the shaft device.
3. When the shaft device has the correct turning, remove the cover and then the shaft device from the valve body.
4. Remove the shims from the shaft. Then mount the bearings (➔ Fig.6-14/7, 6-16/17) and the sealing rings (➔ Fig.6-14/23, 6-16/23 and the sleeve (if fitted) (➔ Fig.6-16/20) from the shaft .
5. Put back the shims to the shaft device.

6.7.5 Fitting the shaft device



1	Key	3	Seal (Gasket)	5	Screw	7	Shaft screw	9	Ball segment
2	Nut	4	Cover	6	Shaft device	8	Shaft shims		

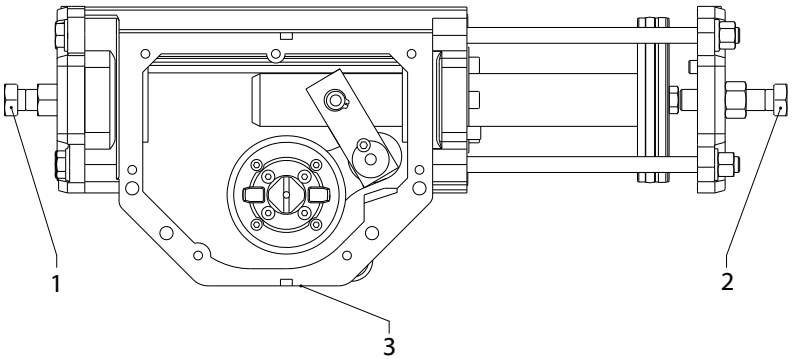
Fig.6-23 Fitting the shaft device.

1. Mount the shaft device (with shims) in to the valve body. (➔ Fig.6-23/3).
2. Refit the gasket. Attach the cover again and tighten the screws (➔ Fig.6-23/5).
3. Tighten the stuffing box and nuts (➔ Fig.6-23/2) alternately. Fit the key (➔ Fig.6-23/1).
4. Position the valve with the outlet side pointing upwards. Fit the shaft shims (➔ Fig.6-23/8) to the segment.
5. Refit the screws (➔ Fig.6-23/7) to the segment. Tighten crosswise. Lock the bolts with a centre punch on the back of the shaft device. It is recommended to use the existing centre marks on the back for this (➔ Fig. 6.13.2).
6. Position the valve with the inlet side pointing upwards.
7. Ensure that the valve is opened by 90° (from the closed position).
8. Fit the seat, spring washer and cover plate again.
9. Fit the pneumatic actuator (➔ Chap. 5.6) and check the end positions (➔ Chap. 6.9).

6.8 Adjustment of the end positions

Danger!

Risk of injury!
Observe movements of the ball segment.
Keep hands, tools and other objects away from the area where the ball segment moves when the actuator is connected to compressed air system. Single action actuators may move to “open” or “closed” position without being connected to the air system.



1 End position bolt “open” position 2 End position bolt “closed” position 3 Type plate

Fig.6-25 End position bolts on pneumatic actuator.

6.8.1 Setting of the “closed” position for type HVVW

1. Connect compressed air via a pressure reduction valve 2-3 bar depending on actuator specification.
2. Operate the valve to test.
3. Check whether the valve closes correctly. With a correct setting, the ball segment is centrally aligned with the seat. The position of the ball segment can be determined by looking into the valve through the outlet side.

Procedure

1. If the ball segment does not reach the “closed” position, undo the locknut of the end position bolt and turn the end position bolt (➔ Fig.6-25/2) 1-2 turns counterclockwise.
2. If the ball segment moves beyond the “closed” position, undo the locknut of the end position bolt and turn the end position bolt (➔ Fig.6-25/2) 1-2 turns clockwise.
3. Operate the ball segment to test.

When the correct setting is reached, attach thread seal tape and tighten the locknut.

6.8.2 Setting of the “open” position for type HVVW

1. Connect compressed air via a pressure reduction valve 4-5,5 bar depending on actuator specification.
2. Operate the valve to test.
3. Check whether the valve opens correctly.

With open/close applications, the max. degree of opening of the ball segment is 90°.

With control applications, the max. degree of opening of the ball segment is 75°- 90.

Procedure

1. If the required degree of opening is not reached, undo the locknut of the end position bolt and turn the end position bolt (➔ Fig.6-25/1) 1-2 turns counterclockwise.
2. If the ball segment moves beyond the required degree of opening, undo the locknut of the end position bolt and turn the end position bolt (➔ Fig.6-25/1) 1-2 turns clockwise.
3. Operate the ball segment to test.
4. When the correct setting is reached, attach thread seal tape and tighten the locknut.

6.8.3 Setting of the “closed” position for type HVVF

1. Connect compressed air via a pressure reduction valve 4-4,5 bar, depending on actuator specification.
2. Operate the valve to test.
3. Check whether the valve closes correctly.

Procedure

1. Loosen the locking nut and unscrew the end position bolt (➔ Fig.6-25/2) a few turns.
2. Connect compress air via a reduction valve. Adjust the pressure to 4-4,5 bar depending on actuator specification.
3. Close the valve with the air pressure.
4. Make sure that the ball segment will reach the seat.
5. Screw in the end position bolt until stop and then backwards ½ a turn.
6. Attach seal tape and tighten the lock nut.

⇨ Afterwards we recommend to test the ball segment valve type for leakage (➔ Chap. 6.10).

6.8.4 Setting of the “open” position for type HVVF

1. Connect compressed air via a pressure reduction valve 4-5,5 bar depending on actuator specification.
2. Operate the valve to test.
3. Check whether the valve closes correctly.

With open/close applications, the max. degree of opening of the ball segment is 90°.

With control applications, the max. degree of opening of the ball segment is 75°- 90.

Procedure

1. If the required degree of opening is not reached, undo the locknut of the end position bolt and turn the end position bolt (➔ Fig. 6-25/1) 1-2 turns counterclockwise.
2. If the ball segment moves beyond the required degree of opening, undo the locknut of the end position bolt and turn the end position bolt (➔ Fig. 6-25/1) 1-2 turns clockwise.
3. Operate the ball segment to test.
4. When the correct setting is reached, attach thread seal tape and tighten the locknut.

6.9 Leak test of the valve

Each valve should be tested for leakage after maintenance work on the seat.

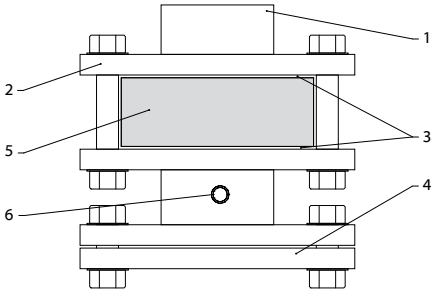
Danger!

Risk of injury!
Observe movements of the ball segment.
Keep hands, tools and other objects away from the area where the ball segment moves when the actuator is connected to compressed air system. Single action actuators may move to “open” or “closed” position without being connected to the air system.

The valve has to be installed between the flanges for the test procedure with a prescribed torque (➔ Tab.4-1).

1. The ball segment valve can be tested with a testing device as in (➔ Fig.6-26) shown.

⇨ Please consult Pressure testing instruction Mi-901 EN.



1	Piece of pipe	3	Flange gaskets	5	Ball segment valve
2	Counter flange	4	Blind flange	6	Water connection

Fig.6-26 Leak test device (schematic diagram for wafer valve types)

Tab.6-1

6.10 Somas Spare Parts

Somas offers spare parts in ready-made spare parts kits.

The spare parts needed for a complete overhaul of the valve sealing parts are included in Somas sealing kit (SK).

The spare parts needed for a complete overhaul of the valve are included in Somas repair kit (RK).

Part number on these kits are listed on subsequent pages of this manual.

Use only Original Spare Parts from Somas Instrument AB.

NOTE

Note the details of the type plate (➔ Fig.6-1) before contacting the contact partners given in the order confirmation. Only use original replacement and wear parts from Somas Instrument AB.

6.11 Somas Sealing kit (SK)

All necessary parts for a complete overhaul of the valve sealing parts are included in Somas Sealing kit (SK). These kit contains the follwing parts:
Stuffing box, Cover seal, Spring washers, Key, Bearings, Sealing ring, Disc spring.

The spare part numbers given below refers to valves in standard versions.

HVVF Flanged design	**Part number Sealing Kit**	**HVVW Wafer design**	**Part number Sealing Kit**
HVVF-L6-AKT-A82-DN40/32	63059	HVVW-A6-AKT-A82-DN40/32	63061
HVVF-L6-AKT-A82-DN40	63063	HVVW-A6-AKT-A82-DN40	63061
HVVF-L6-AKT-A82-DN50	63067	HVVW-A6-AKT-A82-DN50	63069
HVVF-B5-AKT-A81-DN80	63035	HVVW-A6-AKT-A82-DN65	63071
HVVF-B5-AKT-A81-DN100	63039	HVVW-A5-AKT-A81-DN80	63035
HVVF-B5-AKT-A81-DN125	63041	HVVW-A5-AKT-A81-DN100	63039
HVVF-B5-AKT-A81-DN150	63045	HVVW-A5-AKT-A81-DN150	63041
HVVF-B5-AKT-A81-DN200	63051	HVVW-A5-AKT-A81-DN200	63047
HVVF-B5-AKT-A81-DN250	63055	HVVW-A5-AKT-A81-DN250	63051
HVVF-C5-AKT-A81-DN80	63037	HVVW-D6-AKT-A82-DN40/32	63061
HVVF-C5-AKT-A81-DN100	63039	HVVW-D6-AKT-A82-DN40	63061
HVVF-C5-AKT-A81-DN150	63043	HVVW-D6-AKT-A82-DN50	63069
HVVF-C5-AKT-A81-DN200	63049	HVVW-D6-AKT-A82-DN65	63071
HVVF-C5-AKT-A81-DN250	63053	HVVW-D5-AKT-A81-DN250	63053
HVVF-C5-AKT-A81-DN300	63057		

6.12 Somas Repair kit (RK)

All necessary parts for a complete overhaul of the valve are included in Somas Repair kit (RK). These kit contains the follwing parts:
Stuffing box, Cover seal, Spring washers, Key, Bearings, Sealing ring, Disc spring, Seat, Ball Segment, Shaft Shims and Shims.

The spare part numbers given below refers to valves in standard versions.

HVVF Flanged design	Part number Repair kit	HVVW Wafer design	Part number Repair kit
HVVF-L6-AKT-A82-DN40/32	63060	HVVW-A6-AKT-A82-DN40/32	63062
HVVF-L6-AKT-A82-DN40	63064	HVVW-A6-AKT-A82-DN40	63066
HVVF-L6-AKT-A82-DN50	63068	HVVW-A6-AKT-A82-DN50	63069
HVVF-B5-AKT-A81-DN80	63036	HVVW-A6-AKT-A82-DN65	63070
HVVF-B5-AKT-A81-DN100	63040	HVVW-A5-AKT-A81-DN80	63036
HVVF-B5-AKT-A81-DN125	63042	HVVW-A5-AKT-A81-DN100	63040
HVVF-B5-AKT-A81-DN150	63046	HVVW-A5-AKT-A81-DN150	63042
HVVF-B5-AKT-A81-DN200	63052	HVVW-A5-AKT-A81-DN200	63048
HVVF-B5-AKT-A81-DN250	63056	HVVW-A5-AKT-A81-DN250	630512
HVVF-C5-AKT-A81-DN80	63038	HVVW-D6-AKT-A82-DN40/32	63062
HVVF-C5-AKT-A81-DN100	63040	HVVW-D6-AKT-A82-DN40	63066
HVVF-C5-AKT-A81-DN150	63044	HVVW-D6-AKT-A82-DN50	63070
HVVF-C5-AKT-A81-DN200	63050	HVVW-D6-AKT-A82-DN65	63072
HVVF-C5-AKT-A81-DN250	63054	HVVW-D5-AKT-A81-DN250	63054
HVVF-C5-AKT-A81-DN300	63058		

6.13 Decommissioning and disposal

Somas valves are designed for easy maintenance and repair, ensuring an environmentally friendly and cost-efficient use.

Replaced components and valves shall be disassembled and recycled according to local rules and regulations.

The materials of the valve components can be found on the valve marking plate and in Somas valve data sheets. Material information can also be acquired from Somas Instrument AB.

Somas.se LinkedIn

Concern and head office:
Somas Instrument AB
Norrlandsvägen 26
SE-661 40 SÄFFLE
Sweden

Phone: +46 (0)533 69 17 00
E-mail: sales@somas.se
www.somas.se

59082-EN

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