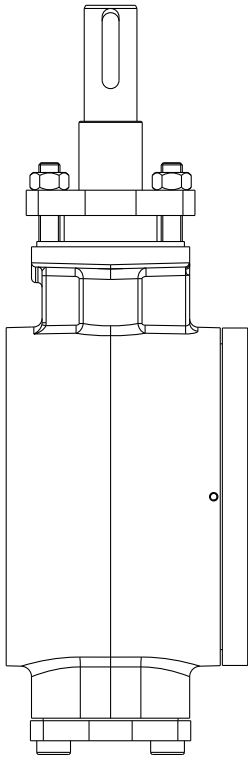


Operating and installation instructions

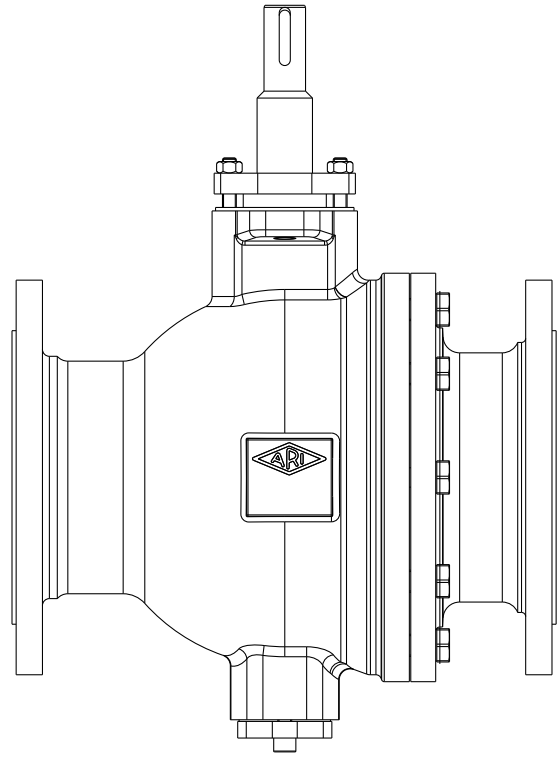
In accordance with EC Directive 2014/68/EU on Pressure Equipment

In accordance with EC Directive 2006/42/EC on Machinery

Segmented ball valve PALTRA®-V



BR 501 - PALTRA®-V



BR 502 - PALTRA®-V

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1.0 General information on operating instructions

These operating instructions provide information on mounting and maintaining the valves. Please contact the supplier or the manufacturer in case of problems which cannot be solved by reference to the operating instructions.

They are binding for transport, storage, installation, start-up, operation, maintenance and repair.

You must read the operating instructions before putting the valve into operation. The notes and warnings must be observed and adhered to.

Handling and all other work must be carried out by expert personnel or all activities supervised and checked.

It is the owner's responsibility to define areas of responsibility and competence and to supervise personnel.

In addition, current regional safety requirements must be applied and observed when taking the valves out of service as well as when maintaining and repairing them.

The manufacturer reserves the right to introduce technical modifications or improvements at any time.

These operating instructions comply with the requirements of EU Directives.

2.0 Notes on possible dangers

2.1 Significance of symbols



Warning of general danger.

2.2 Explanatory notes on safety information

In these operating and installation instructions dangers, risks and items of safety information are highlighted to attract special attention.

Information marked with the above symbol and "**ATTENTION!**" describe practices, a failure to comply with which can result in serious injury or danger of death for users or third parties or in material damage to the system or the environment. It is vital to comply with these practices and to monitor compliance.

All other information not specifically emphasised such as transport, installation, operating and maintenance instructions as well as technical data (in the operating instructions, product documentation and on the device itself) must also be complied with to the fullest extent in order to avoid faults which in turn can cause serious injury to persons or damage to property.

3.0 Storage and transport



ATTENTION !

- Protect against external force (like impact, vibration, etc.).
- Valve mountings such as actuators, handwheels, hoods must not be used to take external forces, e.g. they are not designed for use as climbing aids or as attachment points for lifting gear.
- Suitable materials handling and lifting equipment should be used.
See technical data sheet for weights.

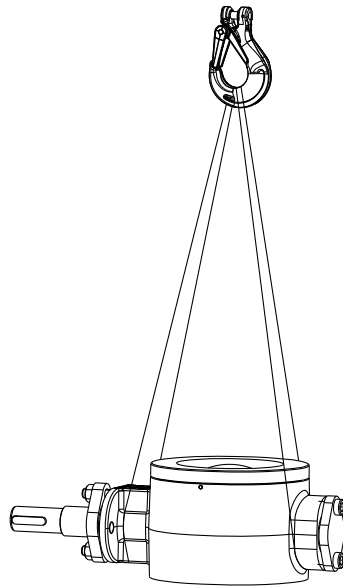


Fig. 1: Fig.501

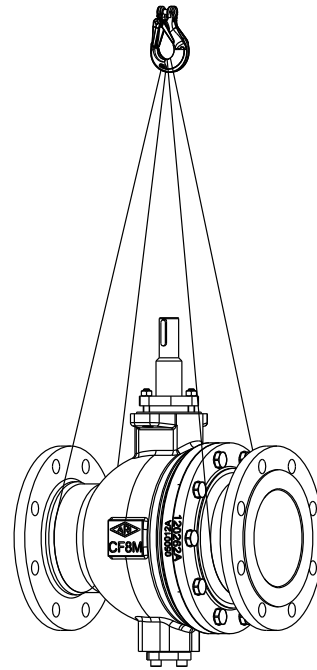


Fig. 2: Fig.502

- Storage at -20°C to +65°C.
- During storage, the valves must be protected against impurities.
- Avoid storage outdoors exposed to the effects of rain, sunlight or frost.
- The paint is a base coat to protect against corrosion during transport and storage. Do not damage paint protection.

4.0 Description

4.1 Area of application

Valves are used for „controlling the flow of liquids, gases and vapours in chemical and other processing plants and for plant engineering“.



ATTENTION !

- Refer to the technical data sheet for applications, limits on use and possibilities. In particular, you must check the material stability.
- Certain media require or preclude the use of special materials.
- The valves are designed for standard operating conditions. If conditions exceed these requirements, e.g. aggressive or abrasive media, the owner should state the higher requirements when ordering.
- Careful selection and sizing of the valve based on the anticipated operating conditions is essential for low-noise, low-vibration operation.
- You must state whether the valves are to be used in explosive atmosphere (ATEX) when ordering.
(Special version owing to the marking / design)
- As a general rule, we recommend that you do not install valves immediately downstream from pipe bends or tees. Particularly with control applications, you should allow a section equivalent to at least 2 x DN before and 6 x DN after the valve in accordance with DIN EN 60534.

It is the responsibility of the machine planner / owner to ensure compliance.
The special markings on the valve must be taken into account.

Refer to the technical data sheet to see which materials are used in standard versions.
Please contact the supplier or the manufacturer if you have any questions.

4.2 Operating principles

The valve is closed by turning the actuator stem.
The stem moves through 90°.



ATTENTION !

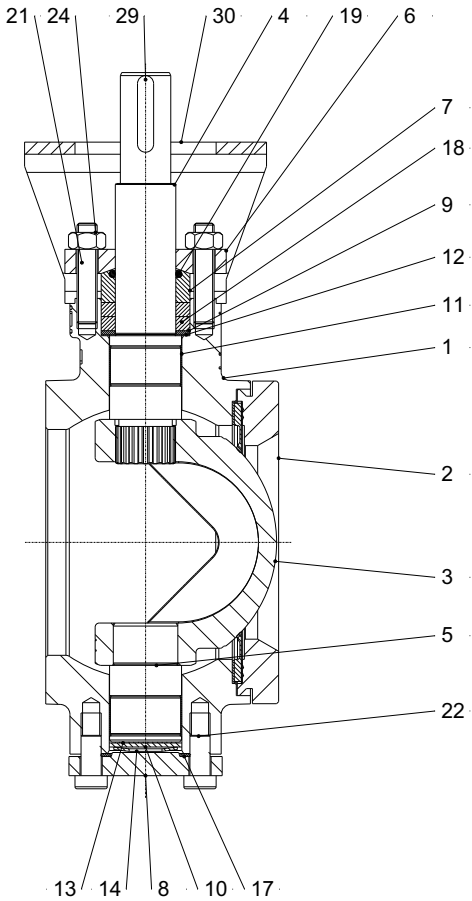
- The actuator stem is partially open and there is a **crushing hazard**

The position of the segmented ball can be determined from the mark on the shaft end face when the actuator is dismantled (marking groove points in the direction of the control opening).

4.3 Diagram and parts list

Refer to the technical data sheet for information about materials with designations and figure numbers.

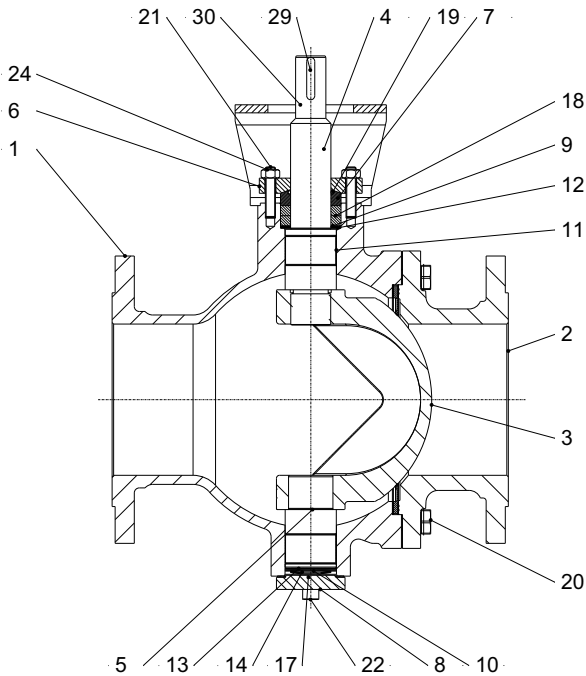
4.3.1 Wafer type



No.	Description
1	Body
2	Clamping ring
3	Segmented ball with V-cut
4	Stem
5	Pivot
6	Packing box flange
7	Gland follower
8	Subshaft cover
9/10	Back-up-ring
11	Bearing strip
12/13	Axial-washer
14	Disc spring
15/16	Gasket
17	Gasket
18	Box packing
19	O-ring
20	Thread pin
21	Stud
22	Socket screw
24	Hexagon nut
25	Seat ring
27	Back-up-ring
28	Gasket
29	Key
30	Mounting bracket

Fig. 3: Segmented ball valve PALTRA®-V BR 501

4.3.2 Double flanged



No.	Description
1	Body
2	Housing flange
3	Segmented ball with V-cut
4	Stem
5	Pivot
6	Packing box flange
7	Gland follower
8	Subshaft cover
9/10	Back-up-ring
11	Bearing strip
12/13	Axial-washer
14	Disc spring
15/16	Gasket
17	Gasket
18	Box packing
19	O-ring
20	Hexagonal screw
21	Stud
22	Socket screw
24	Hexagon nut
25	Seat ring
27	Back-up-ring
28	Gasket
29	Key
30	Mounting bracket

Fig. 4: Segmented ball valve PALTRA®-V BR 502

4.3.3 Manual gear.

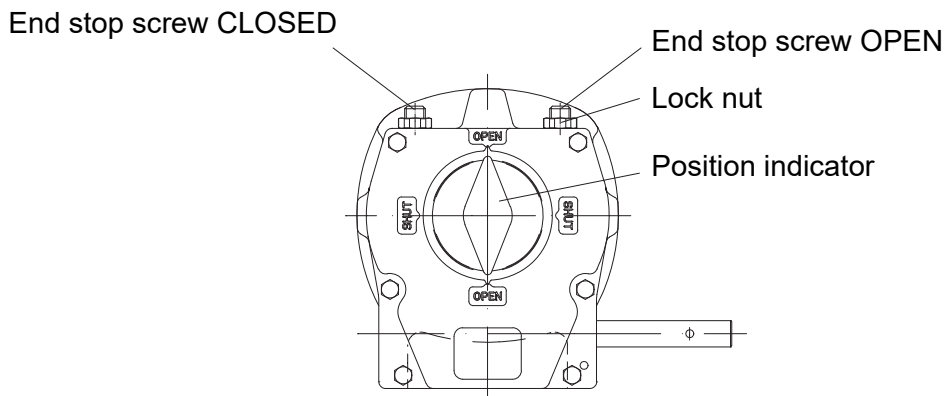


Fig. 5: Gear PALTRA®-V

- Gear (operated using handwheel, clockwise rotation closes)
The CLOSED position can be adjusted to $\pm 5^\circ$ using an adjustable end stop screw.
The screws are self-sealing and self-locking.
- Refer to the separate operating and maintenance instructions of the manufacturers for actuators (electric, pneumatic or hydraulic).

4.4 Technical data – remarks

For example

- **Principal dimensions,**
- **Pressure-temperature ratings, etc.** refer to the technical data sheet.

4.5 Marking

The name plate of the valve is attached either to the body (Fig. 501) or to the flange (Fig. 502).

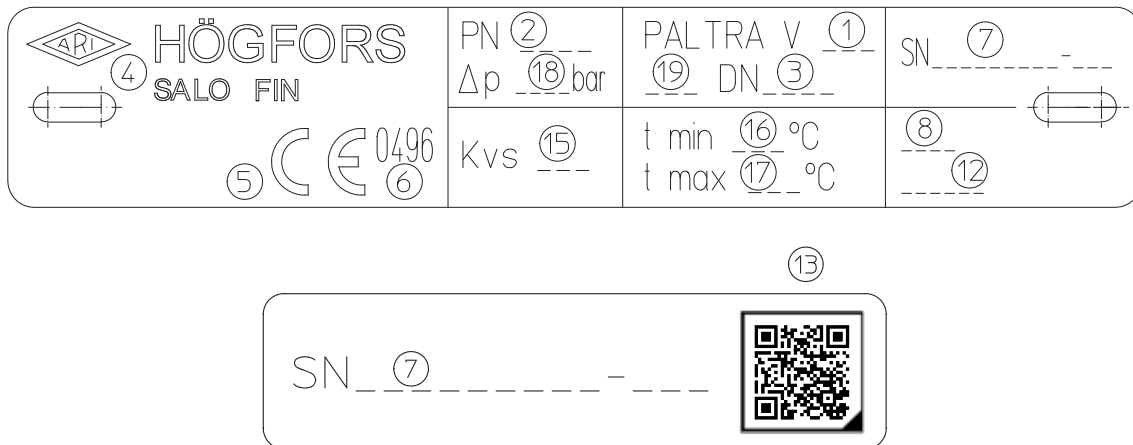




Fig. 6 : Name plate

No.	Value
1	Figure / Product
2	Nominal pressure [PN]
3	Nominal diameter [DN]
4	Manufactured by ARI-Armaturen / Högfors  / HÖGFORS SALO FIN
5	CE marking 
6	Notified body [0496]
7	Serial number [SN]
8	Year of manufacture [JJJJ]
12	Marking at approval
13	QR-Code marking [ARI-ID]
15	Kvs-value [Kvs]
16	min. permissible temperature [t min]
17	max. permissible temperature [t max]
18	max. permissible differential pressure [Δp]
19	Sealing element
Manufacturer's address: See section " Pkt 11.0 Warranty / Guarantee"	

5.0 Installation

5.1 General remarks on installation

The following points should be taken into account in addition to the general principles governing installation work:



ATTENTION !

- Remove flange covers if present.
- Connection flanges must mate exactly.
- Clean the pipework carefully before installing the valve. The interior of the valve and the pipeline must be free of foreign particles, as these could damage the valve's shut-off surfaces.
- The installation position should be selected so that the flow approaches the valve from the segmented ball side. The maximum differential pressure must be observed (see technical data sheet).
- Steam line systems should be designed to prevent water accumulation.
- Install pipelines so that damaging transverse, bending and torsional forces are avoided.
- Do not install the valve close to a pump or a curved pipe section due to the turbulent flow that they cause. There must be as little turbulence as possible in the flow at the valve.
- The pipes must be provided with appropriate support. An inadequately supported section of pipework will cause excessive stress on the valve, possibly resulting in leakage from the shut-off surfaces.
- Pipework temperature variations will cause thermal contractions and expansions which must be allowed to occur freely, for example with the aid of bellows expansion joints. Without these or other similar solutions, pipework expansions will excessively burden the joints.
- Protect valves from dirt during construction work.
- Valve mountings such as actuators, handwheels, hoods must not be used to take external forces, e.g. they are not designed for use as climbing aids or as attachment points for lifting gear.
- Flooding of the valve is not permissible.
- Suitable materials handling and lifting equipment should be used for assembly work. During assembly work, ensure that the valve is fixed adequately. See technical data sheet for weights.
- The preferred installation position relative to the stem direction is horizontal.
- The unmounted valve may only be operated if all safety precautions are observed. **Crushing hazard!**
- When installed vertically, large actuators must be supported.
- Avoid mechanical damage to the seat during transport, storage and installation.
- Protect actuators from excessive ambient temperatures; refer to the operating instructions for the actuators.
- With actuators mounted, you must disconnect the power supply before starting work.
- The valve should be installed in the open position.

- Planners / construction companies or the owner are responsible for positioning and installing products.
- The valves are designed for deployment in systems that are not affected by the weather.
- For applications outdoors or in adverse conditions like corrosive environments (seawater, chemical vapours, etc.), special designs or protective measures are recommended.
- **The valves are not approved for subsurface installation.**

5.2 Installing wafer type valves (Fig. 501)

- Please check the type of neck-welded flange in the Production Card.
- Make sure that mounting shims totally cover contact surfaces.
- During installation make sure that flanges and shims are coaxial and parallel to each other.
- The segmented ball must be in the closed position during installation.
- Check that there are no obstructions inside the valve before installation.

Installation order.:

Preassemble the unit comprised of the valve, mounting shims and flanges. Secure it using a few of the bolts but tighten them only slightly.

Tack-weld the preassembled unit to the pipeline.

Remove the valve and the mounting shims from the pipeline, then weld the flanges all around the perimeter.

Insert the valve and tighten the stud bolts evenly in crosswise sequence.



ATTENTION !

- The sealing element (25 and possibly also 15/16) between the counter flange and the body (Fig. 7 + Fig. 8) is pressed tightly via the bolts of the flanges. This must be taken into account when determining the bolt tightening torques required for operational tightness.

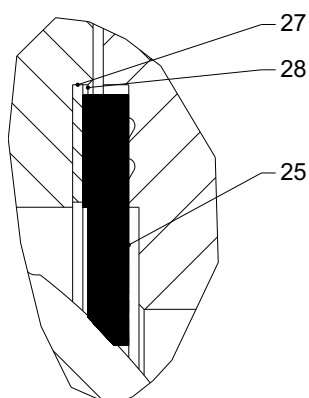


Fig. 7: Seat ring TC (PTFE)

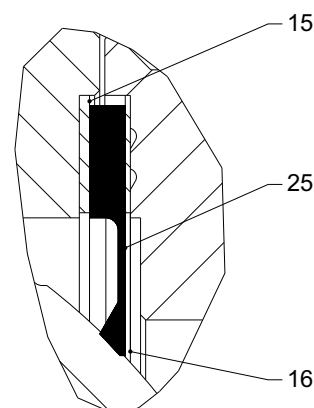


Fig. 8: Seat ring KC (Stellite)

5.3 Installing flanged valves (Fig. 502)

- Preassemble the unit comprised of the valve, flanges and flange gaskets using between 4 and 6 studs. Be careful not to tighten the studs too tight on the nuts.
- Make sure that all parts are coaxial and parallel to each other.
- Assemble and tighten the valve with the remaining fasteners.
- After installing the valve, make sure that it will not be under excessive stress and that the flanges are parallel and coaxial to each other. The valve may only be pressurised after the flanges have been completely installed. Incorrect installation could result in leakage or damage to the sealing elements.

5.4 Installing additional modules and piping elements

Optional accessories (limit switches, etc.) that are supplied with valves must be fitted as required for their functions as shown in the system plan.

If piping elements are supplied with the product by the manufacturer or enclosed with the valves, the system owner must ensure that they are operated safely under reasonably foreseeable conditions and in compliance with limit values. Protective measures must be implemented based on a hazard analysis in accordance with DIN EN 16668:2016, 5.1.3 "Protection against exceeding the allowable limits". If the nature or conditions of the intended use, including all foreseeable circumstances, are such that protective measures are necessary (e.g. to prevent inadmissible pressure increases), the manufacturer should be notified immediately. The system owner is thus personally responsible for ensuring operational safety.

5.5 Requirements at the place of installation

The place of installation should be easily accessible and provide ample space for maintenance as well as for removing the actuators. The valve should preferably be installed horizontally with the actuator at the side. Inclined or horizontal installation without supports is only permissible with lightweight actuators.

Permissible actuator weights for unsupported valves installed horizontally relative to the stem:

35 kg for DN 80 - 100
40 kg for DN 125 - 150
55 kg for DN 200 - 250
65 kg for DN 300

The pipes must be lagged to protect the actuators from excessive heat. Sufficient space must be allowed for maintaining the stem seal.

5.6 Installation requirements for setting up and dismantling actuators

Normally, valves are supplied complete with the actuator fitted. It is not permitted to set up or dismantle actuators with valves operating at the service temperature and pressure. The actuators must be installed as described in the operating instructions for conversion or maintenance.

When connecting the electric actuators, you must comply with the specifications of the Low Voltage Directive. Connection (grounding) of electric actuators must only be carried out by qualified personnel.

6.0 Putting the valve into operation



ATTENTION !

- Before putting the valve into operation, check the material, pressure, temperature and direction of flow.
- Regional safety instructions must be adhered to.
- Residues in piping and valves (dirt, weld beads, etc.) inevitably lead to leakage and / or damage.
- Touching the valve when it is operating at high ($> 50^{\circ}\text{C}$) or low ($< 0^{\circ}\text{C}$) media temperatures can cause injury.
Affix a warning notice or provide protective insulation as appropriate!
- To prevent hydraulic jerks with a liquid medium, you must not slam valve closed. If necessary, chokes or dampers must be fitted.

Before putting a new plant into operation or restarting a plant after repairs or modification, always make sure that:

- All work has been completed correctly.
- The valve is in the correct position for its function.
- Safety devices have been attached.

- Flush the pipelines thoroughly after installation.
- Check the valve for damage / defects due to transportation and handling.
- Ensure that no cavitation occurs. Prolonged operation under cavitation conditions can cause parts of the valve to be eroded and destroyed.
- It is not recommended to use the first and last 10% of the segmented ball total travel distance in control applications.
- After prolonged operation in a small opening position (5° - 15°), the segmented ball should be adjusted to a wider angle (25° - 30°) before closing in order to flush and clean the seat surface. At smaller opening angles, the debris from the pipeline could stick or collect between the valve body and the segmented ball.
- Always close the valve using the actuator's mechanical end stops; be careful not to exceed the maximum torque limit.
- **A valve fitted with an electric actuator must always be opened electrically, with the end stop serving as the closing limit. You can open and close the segmented ball in an emergency by turning the handwheel of the electric actuator.**
 - In these cases, however, note that the handwheel's end stop has been set to turn the valve disc 2 or 3 revolutions beyond the optimal closed position. This means that optimal tightness is achieved by turning the handwheel back 2 or 3 revolutions in the opening direction from the gear's mechanical closing limit.

When putting the valve into operation, check that the box packing (18) is tight. If leakage occurs from the stem (4), you should tighten the box packing (18) slowly and evenly with hexagonal screws (20) or hexagon nuts (24) until there is no more leakage (see also section 7.0 Care and maintenance).

7.0 Care and maintenance

PALTRA[®]-V segmented ball valves are durable and reliable. A correct and professional, appropriately selected and carefully installed valve will not require maintenance during its life cycle.

Leakage from the seat ring is often caused by wear and tear, pipework impurities or damage resulting from pressure impacts. Impurities can be removed by opening the segmented ball and allowing the flow to flush the shut-off surfaces clean.

The probability of hydro-stress can be reduced to a minimum by using bypass valves.

The scope of maintenance and repair work consists of:

- Cleaning internal surfaces
- Replacement of the seat ring
- Tightening or replacement of the stem seal
- Replace pivot seal

It is possible to carry out this work when the valve is installed provided the pipeline is not under pressure. The valve must be removed from the pipe for all other repair work.

The owner must define maintenance and maintenance intervals to meet requirements.



ATTENTION !

- *We recommend actuating the valve at least once a month.*
- *If leakage occurs from the stem (4), you should tighten the box packing (18) slowly and evenly with hexagon nut (24) until there is no more leakage.*



ATTENTION !

- *Always ensure that the lubricant is compatible with the medium.*
- *You are only allowed to replace the seat ring (25) after the system has cooled down and is depressurised.*
- ***Before dismantling the valve, refer to section 10.0.***
- *When operating the valve, there is a risk of crushing between the segmented ball and the body.*
- *Only carry out maintenance work in the piping if the segmented ball valve is secured against operation (actuator disconnected from the mains and secured against reconnection).*

7.1 Manual gear

7.1.1 Removal and installation

Avoid dismantling the manual gear from the valve. The manual gear was adjusted at the factory such that no leakage occurs from the valve. If you dismantle the manual gear, this adjustment must be repeated.



ATTENTION !

- Before starting maintenance work, you must depressurise the piping system. Ignoring these regulations can put your life at risk and damage the piping system.

Work steps – removal:

- Turn the segmented ball (3) to the “closed” position.
- Mark the position of the manual gear in relation to the valve.
- Unscrew the bolts for the gear at the valve and remove the gear.
- Remove the keys (29)

Work steps – installation:

- Install the manual gear with the segmented ball in the “closed” position. Make sure that the manual gear is in the “closed” position as well.
- Insert the keys (29).
- Install the manual gear in its original position. Bolt the manual gear to the valve. Tighten the bolts evenly in crosswise sequence. Apply locking agent to the threads.
- Adjust the manual gear as instructed in section 7.2.

7.2 Electric actuator removal and installation (AUMA SA)

Avoid dismantling the actuator from the valve. The actuator was adjusted at the factory such that no leakage occurs from the valve. If you dismantle the actuator, this adjustment must be repeated.



ATTENTION !

- Before starting maintenance work, you must depressurise the piping system. Ignoring these regulations can put your life at risk and damage the piping system.

Work steps – removal:

- Turn the segmented ball to the “closed” position.
- Switch off the power supply to the actuator.
- Loosen the actuator bolts and remove the actuator.
- It may be necessary to remove the actuator coupling piece, for example when replacing the stem seal.
 - In this case, mark the height of the coupling piece on the stem (4).
 - Loosen the locking screw and pull the coupling piece off of the stem.
- Remove the keys (29).

Work steps – installation:

- Install the manual gear with the segmented ball in the “closed” position. Make sure that the actuator is in the “closed” position as well.
- Insert the keys (29).

- If necessary, attach and lock the actuator coupling piece at its original height on the stem (4).
- Mount the actuator to the valve. Bolt the actuator to the valve. Tighten the bolts evenly in crosswise sequence. Apply locking agent to the threads.
- Adjust the actuator as instructed in section 7.2.

7.3 Electric actuator adjustment

- Use the actuator handwheel to move the segmented ball into the half-open position.
- Check that the segmented ball moves in the right direction when the switches are actuated.
- For detailed instructions concerning the actuator's adjustment, see the manual supplied with the actuator.
- The actuator is correctly adjusted if all conditions in the following checklist are met:
 - The limit switch for the "closed" position must stop the disc from turning when the disc is parallel to the shim. You can check that the disc's position is correct by measuring the distance "X" (Fig. 22). This distance must be equal on both sides of the disc.
 - The torque switches are adjusted to the values specified by the valve manufacturer (contact the valve supplier or manufacturer for details).
 - The mechanical stop for the "open" position has been set to turn the actuator's handwheel 2 to 4 revolutions beyond the "open" position of the limit switch until contact with the stop.
 - The limit switch for the "open" position must stop the disc from turning when the segmented ball is at 90° to the shim. There is a free gap of 2 to 5 handwheel revolutions between the limit switch and the mechanical stop.



ATTENTION !

- If any of the conditions in the above checklist are not met, the valve could be damaged or the actuator blocked.

7.4 Other actuators

For detailed instructions concerning the actuator's removal, installation and adjustment, contact the supplier or manufacturer.

7.5 Tightening the stem seal

Tightening the stem seal is included in regular maintenance. Avoid excessive tightening. The seal is sufficiently tight when no more leakage occurs.

The studs with associated hexagon nut are marked pos.20 and pos.24 in the diagrams and parts lists (section 4.3).

7.6 Replacing the stem seal



ATTENTION !

- Before starting maintenance work, you must depressurise the piping system.
Ignoring these regulations can put your life at risk and damage the piping system.

To dismantle:

- Remove the actuator and the keys (29).
- Unscrew the hexagon nut (24).
- Remove the gland (6).
- Lift out shaft seal bushing (7).
- Remove the O-rings (19) from shaft seal bushing (7).
- Remove the box packing (18).

To install:

- Carefully clean all surfaces. Prior to commencing the installation work, check that there are no sharp edges on the valve stem that could damage the O-ring or the shim.
- Install the box packing (18) on the stem and press it into place.
- Install the O-rings (19) on the shaft seal bushing (7) and press them into place.
- Install the gland (6) and fasten it with the hexagon nuts (24).
- Install and adjust the manual gear or the actuator (see above).

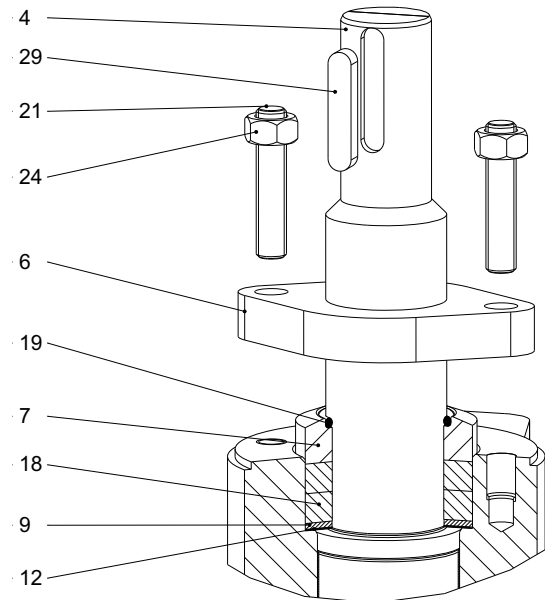


Fig. 9

7.7 Replacing the bottom cover gasket



ATTENTION !

- Before starting maintenance work, you must depressurise the piping system.
Ignoring these regulations can put your life at risk and damage the piping system.

To dismantle:

- Unscrew the bottom cover bolts (22).
- Remove the subshaft cover (8) with the bottom cover gasket (17) and the axial washer (13) and disc spring (14).

To install:

- Carefully clean all surfaces.
- Insert the axial washer (13) with the reinforcement mesh facing the subshaft cover (8). Insert the back-up ring (10) and the disc spring (14) above it as shown.
- Insert the subshaft cover (8) with the cover gasket (17).
- Fasten the subshaft cover (8) with the Socket screws (26).

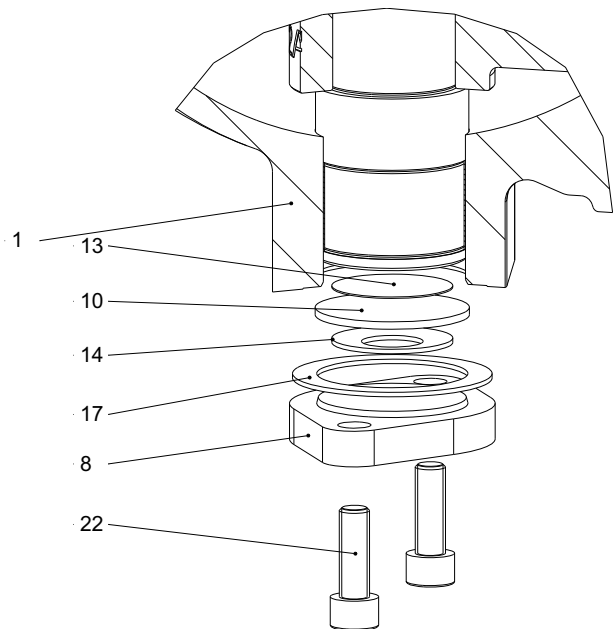


Fig. 10

7.8 Replacing the seat ring

The valve must be removed from the piping prior to replacing the seat ring (25).

It is not necessary to remove the actuator in order to replace the seat ring.

The segmented ball must be moved into the “closed” position before starting the replacement.

7.8.1 Wafer type (Fig. 501)

To replace the PTFE seal (TC):

- Unscrew the thread pins (20) and remove the counter flange (2).
- Remove the PTFE seal (25).
- Prior to installing new parts, carefully clean all surfaces of the body, segmented ball and counter flange. Check the condition of sealing surfaces before starting the installation work.
- Install the new PTFE seal. The segmented ball must be in the partially open position.
- Install the counter flange (2).
- Tighten the grub screws (20) alternately and evenly

To replace the stellited seal (KS):

- Unscrew the thread pin (20) and remove the counter flange (Pos. 2).
- Remove the shims (15, 16) and the seat ring (25). Note that the new shims must have the same arrangement in terms of thickness as before the replacement.
- Prior to installing new parts, carefully clean all surfaces of the body, segmented ball and counter flange. Check the condition of sealing surfaces before starting the installation work.
- Keep the segmented ball in the “closed” position while replacing the seat ring.

- Install the shims (15, 16) and the seat ring (25).
- Install the counter flange (2).
- Tighten the grub screws (20) alternately and evenly

7.8.2 Double flanged (Fig. 502)

To replace the PTFE seal (TC):

- Unscrew the hexagonal screw (20) and remove the housing flange (2).
- Remove the PTFE seal (25).
- Prior to installing new parts, carefully clean all surfaces of the body, segmented ball and housing flange. Check the condition of sealing surfaces before starting the installation work.
- Install the new PTFE seal. The segmented ball must be in the partially open position.
- Install the housing flange (2).
- Tighten all hexagonal screw (20) evenly in crosswise sequence.

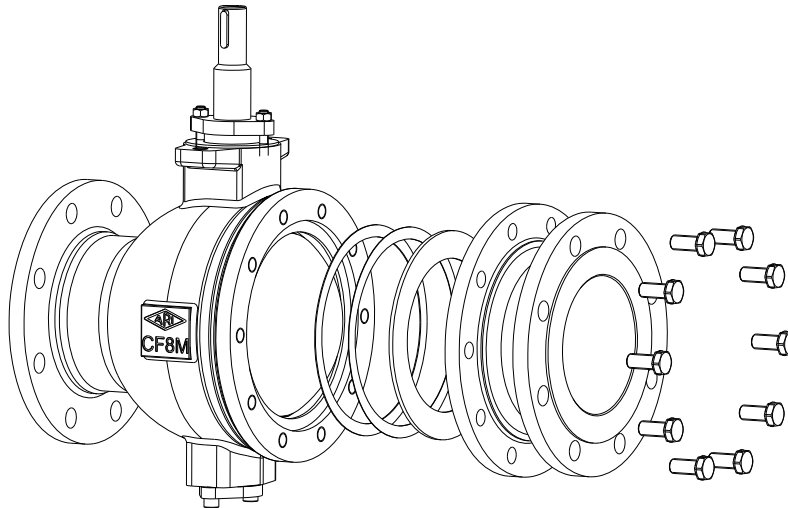


Fig. 11: Arrangement PTFE seal

To replace the stellited seal (KS):

- Unscrew the hexagonal screw (20) and remove the housing flange (2).
- Remove the shims (15,16) and the seat ring (25). Note that the new shims must have the same arrangement in terms of thickness as before the replacement.
- Prior to installing new parts, carefully clean all surfaces of the body, segmented ball and housing flange. Check the condition of sealing surfaces before starting the installation work.
- Keep the segmented ball in the “closed” position while replacing the seat ring.
- Install the shims (15,16 and the seat ring (25).
- Install the housing flange (2).

- Tighten all hexagonal screw (20) evenly in crosswise sequence.

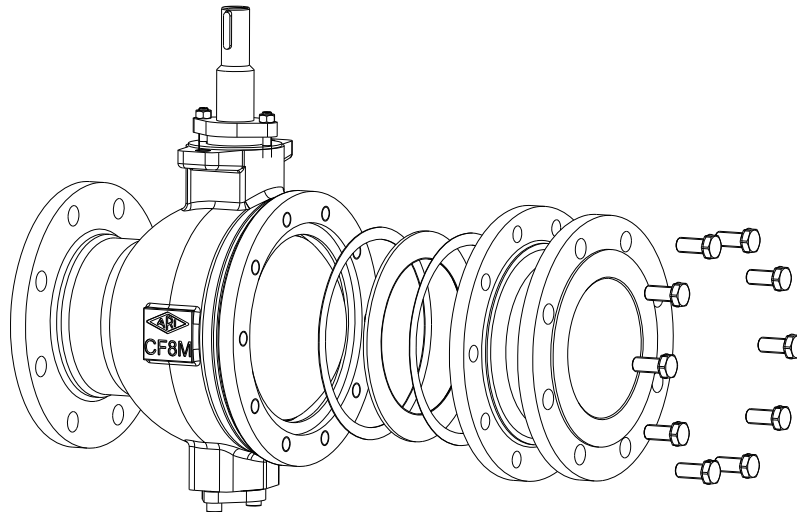


Fig. 12: Arrangement stellited seal

7.9 Tightening torques

M 8	=	20 (± 5) Nm
M 10	=	25 (± 5) Nm
M 12	=	45 (± 5) Nm
M 16	=	100 (± 5) Nm

8.0 Troubleshooting

In the event of malfunction or faulty operating performance check that the installation and adjustment work has been carried out and completed in accordance with these Operating Instructions.



ATTENTION !

- It is essential that the safety regulations are observed when identifying faults.

If malfunctions cannot be eliminated with the help of the following table "9.0 Troubleshooting table", the supplier or manufacturer should be consulted.

9.0 Troubleshooting table



ATTENTION !
 - Read section 10.0 before carrying out installation and repair work!
 - Read section 6.0 before recommissioning!

Fault	Possible cause	Corrective measures
No flow	Valve closed	Open the valve
Little flow	Valve not sufficiently open	Open the valve
	Strainer screen clogged	Clean / replace the screen
	Piping system clogged	Check the piping system
Valve is impossible or difficult to open or close	Service conditions (e.g. medium, temperature) may be outside the specified limits	Replace the valve. Consult the supplier or manufacturer
	Power failure	Check the power supply
	Actuator fault	Overhaul the actuator or replace it
	Wrong direction of rotation	Turn in the correct direction (anti-clockwise for opening)
	Box packing (18) is too tight	Loosen the hexagon nuts (24)
	Solid matter is blocking the segmented ball	Flush or clean the segmented ball
	Key (29) on stem has sheared off	Determine the cause and replace the key (29)
	Liquid has solidified between the bearings	If possible, flush the bearings and the stem via the flushing connections
Valve is leaking	Segmented ball not completely closed	Move the segmented ball into the "closed" position
	Solid matter is being deposited inside	Move the segmented ball and flush the valve in the open position
	Mechanical end stop for closing is set wrong	Readjust the end stop
	Seat ring (25) or sealing surface on segmented ball (3) is damaged	Replace the seat ring (25) (see section 7.8) or regrind the segmented ball contour (3)
Box packing (stem packing) is leaking	Fastening of box packing (18) is loose	Tighten the hexagonal nuts (24) evenly in small steps
	Box packing (18) or O-ring (19) is damaged	Replace the box packing (18) and the O-ring (19), see section 7.6
Leakage at bottom cover gasket	Socket screws (22) are loose	Tighten the socket screws (22)
	Bottom cover gasket (17) is damaged	Replace the bottom cover gasket (17)

10.0 Dismantling the valve and the actuation arrangement



ATTENTION !

The following points must be observed:

- *Pressureless piping system.*
- *Medium must be cool.*
- *Plant must be drained.*
- *Purge piping systems in case of caustic, inflammable, aggressive or toxic media.*

11.0 Warranty / Guarantee

The extent and period of warranty cover are specified in the "Standard Terms and Conditions of Albert Richter GmbH & Co. KG" valid at the time of delivery or, by way of departure, in the contract of sale itself.

We guarantee freedom of faults in compliance with state-of-the-art technology and the confirmed application.

No warranty claims can be made for any damage caused as the result of incorrect handling or disregard of operating and installation instructions, technical data sheets and relevant regulations.

This warranty also does not cover any damage which occurs during operation under conditions deviating from those laid down by specifications or other agreements.

Justified complaints will be eliminated by repair carried out by us or by a specialist appointed by us.

No claims will be accepted beyond the scope of this warranty. The right to replacement delivery is excluded.

The warranty shall not cover maintenance work, installation of external parts, design modifications or natural wear.

Any damage incurred during transport should not be reported to us but rather to the competent cargo-handling depot, the railway company or carrier company immediately or else claims for replacements from these companies will be invalidated.



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