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Operations and Maintenance Manual
Pressure Seal Valves
XA-PSV-001 Rev. 2

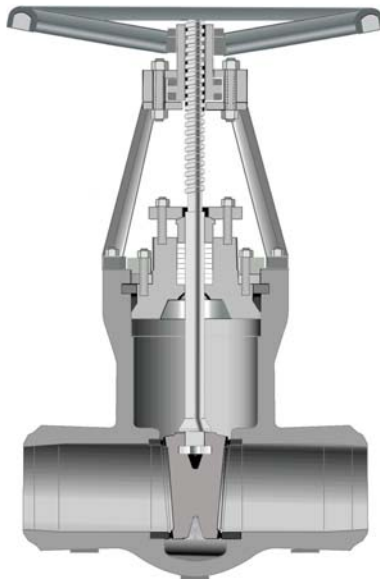
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Operations and Maintenance Manual

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Section 1

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THEORY OF OPERATION

Gate Valves. Gate valves are designed to close off or open up the flow in a pipeline. The wedge is designed to completely stop flow and form a tight seal against pressure in either direction. In the open position, the wedge is completely out of the flow stream. Gate valves are not recommended for throttling use.

Globe Valves. Globe valves are designed to close off, open up or throttle the flow in a pipeline. The disc is designed to completely stop flow and form a tight seal with pressure under the disc. From the 10% open position to full open position, globe valves are effective in throttling line pressure.

NOTE: Continuous throttling at less than 10% open may cause excessive vibration, noise, wear and damage to discs and seats.

The Globe valve is also available in a stop-check configuration. Stop check valves (sometimes called non-return valves) are designed to be opened by the flow of system pressure in one direction and close automatically when the system flows in the opposite direction. In addition, stop check valves can throttle the flow in the open direction or close the flow off completely.

Y-Globe Valves. Y-Globe valves are designed to close off, open up or throttle the flow in a pipeline.

The disc is designed to completely stop flow and form a tight seal with pressure under the disc. From the 10% open position to full open position, globe valves are effective in throttling line pressure. These valves typically offer better flow characteristics than standard globe valves.

NOTE: Continuous throttling at less than 10% open may cause excessive vibration, noise, wear and damage to discs and seats.

The Y-Globe is also available in a stop-check configuration. Stop check valves (sometimes called non-return valves) are designed to be opened by the flow of system pressure in one direction and close automatically when the system flows in the opposite direction. In addition, stop check valves can throttle the flow in the open direction or close the flow off completely.

Check Valves. Swing check valves are designed to open by the system pressure in a line. The desired direction of flow in the line will open the valve, and any attempt by the flow to reverse will close the valve completely. The check valve typically does not require any outside force or signal to operate properly. Check valves allow flow in one direction only. This type of Check valve can be installed in vertical and horizontal lines in the way that the gravity force helps the disc to close. The Swing Check valves can be obtained in two configurations: Traditional Swing Check type and Tilting Disc Type.

Tilting Disc Check Valve. Is similar to a Swing Check Valve, but it can close faster than that valve, preventing the back flow to gain high reverse velocity. This capability can prevent pressure surges in the system, when fast flow decelerations occur.



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Lift Check Valves. Lift check valves are designed to be opened by the flow of system pressure in one direction and close automatically when the system flows in the opposite direction. The lift Check valves can be obtained in two configurations: "T" pattern and "Y" pattern. The Flow Coefficients are similar to the globe valves in the equivalent configurations. These valves are normally installed in horizontal lines in the way that the gravity force helps the disc to close.

Pressure Seal Valves. Pressure seal valves use internal line pressure to seal the bonnet joint. These valves are available in Gate, Globe, Y-Globe, Swing Check, Tilting Disc Check and Lift check in "T" and "Y" configurations.

Parallel Disc Gate Valves. Parallel disc valves utilize a special free floating disc arrangement to provide positive shutoff. Unlike standard wedge gates, the parallel disc valve is seated by position and not input torque. This system uses upstream pressure to effect a positive seal.

- **DESCRIPTION**

This manual covers Xanik pressure seal valves. These valves are designed within the limits of ASME B16.34. For the operator and mounting top works of these valves, the user is referred to the "Actuated valves section" in this manual.

This manual is for reference purposes only. Disassembly and maintenance of valves should only be performed by qualified personnel. Consult xanor de Mexico s.a. de c.v. for specific technical support.

For Specific information regarding a particular style of valve, please refer to the corresponding detailed section.

- **INSTALLATION**

When unpacking, care should be exercised in lifting and handling to avoid damage to valves or injury to personnel. Do not lift any valve by the hand wheel or stem. Use lifting lugs or straps around the valve body.

When installing, ensure that all foreign material is removed from the interior of the valve, including desiccants. Note: Do not remove protective end coverings until immediately prior to valve installation.

Note: Do not disassemble or modify a Xanik Valve in any way prior to installation. This will void the Factory warranty if it occurs.

When installing weld-end, flex wedge gate or globe valves into the line, it is advisable to have the valve slightly open to prevent the wedge from becoming "stuck" due to thermal expansion and to discourage damage to the seating surfaces.

A protective paint has been applied to the weld ends on some valves and it should be removed before welding.



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Check the temperature of surrounding areas to avoid heating valve body excessively, especially with small sizes, where a heat sink may be necessary.

Use the smallest electrodes and the minimum amperage possible consistent with approved welding procedures. This will help to minimize warp age in the seat areas. Tack welds should be ground out before completing the root pass in that area.

Valves of carbon steel should be allowed to cool slowly. The valve may be covered with a heat-insulating blanket to promote slow cooling and limit the heat-affected zone. Appropriate industry standards should be followed for all PWHT.

Certain valve types are designed to function in a single direction (check valves, etc.) All markings should be noted on the valves. Arrows on the valves indicating flow direction should correspond with the system flow direction.

Note: Ensure that all foreign material (dirt, weld slag, etc) has been removed from the valve prior to and after installation. Foreign material is the primary cause of premature seat failures.

- **WARRANTY**

All Xanik Valves are backed by a full manufacturer's warranty against defects in materials or workmanship. It should be noted that any work or modification performed on a Xanik Valve must be authorized by xanor de Mexico s.a. de c.v. in order to retain the original factory warranty.

- **OPERATING INSTRUCTIONS**

Xanik valves are designed for simplicity and ease of operation. To open a gate, globe or stop check valve, turn the hand wheel in a counter clockwise direction; continue turning until interference is felt; at this point, the valve will be fully open. To close the valve, turn the hand wheel in a clockwise direction; continue turning until interference is felt; at this point, the valve will be fully closed.

Note that Parallel disc gate valves are not seated by torque. The disc is position seated and will stop when it contacts the factory set travel limits. Further tightening will not improve the seal and could lead to valve damage if excessive torque is applied.

Swing, Lift and tilting disc check valves, are designed to be actuated by line pressure only. When the upstream line is pressurized, flow will open the disc. When the pressure is reduced upstream, or if there is back-pressure, the disc will close.

With some larger valves under conditions of high pressure, a rim pull of more than 250 lbs. in hand wheel may be required to achieve proper seating.

CAUTION! – All Xanik valves were designed to operate within the pressure and temperature limits of ASME B16.34. Do not exceed these limits.



• MAINTENANCE

1.1 Preventative Maintenance and Periodic Inspection

xanor de mexico s.a. de c.v. recommends that periodic inspections be made of all valves. The frequency of these inspections will vary, depending upon the severity of service and frequency of operation of the valve. As a minimum, all valves should be checked quarterly to ensure proper operation and discourage the damage compounding effects of leakage. The following list details the specific valve types and areas requiring inspection and maintenance.

Item to inspect	GATE	GLOBE	Y-GLOBE	CHECK SWING & LIFT.	TILTING CHECK	STOP CHECK "T" or "Y"
Check Stem threads for wear	X	X	X			X
Check for Packing leaks	X	X	X			X
Check body/bonnet join for leaks	X	X	X	X	X	X
Check for leaks on Side plugs or lateral caps when applicable				X	X	
If conditions permit:						
Operate valve.	X	X	X			X
Inspect all external connections	X	X	X	X	X	X
Ensure Stem and seal areas are free from debris	X	X	X			X
Inspect condition of motor and/or gear operators (when used)	X	X	X			X
Inspect valve for obvious damage	X	X	X	X	X	X

Warning! Do not remove or loosen the packing gland or bonnet bolts while the valve is pressurized.



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1.2 Maintenance of valve under pressure

If the above listed inspections reveal any indications, the following procedures are recommended:

Note: Extreme care should be taken when working on any pressurized system!

1.2.1 If the stem packing is leaking, the eyebolt nuts on the gland flange should be tightened uniformly until the leakage stops. If the leakage continues or there is no adjustment remaining, additional packing must be installed or the packing must be replaced. (See disassembly procedure for appropriate valve or Packing and Gasket maintenance section) It should also be noted that the valve should be able to operate freely at all times. If the valve cannot operate due to excessive packing force, the packing has become worn and must be replaced during a system shutdown.

1.2.2 The stem threads that are exposed to atmosphere should be periodically lubricated to reduce wear, operating torque, and to deter corrosion. Care should be taken to ensure that only the threaded portion of the stem is lubricated. xanor de Mexico s.a. de c.v. does not recommend the practice of lubricating the sealing area of the stem. This practice tends to attract debris and foreign material, which can lead to stem or stuffing box damage.

1.2.3 The yoke sleeve should be lubricated periodically through the grease fitting to ensure smooth operation.

1.2.4 If leakage develops at the body/bonnet joint of a bolted bonnet valve, the bonnet stud nuts should be tightened uniformly. This tightening should be done in accordance with the bolting torque section of this manual.

CAUTION! Do not overstress the bolting leakage continues, the gasket should be replaced.

(See the bolting torque section "8" and the appropriate valve disassembly procedure)

1.2.5 If normal inspection reveals a binding or galling action of valve operating parts, it is advisable to dismantle and inspect the valve parts during a system shutdown. (See appropriate valve disassembly procedure)



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- IDENTIFICATION

All Xanik Valves are identified with a metal Tag that is riveted to the valve. This tag is usually found on the body/bonnet joint area, or on the top plate area near the hand wheel.

When ordering spare parts, or requesting technical support, please have the tag information available. The Serial number and Stock number are the keys to proper valve identification.

XANIK VALVES	
SIZE	FIG. NO.
BODY	ANSI B16.34 CLASS
STEM	PSI @ 100 F ° MAX. "F
DISC	STOCK NO
SEAT	SERIAL NO.



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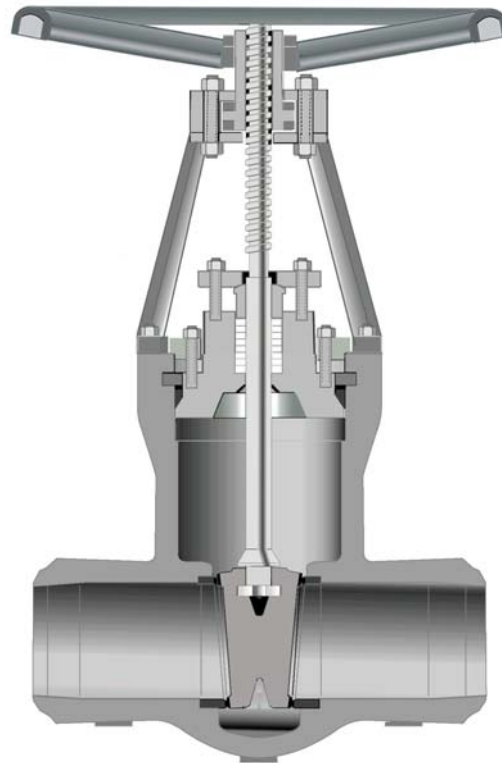
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Section 2

Pressure Seal Gate Valves Flexible Wedge





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PRESSURE SEAL GATE VALVES, FLEXIBLE WEDGE

2.0 General Information

For general operation & maintenance information regarding this valve or any other Xanik valve please Refer to section "1" of this manual.

For valves with threaded Bonnet and plate see section 2A.

For specific information pertaining to Parallel Disc Gate Valves, please refer to section "3" of this manual.

For valves with threaded Bonnet and plate see section 3A.

2.1 Complete Disassembly

CAUTION! Before disassembling any valve, ensure that all pressure has been removed from the line and from any cavities within the valve.

Hand wheel operated valves

Upon completion of the disassembly procedure listed below, the hand wheel 26 may be separated from the yoke level (19) by removing the hand wheel nut (27).

Gear and motor operated valves

Refer to section "9" of this manual for specific gear and motor information.

2.2 The following page contains a general disassembly and re-assembly procedure. These procedures cover the bulk of the disassembly and re-assembly process, however special attention should be paid to the following:

2.3 Extreme care should be taken to ensure that the sealing surfaces of the gasket area do not become damaged during disassembly or re-assembly. This includes scratches caused by misalignment and/or by debris in the seal area.

2.4 xanor de Mexico s.a. de c.v. recommends to replace the pressure seal bonnet gasket (6) when servicing any valve.

2.5 Caution should be exercised in handling the new bonnet gasket 6 to avoid scratching its surfaces.

2.6 When reassembling the valve it should be noted that in certain cases it may be necessary to tighten the bonnet draw bolts (25) as the system pressure is built up. This process will ensure a positive seal for the pressure seal gasket.



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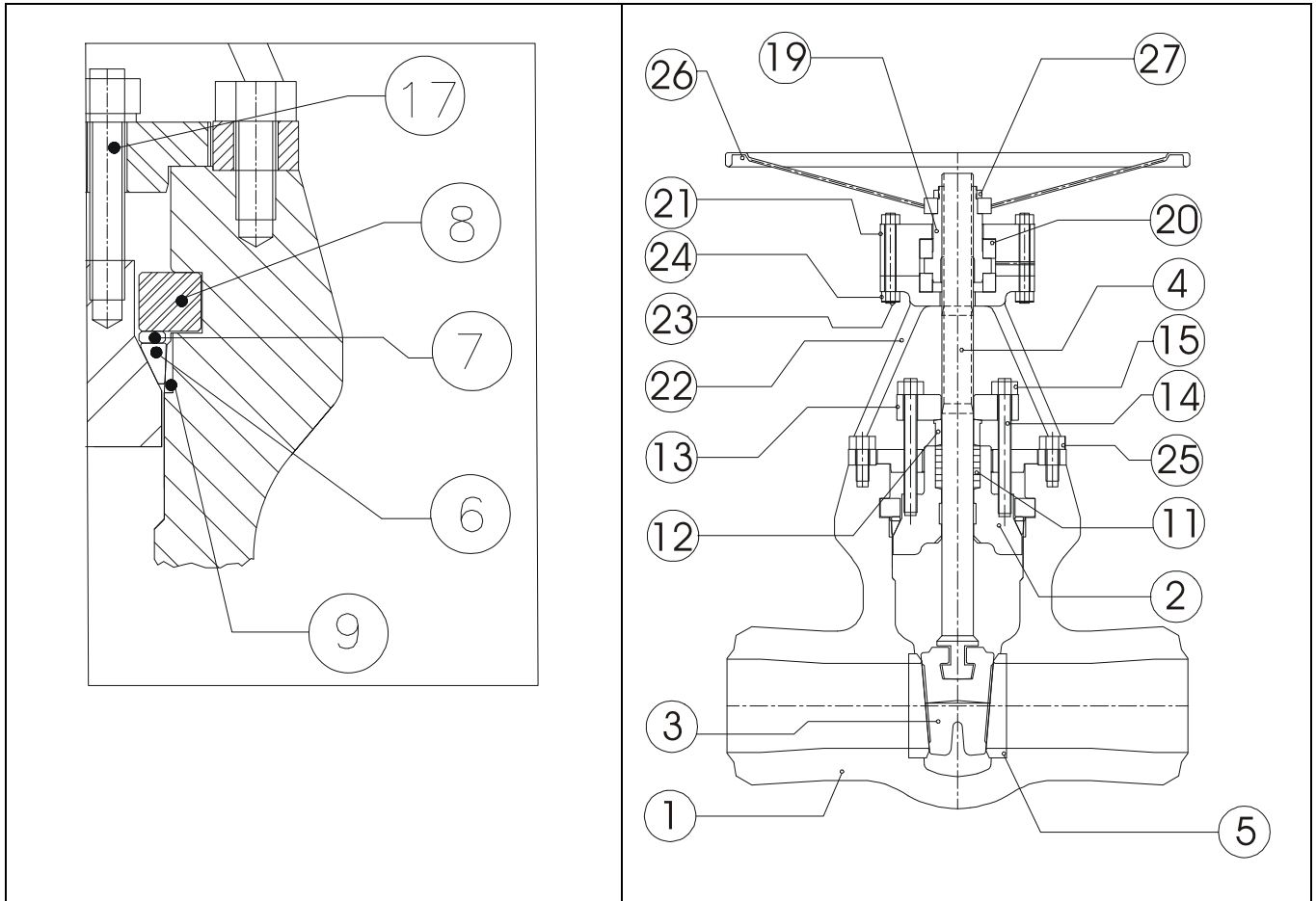
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PRESSURE-SEAL GATE VALVES CLASS 600, 900, 1500, & 2500 ALL SIZES



DISASSEMBLY

- Read the warning notice listed in section 2.0 of these instructions.
- Loosen gland stud nuts (15). Loosen and remove bonnet nuts (25) and yoke nuts (25).
- Install rigging to support weight of the yoke assembly and the hand wheel or actuator if present.
- Turn the hand wheel to closed position. The yoke and hand wheel will back off of the stem (4). Temporarily remove yoke assembly.
- Remove the gland flange (13) gland (12), and all packing material (11).
- Using a block of wood or similar soft material, drive the bonnet (2) down until there is sufficient clearance above the bonnet to remove the segment rings (8). Care should be taken to ensure that bonnet does not become cocked during this process.
- Using a brass bar, tap the top of each segment ring to loosen, using lubricants as necessary. Remove the segments by prying, with a screwdriver or similar tool, out away from the body until the segments are free to be lifted out. Clean all surfaces of foreign matter prior to next step.



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- Replace the yoke and turn the hand wheel to open valve. After back seating, continue to raise the bonnet until the pressure seal gasket (6) is free. Pull the yoke assembly, bonnet (2) stem (4), and the wedge (3) from the body (1).
- Use extreme caution to not scratch or damage the seating surfaces of the body, gasket, bonnet, or wedge. Match mark the wedge to the body for re-assembly.
- Remove the gasket (6) from the bonnet. Remove the stem from the bonnet.
- Clean the stuffing box and stem.

RE-ASSEMBLY

- Clean all parts thoroughly. Polish gasket seating surface in the body (9) and the bonnet (2) with fine emery cloth. Lubricate the gasket seating surfaces with a light oil to prevent galling during assembly. Replace gasket (6) with a new factory supplied part.
- Insert the wedge (3) and the stem (4) into the body (1) following the match marks previously made.
- Install the gasket (6) onto the bonnet. Insert the bonnet into the body (1). Install the segment rings (8) into the body groove and backseat the bonnet to seat the gasket and install the bonnet bolting. Torque per the values listed in section "8" of this manual.
- Install the yoke assembly. Install new packing, and reinstall the gland, gland flange and tighten the packing nuts.

2.7 Maintenance of disassembled Valves

- Following the above listed disassembly procedures, examine the body cavity 1 for deposits of foreign material.
- Examine seating surfaces of seat rings (5) and wedge (3) for wear.
- Examine stem (4), seal area and threads for excessive wear.
- If excessive wear is evident, worn parts, or if necessary, the entire valve should be reconditioned or replaced.
- xanor de México s.a. de c.v. Offers complete replacement seal kits and spare parts for reconditioning. When ordering, always state the figure number of the valve and the body material.
- xanor de México s.a. de c.v. Also offers complete re-manufacturing services to rework your valve. If you find this necessary, our Valve Service Centers will remanufacture your valve to factory specifications.

2.8 Lubrication

- Parts requiring lubrication are stem threads (4) entire gasket (6) and under all nuts (25) a before torquing. Bonnet draw studs (25) should be lubricated with an antisieze lubricant to promote ease of future disassembly.

2.9 Special tools and instructions

- Recommended bolting torques are shown in section "8" of this manual
- No special tools are required for general valve maintenance. However, in certain large valve styles, the use of a hydraulic torque device may be necessary to achieve optimum bolt torque.

2.10 Preventative maintenance

- Refer to section "1" of this manual for general valve maintenance information.



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Section 2A

PRESSURE-SEAL GATE VALVES FLEXIBLE WEDGE WITH THREADED BONNET/PLATE CLASS 600, 900, 1500, & 2500 ALL SIZES

2.0 Complete Disassembly

CAUTION! Before performing any operation of this procedure do not disassemble the valve and ensure that pressure has been removed from the line and from any cavities within the valve

Do not forget to have the spare parts that you will need it before disassembly the valve. Please contact xanor the mexico, s.a. de c.v.

The following page contains a general disassembly and re-assembly procedure; special attention should be paid to the following:

2.1 Extreme care should be taken to ensure that the sealing surfaces of the gasket area do not become damaged during disassembly or re-assembly. This includes scratches caused by misalignment and/or by debris in the seal area.

2.2 xanor de México s.a. de c.v. Recommends replacing the pressure seal bonnet gasket (6) when servicing any valve.

2.3 Caution should be exercised in handling the new bonnet gasket (6) to avoid scratching its surface.

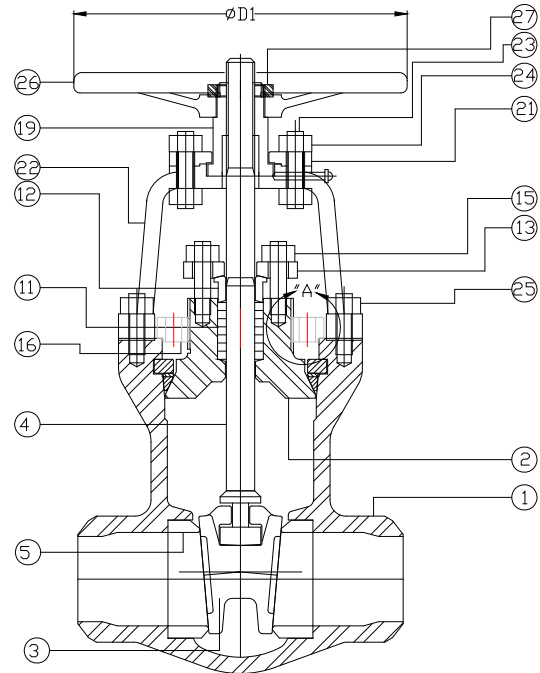
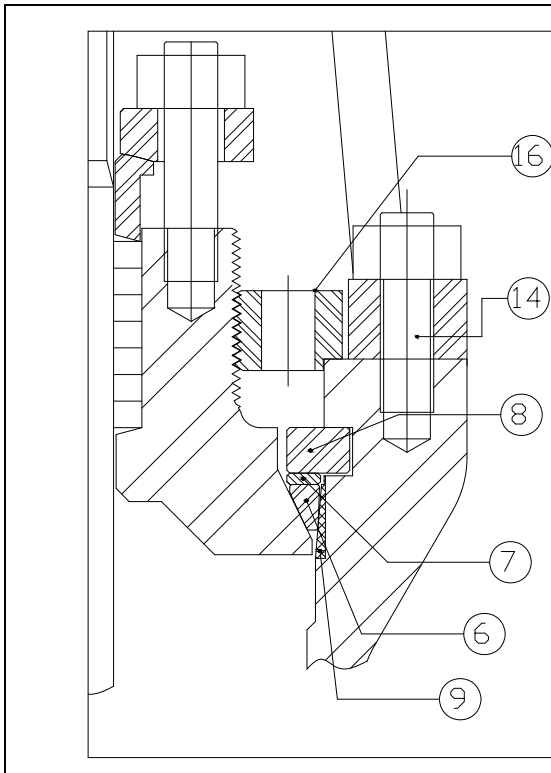
2.4 When reassembling the valve it should be noted that it would be necessary to tighten the bonnet draw bolts (13)

- a) As the system pressure builds up
- b) And when the valve arrives to operation temperature

This process will ensure a positive seal for the pressure seal gasket.



PRESSURE-SEAL GATE VALVES FLEXIBLE WEDGE WITH THREADED BONNET/PLATE CLASS 600, 900, 1500, & 2500 ALL SIZES



DISASSEMBLY

Before disassemble mark all pieces in a way that you can put it again, in same position. This is special important for the wedge position (do not turn around)

- With assembled valve open it totally, force the stem against the back seat, this will help to loose the threaded plate
- Use a bronze bar to hit on the grooves/holes on the threaded plate (16) to unscrew counter clock wise the bonnet
- When bonnet (2) is loose, close the valve and disassemble the yoke (22) and stem nut (19)
- Unscrew the threaded plate (16) from bonnet.
- Push down the bonnet (2).
- Using the holes on the third flange on the body (1), push the segmented ring (8) out, using a pin and a hammer.
- Put back the yoke (22) and the stem nut (19) and open the valve again, in this way, you will pull the pressure seal gasket and bonnet out.
- Review the pressure seal gasket (6) and body surfaces for any damage, replace parts as necessary



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RE-ASSEMBLY

- Clean all parts thoroughly. Polish gasket seating surface in the body (1) and the bonnet (2) with fine emery cloth. Lubricate the gasket seating surfaces with a light oil to prevent galling during assembly. Replace gasket 9 with a new factory supplied part.
- Place back the stem (4) and wedge (3) into the body (1).
- Place back the bonnet (2) into the body (1) (with the packing placed already inside).
- Place back into the body (1) the pressure seal gasket (9) and the segmented ring (8)
- Verify the dimension between the segmented ring (8) and the pressure seal gasket (6). Machine the thrust ring (7) to this dimension (tolerance +0.000" / -0.010") and placed into the body
- Place back the threaded plate (16) and screw into the bonnet (2) Use the yoke (22) and the stem nut (19) to pull the bonnet (2) up and force the stem (4) against the back seat.
NOTE: Be sure that all parts are clean and lubricated.
- In that position, use a bronze bar to thread clock wise the plate (16).
- Take out the yoke (22) and stem nut (19) in order to assembly: the packing gland (11), packing gland flange (13) packing gland bolts (14) and nuts (13).
- Re assembly the yoke (22) and stem nut (19).
- With the valve totally open, force the stem nut (19) and see if you can thread the plate (16) more.
- Tight the packing with the packing bolts and if you can pressurize the valve, put some hydraulic pressure on the line that would help to pull the bonnet 2 up, even more and get a better seal. (using around 1500 to 2000 psi, if there is not leak, the bonnet will be in a pressurized condition)
- Hitting the threaded plate (16) with the bronze bar, try to tight the plate more.
- Tight all bolts according to the recommended torque in Section 8 of this instructions manual.

2.5 Maintenance of disassembled Valves

- Following the above listed disassembly procedures, examine the body cavity 1 for deposits of foreign material.
- Examine seating surfaces of seat rings (5) and wedge (3) for wear.
- Examine stem (4), seal area and threads for excessive wear.
- If excessive wear is evident, worn parts, or if necessary, the entire valve should be reconditioned or replaced.
- xanor de México s.a. de c.v. Offers complete replacement seal kits and spare parts for reconditioning. When ordering, always state the figure number of the valve and the body material.
- xanor de México s.a. de c.v. Also offers complete re-manufacturing services to rework your valve. If you find this necessary, our Valve Service Centers will remanufacture your valve to factory specifications.

2.6 Lubrication

Parts requiring lubrication are stem threads 4, entire gasket 6, and under all nuts 17a before torquing. Bonnet draw studs 17 should be lubricated with an antisieze lubricant to promote ease of future disassembly.

2.7 Special tools and instructions

Recommended bolting torques is shown in section "8" of this manual.

No special tools are required for general valve maintenance. However, in certain large valve styles, the use of a hydraulic torque device may be necessary to achieve optimum bolt torque.

2.8 Preventative maintenance

Refer to section "1" of this manual for general valve maintenance information.



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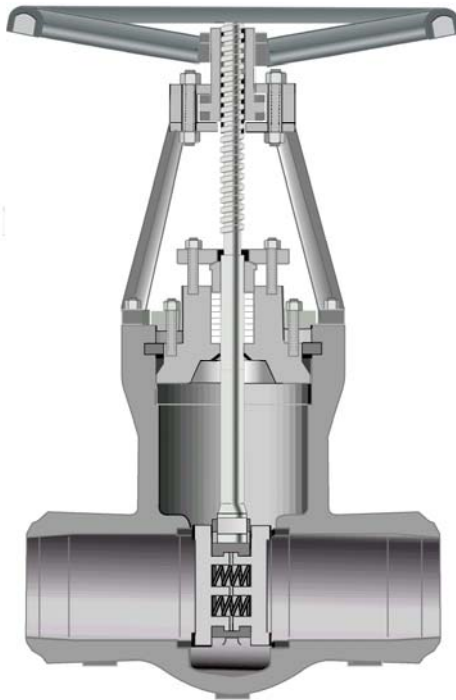
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Section 3

Pressure Seal Gate Valves Parallel Disc





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PRESSURE SEAL PARALLEL DISC GATE VALVES

3.0 General Information

For general operation & maintenance information regarding this or any other Xanik valve please refer to section "1" of this manual.

3.1 Complete Disassembly

CAUTION! Before disassembling any valve, ensure that all pressure has been removed from the line and from any cavities within the valve.

Hand wheel operated valves

3.2 Upon completion of the disassembly procedure listed below, the hand wheel (26) may be separated from the yoke sleeve (19) by removing the hand wheel nut (27).

Gear and motor operated valves refer to section "9" of this manual for specific gear and motor information.

The following page contains a general disassembly and re-assembly procedure. These procedures cover the bulk of the disassembly and re-assembly process, however special attention should be paid to the following:

3.3 Extreme care should be taken to ensure that the sealing surfaces of the gasket area (9) do not become damaged during disassembly or re-assembly. This includes scratches caused by misalignment and/or by debris in the seal area.

3.4 xanor de Mexico s.a. de c.v. recommends replacing the pressure seal bonnet gasket (6) when servicing any valve.

3.5 Caution should be exercised in handling the new bonnet gasket (6) to avoid scratching its surfaces.

3.6 When reassembling the valve it should be noted that in certain cases it might be necessary to tighten the bonnet draw bolts (25) as the system pressure is built up. This process will ensure a positive seal for the pressure seal gasket.



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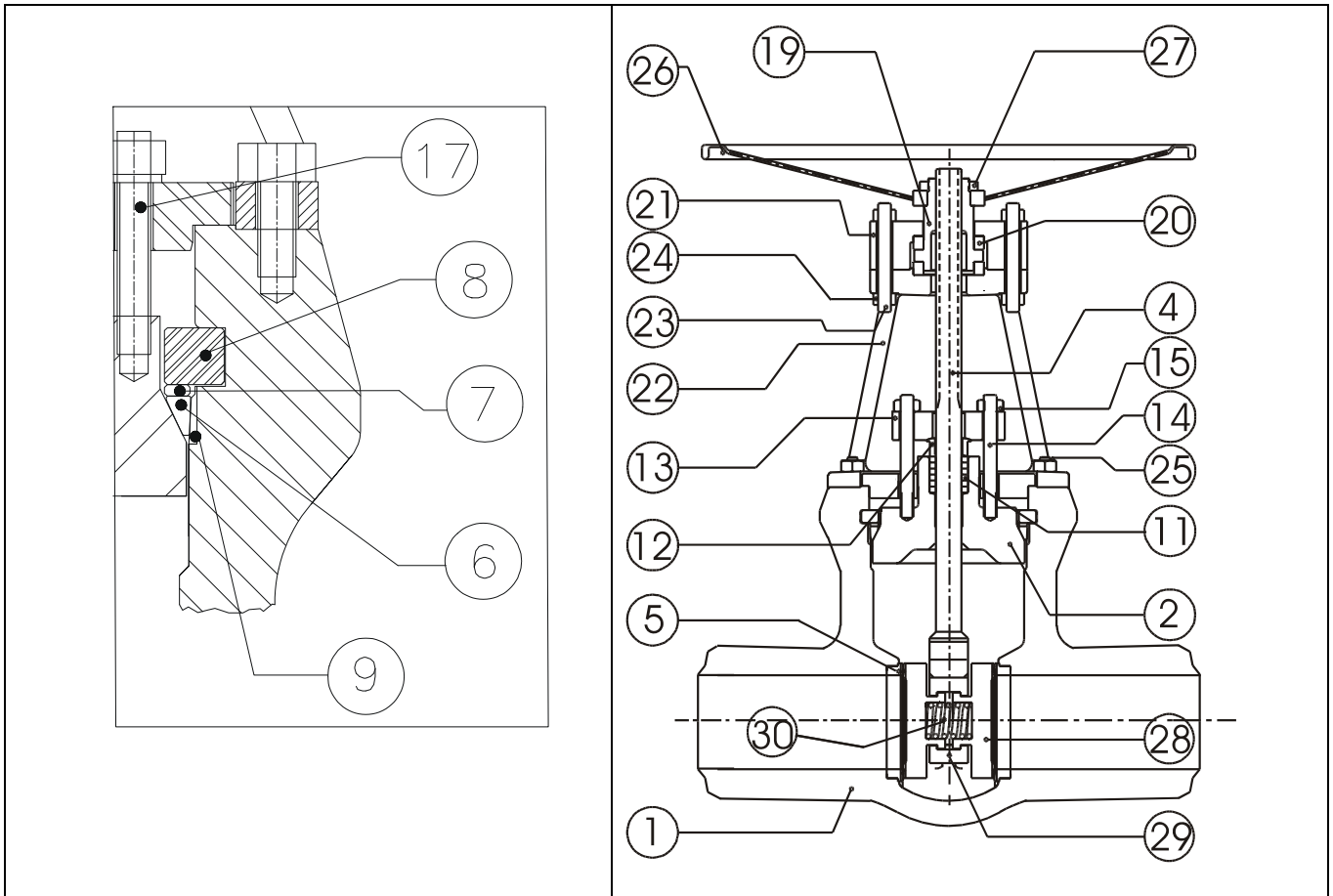
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PRESSURE-SEAL GATE VALVES PARALLEL SLIDE CLASS 600, 900, 1500 & 2500 ALL SIZES



DISASSEMBLY

- Read the warning notice listed in section 2.0 of these instructions
- Loosen gland stud nuts (15). Loosen and remove bonnet nuts (17) and yoke nuts (25).
- Install rigging to support weight of the yoke assembly and the hand wheel or actuator if present.
- Turn the hand wheel to closed position. The yoke and hand wheel will back off of the stem (4). Temporarily remove yoke assembly.
- Remove the gland flange (13) gland (12) and all packing material (11).
- Using a block of wood or similar soft material, drive the bonnet (2) down until there is sufficient clearance above the bonnet to remove the segment rings (8).
- Care should be taken to ensure that bonnet does not become cocked during this process.
- Using a brass bar, tap the top of each segment ring to loosen, using lubricants as necessary. Remove the segments by prying, with a screwdriver or similar tool, out away from the body until the segments are free to be lifted out. Clean all surfaces of foreign matter prior to next step.

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- Replace the yoke and turn the hand w heel to open valve. After back-seating, continue to raise the bonnet until the pressure seal gasket (6) is free. Pull the yoke assembly, bonnet (2) stem (4) and the discs (28) from the body (1). Use caution while lifting the stem/disc assembly off the seats as the disc will “pop” open at the bottom when free of the seating.
- Use extreme caution to not scratch or damage the sealing surfaces of the body, gasket, bonnet, discs or seat rings.
- Remove the gasket (6) from the bonnet. Remove the bonnet over the end of the stem.
- Clean the stuffing box and stem.

RE-ASSEMBLY

- Clean all parts thoroughly. Polish gasket-seating surface in the body (9) and on the bonnet (2) Replace gasket 6 with a factory supplied part. Lubricate the gasket seating surfaces with light oil or other suitable material to prevent galling during re-assembly.
- Insert the disc (28) / stem (4) assembly into the body (1) note that it is necessary to clamp the bottom of the discs together so, they will fit between the seat rings. Once between the seat rings the clamp can be removed and assembly completed.
- Install the new gasket (6) and packing to the bonnet. Insert the bonnet into the body (1). Install the segment rings (8) into the body groove and backseat the bonnet to seat the gasket and install the bonnet bolting. Torque the bolts per the values in section “8”.
- Install the yoke and bolting. Install new packing and replace the gland, and gland flange and tighten the packing gland nuts.

NOTE: After system pressure has been re-established, retighten all bolting to the TORQUE values given in section “7” of this manual.

3.7 Maintenance of disassembled Valves

- Following the above listed disassembly procedures, examine the body cavity (1) for deposits of foreign material.
- Examine seating surfaces of seat rings (9) and discs (28) for wear.
- Inspect disc (30) spring holes for wear.
- Examine carrier (29) guide surfaces for wear.
- Examine stem (4) seal area and threads for excessive wear.
- Inspect springs (30) and pin for signs of wear.
- If excessive wear is evident, worn parts, or if necessary, the entire valve should be reconditioned or replaced.
- xanor de mexico s.a. de c.v. offers a complete replacement seal kits and spare parts for reconditioning. When ordering, always state the figure number and serial number of the valve and the body material.
- xanor de mexico s.a. de c.v. also offers complete re-manufacturing services to rework your valve. If you find this necessary, our Service Centers will remanufacture your valve to factory specifications. Ask for your closest Service Center or repair facility for Xanik Valves.

3.8 Lubrication

Parts requiring lubrication are stem threads 4, entire gasket 6 and under all nuts 17a for torquing. Bonnet draw studs should be lubricated with an antisieze lubricant to promote ease of future disassembly.

3.9 Special tools and instructions

Recommended bolting torques are shown in section “” of this manual

A clamping device is recommended to prevent the disc halves from springing open during installation/removal. This clamp can be a commercially available unit, or contact xanor de mexico s.a. de c.v. for more information. Certain large valve styles may require the use of a hydraulic torque device to achieve optimum bolt torque.

3.10 Preventative maintenance

Refer to section “1” of this manual for general Valve maintenance information.



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Section 3A

Pressure Seal Gate Valves Parallel Disc SLIDE WITH THREADED BONNET/PLATE

PRESSURE SEAL PARALLEL DISC GATE VALVES SLIDE WITH THREADED BONNET/PLATE

3.0 General Information

For general operation & maintenance information regarding this or any other Xanik valve please refer to section "1" of this manual.

3.1 Complete Disassembly

CAUTION! Before disassembling any valve, ensure that all pressure has been removed from the line and from any cavities within the valve.

Hand wheel operated valves

3.2 Upon completion of the disassembly procedure listed below, the hand wheel 26 may be separated from the yoke sleeve 19, by removing the hand wheel nut 27.

Gear and motor operated valves refer to section "9" of this manual for specific gear and motor information.

The following page contains a general disassembly and re-assembly procedure. These procedures cover the bulk of the disassembly and re-assembly process, however special attention should be paid to the following:

3.3 Extreme care should be taken to ensure that the sealing surfaces of the gasket area 9 do not become damaged during disassembly or re-assembly. This includes scratches caused by misalignment and/or by debris in the seal area.

3.4 xanor de Mexico s.a. de c.v. recommends replacing the pressure seal bonnet gasket 6 when servicing any valve.

3.5 Caution should be exercised in handling the new bonnet gasket 6 to avoid scratching its surfaces.

3.6 When reassembling the valve it should be noted that in certain cases it might be necessary to tighten the bonnet draw bolts 17 as the system pressure is built up. This process will ensure a positive seal for the pressure seal gasket.



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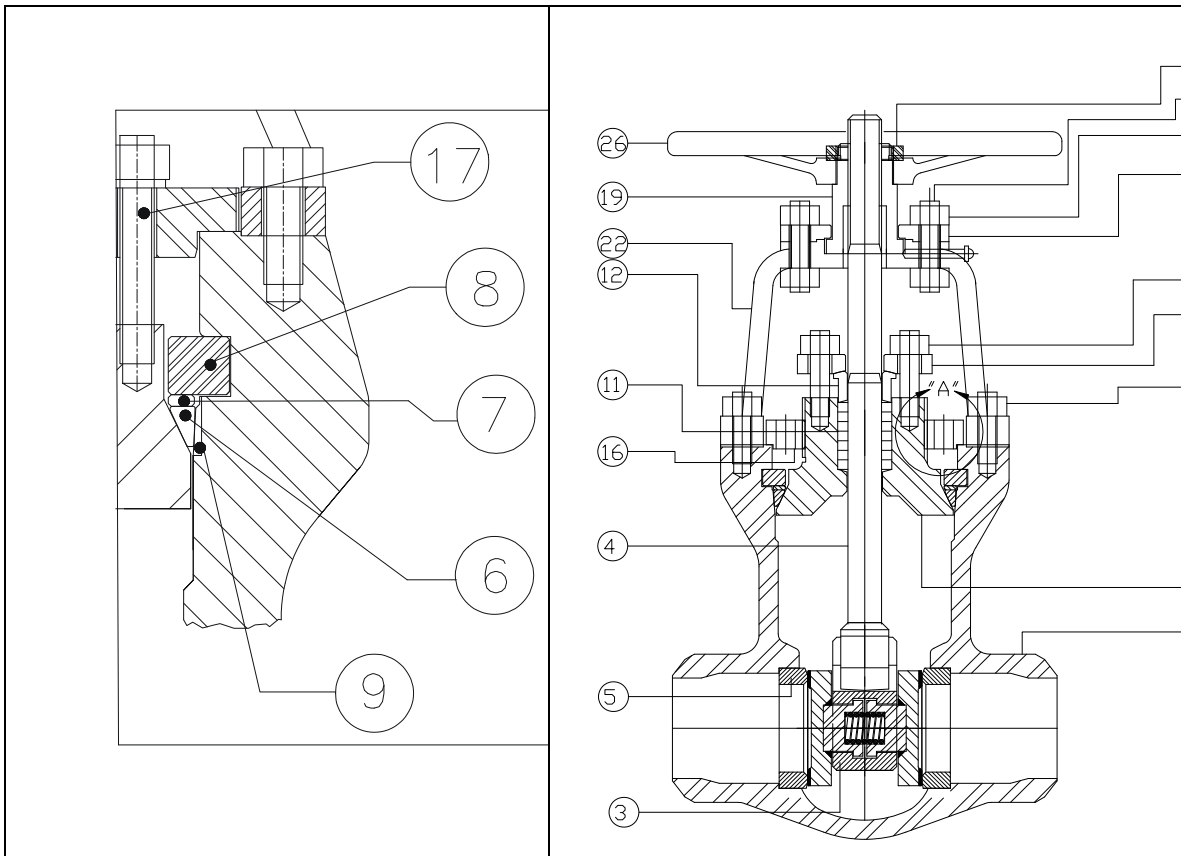
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PRESSURE-SEAL GATE VALVES PARALLEL SLIDE WITH THREADED BONNET/PLATE CLASS 600, 900, 1500 & 2500 ALL SIZES



DISASSEMBLY

Before disassemble mark all pieces in a way that you can put it again, in same position. This is special important for the wedge position (do not turn around)

- With assembled valve open it totally, force the stem against the back seat, this will help to loose the threaded plate
- Use a bronze bar to hit on the grooves/holes on the threaded plate (16) to unscrew counter clock wise the bonnet
- When bonnet (2) is loose, close the valve and disassemble the yoke (22) and stem nut (19)
- Unscrew the threaded plate (16) from bonnet.
- Push down the bonnet (2).
- Using the holes on the third flange on the body (1), push the segmented ring (8) out, using a pin and a hammer.
- Put back the yoke (22) and the stem nut (19) and open the valve again, in this way, you will pull the pressure seal gasket and bonnet out.
- Review the pressure seal gasket (6) and body surfaces for any damage, replace parts as necessary



RE-ASSEMBLY

- Clean all parts thoroughly. Polish gasket seating surface in the body (1) and the bonnet (2) with fine emery cloth. Lubricate the gasket seating surfaces with a light oil to prevent galling during assembly. Replace gasket 9 with a new factory supplied part.
- Place back the stem (4) and wedge (3) into the body (1).
- Place back the bonnet (2) into the body (1) (with the packing placed already inside).
- Place back into the body (1) the pressure seal gasket (9) and the segmented ring (8)
- Verify the dimension between the segmented ring (8) and the pressure seal gasket (6). Machine the thrust ring (7) to this dimension (tolerance +0.000" / -0.010") and placed into the body
- Place back the threaded plate (16) and screw into the bonnet (2) Use the yoke (22) and the stem nut (19) to pull the bonnet (2) up and force the stem (4) against the back seat.
NOTE: Be sure that all parts are clean and lubricated.
- In that position, use a bronze bar to thread clock wise the plate (16).
- Take out the yoke (22) and stem nut (19) in order to assembly: the packing gland (11), packing gland flange (13) packing gland bolts (14) and nuts (13).
- Re assembly the yoke (22) and stem nut (19).
- With the valve totally open, force the stem nut (19) and see if you can thread the plate (16) more.
- Tight the packing with the packing bolts and if you can pressurize the valve, put some hydraulic pressure on the line that would help to pull the bonnet 2 up, even more and get a better seal. (using around 1500 to 2000 psi, if there is not leak, the bonnet will be in a pressurized condition)
- Hitting the threaded plate (16) with the bronze bar, try to tight the plate more.
- Tight all bolts according to the recommended torque in Section 8 of this instructions manual.

NOTE: After system pressure has been re-established, retighten all bolting to the TORQUE values given in section "7" of this manual.

3.7 Maintenance of disassembled Valves

Following the above listed disassembly procedures, examine the body cavity 1 for deposits of foreign material.

Examine seating surfaces of seat rings (5) and discs for wear.

Inspect disc spring holes for wear.

Examine carrier guide surfaces for wear.

Examine stem (4) seal area and threads for excessive wear.

Inspect springs and pin for signs of wear.

If excessive wear is evident, worn parts, or if necessary, the entire valve should be reconditioned or replaced.

xanor de Mexico s.a. de c.v. offers a complete replacement seal kits and spare parts for reconditioning. When ordering, always state the figure number and serial number of the valve and the body material.

xanor de Mexico s.a. de c.v. also offers complete re-manufacturing services to rework your valve. If you find this necessary, our Service Centers will remanufacture your valve to factory specifications. Ask for your closest Service Center or repair facility for Xanik Valves.

3.8 Lubrication

Parts requiring lubrication are stem threads 4, entire gasket 6 and under all nuts 17a for torquing. Bonnet draw studs should be lubricated with an antisieze lubricant to promote ease of future disassembly.

3.9 Special tools and instructions

Recommended bolting torques are shown in section "" of this manual

A clamping device is recommended to prevent the disc halves from springing open during installation/removal. This clamp can be a commercially available unit, or contact xanor de Mexico s.a. de c.v. for more information. Certain large valve styles may require the use of a hydraulic torque device to achieve optimum bolt torque.

3.10 Preventative maintenance

Refer to section "1" of this manual for general Valve maintenance information.



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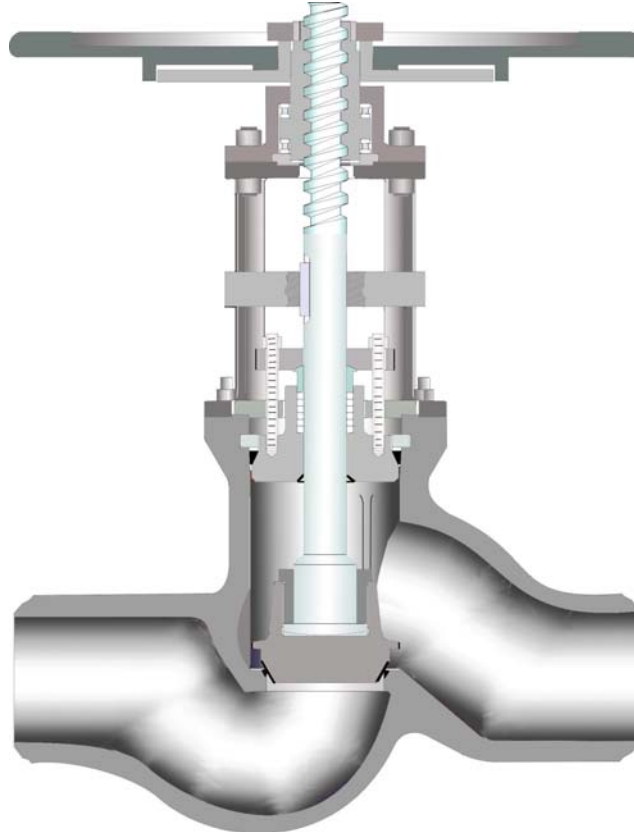
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Section 4

Pressure Seal "T" Globe & Stop Check Valves





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PRESSURE SEAL GLOBE VALVES

4.0 General Information

For general operation and maintenance information regarding this or any other Valve please refer to section "1" of this manual.

4.1 Complete Disassembly

CAUTION! Before disassembling any Valve, ensure that all pressure has been removed from the line and from any cavities within the valve.

Hand wheel operated valves

Upon completion of the disassembly procedure listed below, the hand wheel 25 may be separated from the yoke sleeve 18, by removing the hand wheel nut 26.

4.2 Gear and motor operated valves

Refer to section "9" of this manual for specific gear and motor information.

4.3 The following page contains a general disassembly and reassembly procedure. These procedures cover the bulk of the disassembly and reassembly process; however special attention should be paid to the following:

4.3.1 Extreme care should be taken to ensure that the sealing surfaces 9 of the gasket area do not become damaged during disassembly or reassembly. This includes scratches caused by misalignment and/or by debris in the seal area.

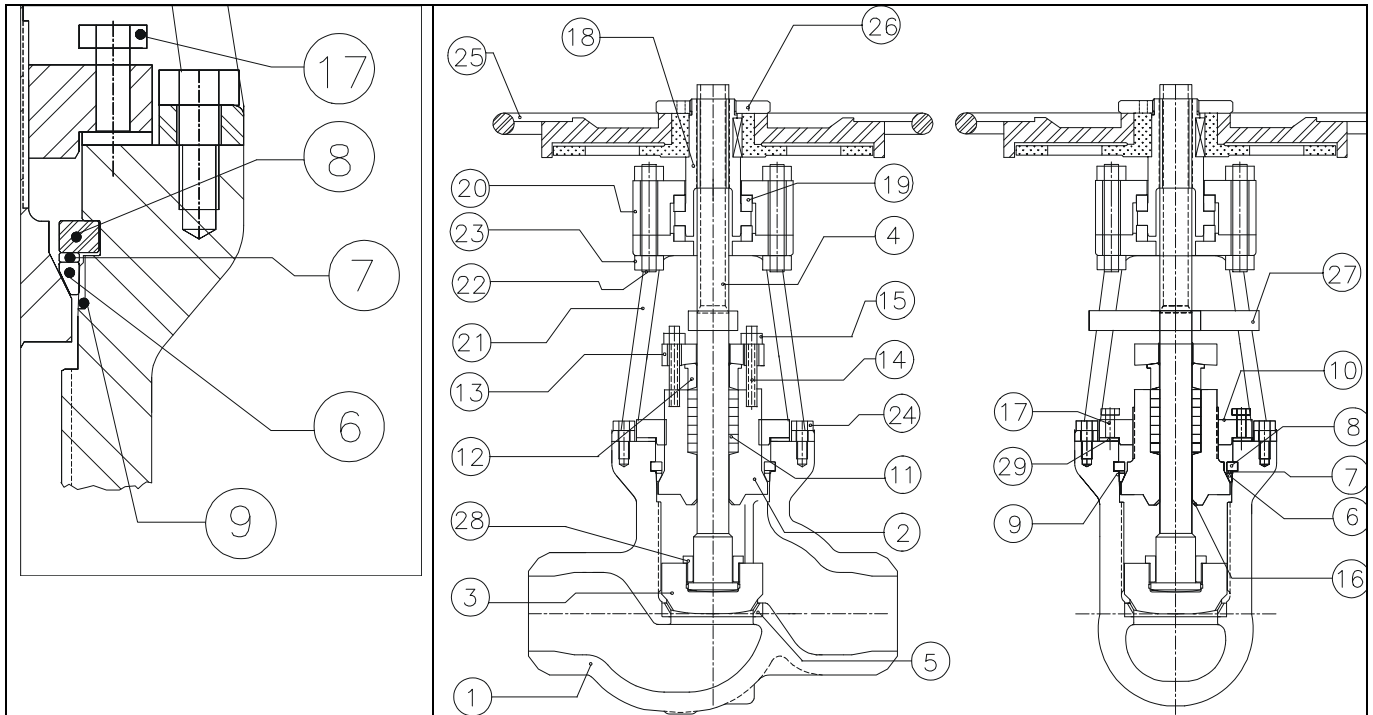
4.3.2 xanor de Mexico s.a. de c.v. recommends to replace the pressure seal bonnet gasket 6 when servicing any valve.

4.3.3 Caution should be exercised in handling the new bonnet gasket 6 to avoid scratching its surfaces.

4.3.4 When reassembling the valve it should be noted that in certain cases it may be necessary to tighten the bonnet draw bolts as the system pressure is built up. This process will ensure a positive seal for the pressure seal gasket.



**PRESSURE-SEAL "T" GLOBE & STOP CHECK VALVES
CLASS 600, 900, 1500, & 2500 ALL SIZES**



DISASSEMBLY

- Read the warning notice in section 2.0 of these instructions.
- Loosen gland stud nuts (15) Loosen and remove bonnet bolts (17) and yoke nuts (24).
- Install rigging to support weight of the yoke assembly and the hand wheel or actuator if present.
- Turn the hand wheel to closed position. The yoke and hand wheel will back off of the stem (4). Temporarily remove yoke assembly.
- Remove the gland flange (13) gland (12), and all packing material (11).
- Take off the pulling plate (10) and the stem guide (27)
- Using a block of wood or similar soft material, drive the bonnet (2) down until there is sufficient clearance above the bonnet to remove the segment rings (8).
- Care should be taken to ensure that bonnet does not become cocked during this process.
- Using a brass bar, tap the top of each segment ring to loosen, using lubricants as necessary. Remove the segments by prying, with a screwdriver or similar tool, out away from the body until the segments are free to be lifted out. Clean all surfaces of foreign matter prior to next step.
- Replace the yoke and the stem guide (27) and turn the hand wheel to open valve. After back seating, continue to raise the bonnet until the pressure seal gasket (6) is free. Pull the yoke assembly, bonnet (2) stem (4) and the disc (3) from the body (1).
- Use extreme caution to not scratch or damage the seating surfaces of the body (9) gasket (6) bonnet (2) or Disc (3) Remove the gasket 6 from the bonnet. Remove the stem from the bonnet. Unscrew the Disc Nut 28 from the Disc
- Clean the stuffing box and stem.



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RE-ASSEMBLY

- Clean all parts thoroughly. Polish gasket seating surface in the body (9) and the bonnet (2) with fine emery cloth. Lubricate the gasket seating surfaces with a light oil to prevent galling during assembly. Replace gasket (6) with a new factory supplied part.
- Insert the Disc (3) assembled with the stem (4) into the body (1) following the match marks previously made.
- Install the gasket (6) onto the bonnet. Insert the bonnet into the body (1). Install the segment rings (8) into the body groove and backseat the bonnet to seat the gasket and install the pulling plate (10) Torque the pulling plate bolts (17) per the values listed in section "8" of this manual.
- Install the yoke assembly. Install new packing, and reinstall the gland, gland flange, stem guide and tighten the packing nuts.

SPECIAL NOTE: After system pressure has been re-established, retighten all bolting to the Torque values given in section "8" of this manual.

4.4 Maintenance of disassembled valves

Following disassembly procedures in Section 2.0, examine body cavity (1) for deposits of foreign material. Examine seating surfaces of seat ring (5) and disc (3) for wear. Examine stem (4) seal area and threads for excessive wear.

If excessive wear is evident, worn parts, or if necessary, entire valve should be reconditioned or replaced. xanor de México s.a. de c.v. recommends to replace the pressure seal bonnet gasket (6) when servicing any valve. It should be noted that the Xanik pressure seal globe valve is available in a standard globe and stop check (non return) configuration. Each configuration utilizes a specific disc retention system.

xanor de México s.a. de c.v. offers complete replacement seal kits and spare parts for reconditioning. When ordering, always state the figure number, serial number of the valve and the body material.

xanor de México s.a. de c.v. also offers complete re-manufacturing services to rework your valve. If you find this necessary, our Service Centers will remanufacture your valve to factory specifications. Ask for the closest authorized repair facility in your location.

4.5 Lubrication

Parts requiring lubrication are stem 4, entire gasket (6) and under all nuts and bolts 17 before torquing. Bonnet draw bolts should be lubricated with an antisieze lubricant to promote ease of future disassembly.

4.6 Special tools and instructions

Recommended bolting torques is shown in section "8" of this manual.

No special tools are required for general valve maintenance. However, in certain large valve styles, the use of a hydraulic torque device may be necessary to achieve optimum bolt torque.

4.7 Preventative maintenance

Refer to section "1" for general maintenance data



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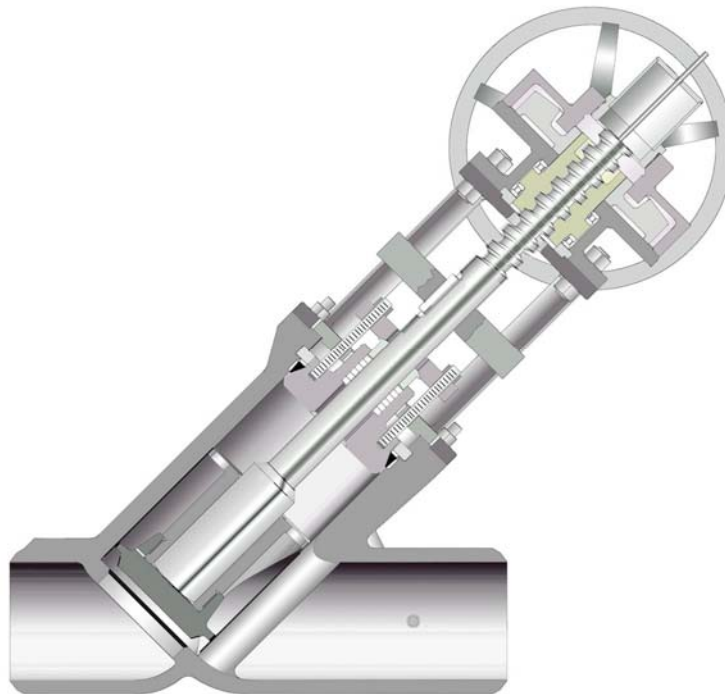
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Section 5

PRESSURE-SEAL "Y" GLOBE & STOP CHECK VALVES





5.0 General Information

For general operation & maintenance information regarding this or any other valve please refer to section "1" of this manual.

5.1 Complete Disassembly

CAUTION! Before disassembling any valve, ensure that all pressure has been removed from the line and from any cavities within the valve.

Note: Certain Xanik pressure seal Y globe valves utilize a bonnet configuration similar to the normal "T" pattern globe valves. If the Y globe valve does not have the bonnet shown in figure below, then the disassembly procedures from section "4" of this manual should be used.

Hand wheel operated valves

Upon completion of the disassembly procedure listed below, the hand wheel 25 may be separated from the yoke sleeve 18, by removing the hand wheel nut 26. (See figure of "T" pattern globe valves in the section 4 of this manual.)

Gear and motor operated valves

Refer to section "" of this manual for specific gear and motor information.

5.2 The following page contains a general disassembly and re-assembly procedure. These procedures cover the bulk of the disassembly and re-assembly process, however special attention should be paid to the following:

5.3 Extreme care should be taken to ensure that the sealing surfaces of the gasket area 9 do not become damaged during disassembly or re-assembly. This includes scratches caused by misalignment and/or by debris in the seal area.

Note: Due to the special orientation of Y Globe bonnets, it is especially important to ensure that the bonnet does not become misaligned during disassembly or re-assembly. Whenever possible, to further facilitates disassembly, the Y Globe valve should be removed from the pipeline and place in an angled fixture. This will orient the bonnet vertically and discourage misalignment.

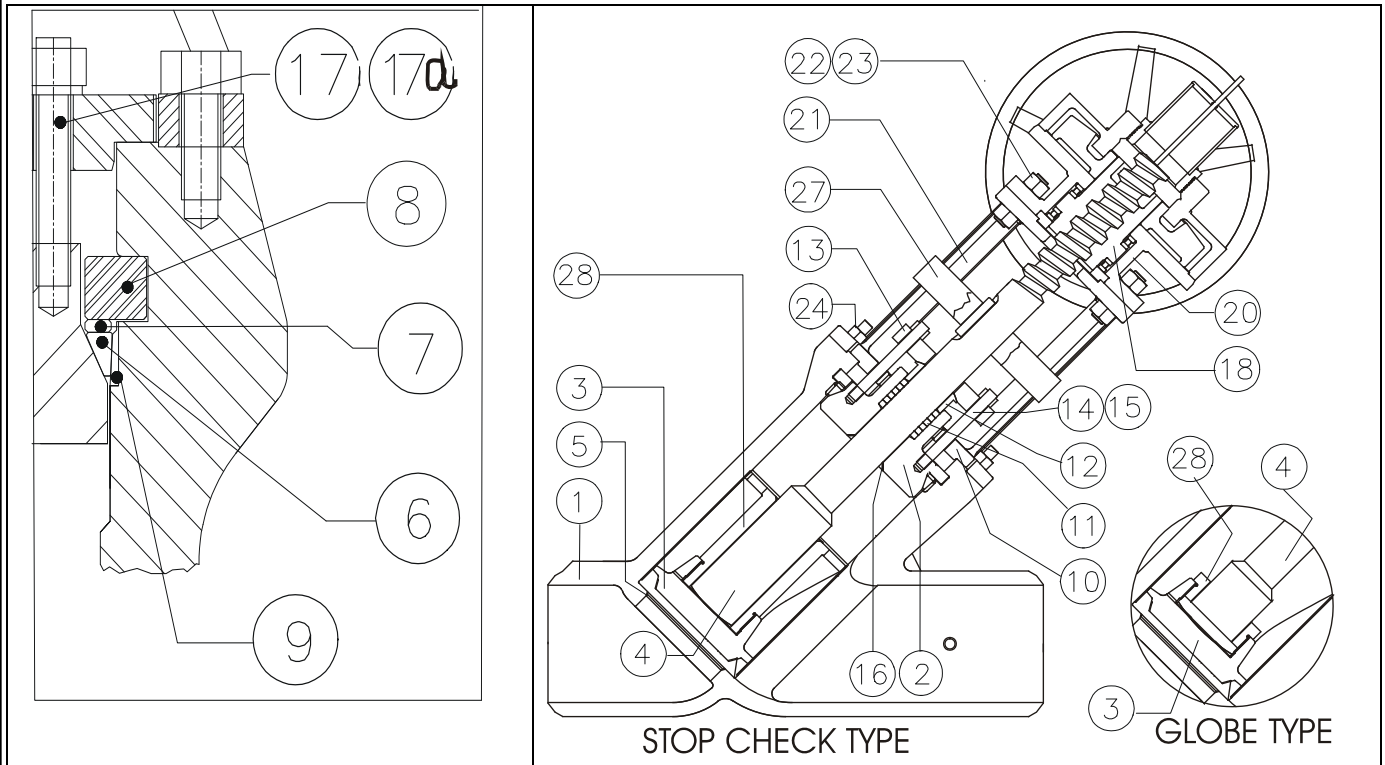
5.4 xanor de mexico s.a. de c.v. recommends replacing the pressure seal bonnet gasket 6 when servicing any valve.

5.5 Caution should be exercised in handling the new bonnet gasket 6 to avoid scratching its Surfaces.

5.6 When reassembling the valve it should be noted that in certain cases it might be necessary to tighten the bonnet draw bolts 17 as the system pressure is built up. This process will ensure a positive seal for the pressure seal gasket.



**PRESSURE-SEAL Y GLOBE & STOP CHECK VALVES
CLASS 600, 900, 1500, & 2500 ALL SIZES**



DISASSEMBLY

- Read the warning notice listed in section 2.0 of these instructions.
- Loosen gland stud nuts (15). Loosen and remove bonnet nuts (17) and yoke nuts (24).
- Install rigging to support weight of the yoke assembly and the hand wheel or actuator if present.
- Turn the hand wheel to closed position. The yoke and hand wheel will back off of the stem 4. Temporarily remove yoke assembly.
- Remove the gland flange (13) gland (12) and all packing material (11).
- Using a block of wood or similar soft material, drive the bonnet (2) down until there is sufficient clearance above the bonnet to remove the segment rings (8). Care should be taken to ensure that bonnet does not become cocked during this process.
- Using a brass bar, tap the top of each segment ring to loosen, using lubricants as necessary. Remove the segments by prying, with a screwdriver or similar tool, out away from the body until the segments are free to be lifted out. Clean all surfaces of foreign matter prior to next step.
- Replace the yoke and turn the hand wheel to open valve. After back seating, continue to raise the bonnet until the pressure seal gasket (6) is free. Pull the yoke assembly, bonnet (2) stem (4), and the Disc (3) from the body (1).
- Use extreme caution to not scratch or damage the seating surfaces of the body, gasket, bonnet, or wedge.
 - Remove the gasket (6) from the bonnet. Remove the stem from the bonnet.
- Clean the stuffing box and stem.



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RE-ASSEMBLY

- Clean all parts thoroughly. Polish gasket seating surface in the body (9) and the bonnet (2) with fine emery cloth. Lubricate the gasket seating surfaces with a light oil to prevent galling during assembly. Replace gasket (6) with a new factory supplied part.
- Insert the Disc (3) and the stem (4) into the body.
- Install the gasket (6) onto the bonnet. Insert the bonnet into the body (1). Install the segment rings (8) into the body groove and backseat the bonnet to seat the gasket and install the bonnet bolting. Torque per the values listed in section "8" of this manual.
- Install the yoke assembly. Install new packing, and reinstall the gland, gland flange, stem guide and tighten the packing nuts.

SPECIAL NOTE: After system pressure has been re-established, retighten all bolting to the Torque values given in section "8" of this manual.

5.7 Maintenance of disassembled valves

Following disassembly procedures in Section 2.0, examine body cavity 1 for deposits of foreign material.

Examine seating surfaces of seat ring 5 and disc 3 for wear.

Examine stem 4, seal area and threads for excessive wear.

If excessive wear is evident, worn parts, or if necessary, entire valve should be reconditioned or replaced.

Xanor de México s.a. de c.v. recommends to replace the pressure seal bonnet gasket 6 when servicing any valve

It should be noted that the Xanik pressure seal globe valve is available in a standard globe and stop check (non return) configuration. Each configuration utilizes a specific disc retention system.

xanor de México s.a. de c.v. Offers complete replacement seal kits and spare parts for reconditioning. When ordering, always state the figure number, serial number of the valve and the body material.

xanor de México s.a. de c.v. Also offers complete re-manufacturing services to rework your valve. If you find this necessary, our Service Centers will remanufacture your valve to factory specifications. Ask for the closest authorized repair facility in your location.

5.8 Lubrication

Parts requiring lubrication are stem 4, entire gasket 6, and under all nuts and bolts 17 before torquing. Bonnet draw bolts should be lubricated with an antisieze lubricant to promote ease of future disassembly.

5.9 Special tools and instructions

Recommended bolting torques is shown in section "8" of this manual.

No special tools are required for general valve maintenance. However, in certain large valve styles, the use of a hydraulic torque device may be necessary to achieve optimum bolt torque.

5.10 Preventative maintenance

Refer to section "1" for general maintenance data



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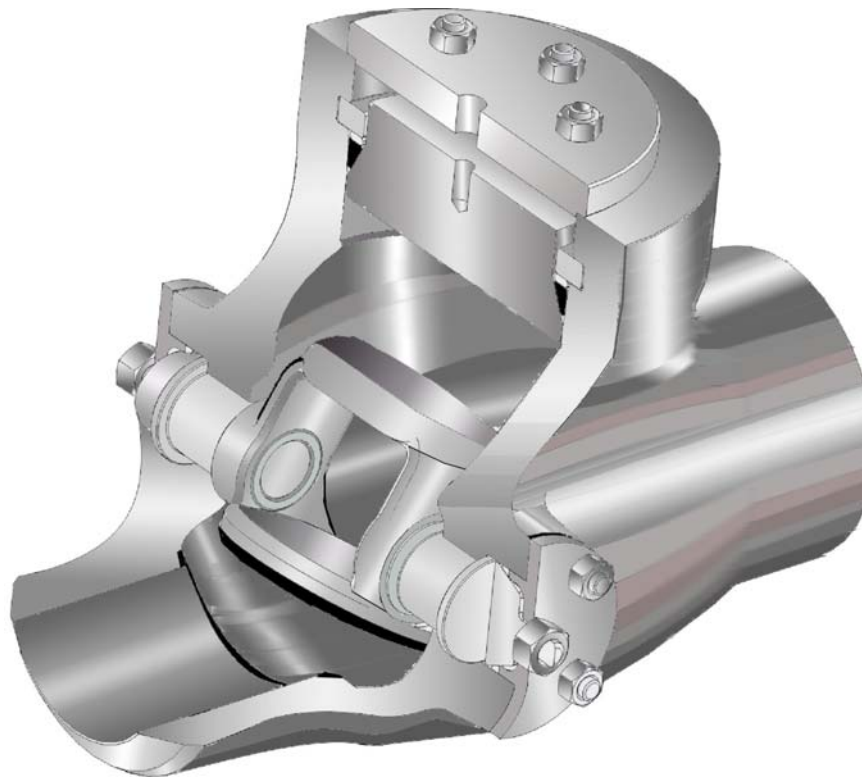
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Section 6

Pressure Seal Tilting Disc Check Valves





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PRESSURE SEAL TILTING DISC CHECK VALVES

6.0 General Information

For general operation and maintenance information regarding this or any other valve please refer to section "1" of this manual.

6.1 Complete Disassembly

CAUTION! Before disassembling any valve, ensure that all pressure has been removed from the line and from any cavities within the valve.

6.2 The following page contains a general disassembly and re-assembly procedure. These procedures cover the bulk of the disassembly and re-assembly process, however special attention should be paid to the following:

Extreme care should be taken to ensure that the sealing surfaces of the gasket area 9 do not become damaged during disassembly or re-assembly. This includes scratches caused by misalignment and/or by debris in the seal area.

6.3 xanor de mexico s.a. de c.v. recommends replacing the pressure seal bonnet gasket 6 when servicing any valve.

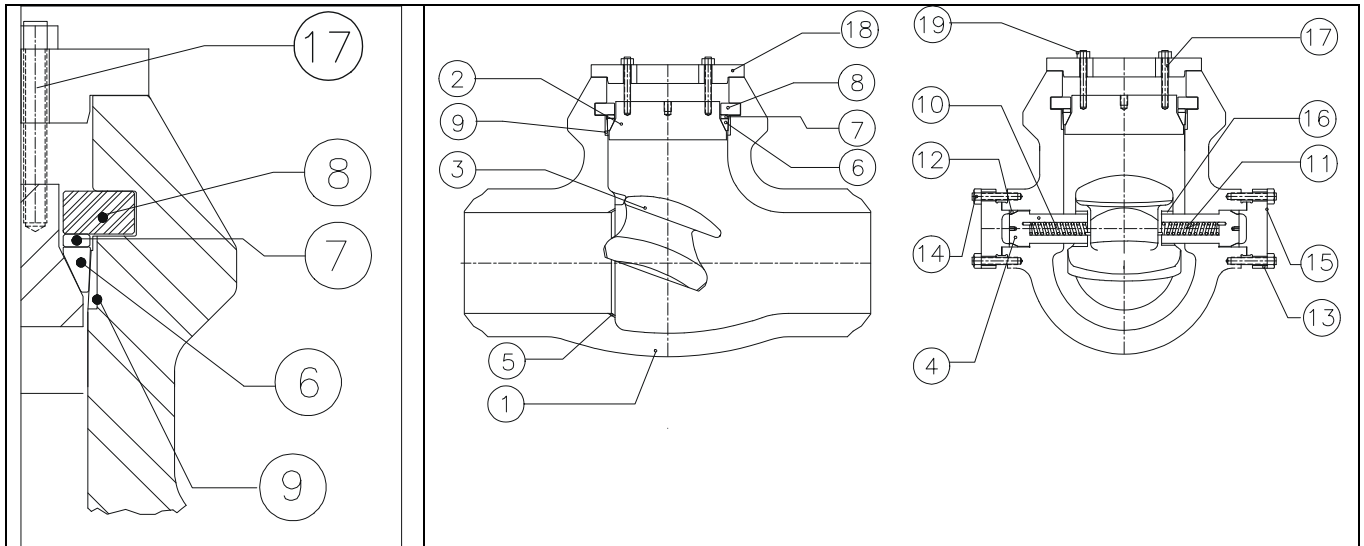
6.4 Caution should be exercised in handling the new bonnet gasket 6 to avoid scratching its surfaces.

6.5 When reassembling the valve it should be noted that in certain cases it might be necessary to tighten the bonnet draw bolts 17 as the system pressure is built up. This process will ensure a positive seal for the pressure seal gasket.

This manual does not include information for repair of the seat and disk of Tilting Disk Check Valves. Consult your xanor de méxico s.a. de c.v. Representative.



**PRESSURE-SEAL TILTING DISC CHECK VALVES
CLASS 600, 900, 1500, & 2500 ALL SIZES**



DISASSEMBLY: For Sizes 6" and larger. (For 4" and smaller the only difference is that there are neither torsion springs nor lateral pressure seal gaskets. The lateral gaskets are spiral wound gaskets, that can be removed and assembled in a traditional way, the rest of instructions apply to all sizes)

- Read the warning notice listed in section 2.0 of these instructions.
- Loose without taking out the draw bolts nuts (19) to remove the cover retainer cover (18).
- Screw eyebolt(s) into the tapped hole(s) in the cover (18)
- Fasten a chain hoist to the eyebolt(s) and pull up just enough to eliminate all slack in the hoist.
- Remove all cover stud nuts (19).
- Remove the cover retainer (18).
- Mark the body (1) cover and gasket retainer segments (8) with adjacent prick punch marks so that their relative position can be restored on re-assembly.
- With clean rags and an air hose, thoroughly clean the top of the valve and all exposed surfaces of the cover and all exposed surfaces of the cover and gasket retainer segments (8). This is important.
- Slack off on the chain hoist to permit the cover (2) to slip down into the valve body. If necessary, tap lightly to loosen. If the cover resists any reasonable attempts to force it into the valve body, high-pressure fluid may be trapped in the body cavity (and downstream) of the check valve. The cover will drop easily when this pressure is relieved. Lower the cover (2) until it rests on top of the disc (3).
- With a copper or brass drive pin, or a clean hardwood block, drive the gasket retainer segments (8) downward to the bottom of the retainer groove (about 1/16 in.) in the body.
- Remove the gasket retainer segments (8).
- Lift the cover (2) back into contact with the pressure-seal gasket, again using the chain hoist.
- Replace the cover retainer 18, using shims to provide additional clearance for further upward movement of the cover (2).



- Use three or four nuts on draw bolts (17) in a uniform spacing on the bonnet studs to pull the cover (2) and gasket (6) out of the body. All nuts should be turned uniformly, a fraction of a turn at a time using a star pattern. It is possible to damage valve parts by cocking the cover (2), so uniform turning of the nuts is very important.
- Lift out the cover assembly. During this process, mark the spacer ring (8) and pressure-seal gasket (6) at points (other than the sealing surfaces) corresponding to the previous marks on the body (1) and cover (2). In laying the parts aside for inspection, it is imperative that they be placed carefully on a bed of rags or other soft material to avoid marking any machined surface, particularly any seating and sealing surfaces.
- Inspection of the seat and hinge pins can be made without further disassembly.

If removal of the disk is necessary, proceed as follows:

NOTE: Pressure may be trapped in the valve even though the system is down and care must be taken in removing the hinge pin retainer. Once the retainer bolts are completely removed, the hinge pins are held only by the friction of the pressure seal gasket against the hinge pin bore. Trapped pressure could cause the retainer and hinge pin to be blown out with considerable force. Therefore care must be taken to break the hinge pin and hinge pin pressure-seal gasket loose before the retainer bolts are completely removed.

- Carefully loosen but do not remove the hinge pin retainer bolt nuts (14).
- Place a suitable spacer between the hinge pin retainer (15) and the body (1). Insert a threaded stud (same thread as the retainer bolts) through the center hole of the hinge pin retainer (15) and thread into the puller hole in the hinge pin (4).
- Support the disk (3) inside the body; thread a nut onto the stud, and tighten the nut until the pressure seal gasket (12) and hinge pin (4) is loose and any pressure that may be trapped in the valve is relieved. If the hinge pin will not move, heat the body boss (not more than 300° F) with an acetylene torch.
- Remove the hinge pin retainer bolts, hinge pin retainer(15) roll pin, hinge pin (4) pressure-seal gasket (12) and torsion spring (10 & 11). During this process, mark the position of the hinge pin relative to the body with prick punch marks. Tag each hinge pin and torsion spring so that each may be replaced on the proper side of the valve. The torsion springs are wound counter to each other to provide a slight restraint to valve opening and assist in valve closing, making it is extremely important to reassemble them correctly.
- Remove the other hinge pin.
- The disk (3) can now be removed from the body. Use caution not to damage any machined or seating surfaces (9). In laying the parts aside for inspection, it is imperative that they be placed carefully on a bed of rags or other soft material to avoid damage.
- The cover end opening should be kept covered whenever possible.

RE-ASSEMBLY

- Insert the disk through the cover end of the body and hold it against the valve seat.
- Checking the tags or parts, place the proper torsion spring in each hinge pin so the tang end enters the small hole in the bottom of the hinge pins.
- Observing the relative position of the parts as marked, insert the hinge pin and torsion spring through the body and into the disk. The other extended tang of the spring must slip into the hole at the base of the hinge pin bearing hole in the disk.
- Install a new pressure-seal gasket on the hinge pin.
- Position the hinge pin retainer so the roll pin enters the hole in the hinge pin and the projecting diameter is against the pressure-seal gasket. The hinge pin retainer must be rotated about 20° in the direction of spring wind to line up with the holes for the cap screws.
- Tighten the retainer cap screws in 30% increments to the torque value shown in the section "8" of this manual



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- Install a new pressure-seal bonnet gasket and spacer ring on the cover and lower the assembly carefully into the body until it rests on top of the disk.
- Insert the gasket retainer segments in the body groove.
- Install the cover retainer.
- Lift the cover, pressure-seal gasket, spacer ring assembly into contact with the gasket retainer segments. Install the cover stud nuts.
- Tighten the cover stud nuts in accordance with the torque values shown in the section "8". All nuts must be tightened uniformly in a star pattern to avoid cocking the cover.

6.6 Maintenance of disassembled valves

Following disassembly procedures in Section 2.0, examine body cavity 1 for deposits of foreign material.

Examine seating surfaces of seat ring 5 and disc 3 for wear

If excessive wear is evident, worn parts, or if necessary, entire valve should be reconditioned or replaced.

Xanor de Mexico s.a. de c.v. recommends to replace the pressure seal bonnet gasket 6 when servicing any valve

xanor de México s.a. de c.v. Offers complete replacement seal kits and spare parts for reconditioning. When ordering, always state the figure number, serial number of the valve and the body material

xanor de México s.a. de c.v. Also offers complete re-manufacturing services to rework your valve. If you find this necessary, our Service Centers will remanufacture your valve to factory specifications. Ask for the closest autorizad repair facility in your location

6.7 Lubrication

Parts requiring lubrication are: entire gasket 6, and under all nuts and bolts 17, 19 before torquing. Bonnet draw bolts should be lubricated with an antisieze lubricant to promote ease of future disassembly.

6.8 Special tools and instructions

Recommended bolting torques is shown in section "8" of this manual.

No special tools are required for general valve maintenance. However, in certain large valve styles, the use of a hydraulic torque device may be necessary to achieve optimum bolt torque.

6.9 Preventative maintenance

Refer to section "1" for general maintenance data



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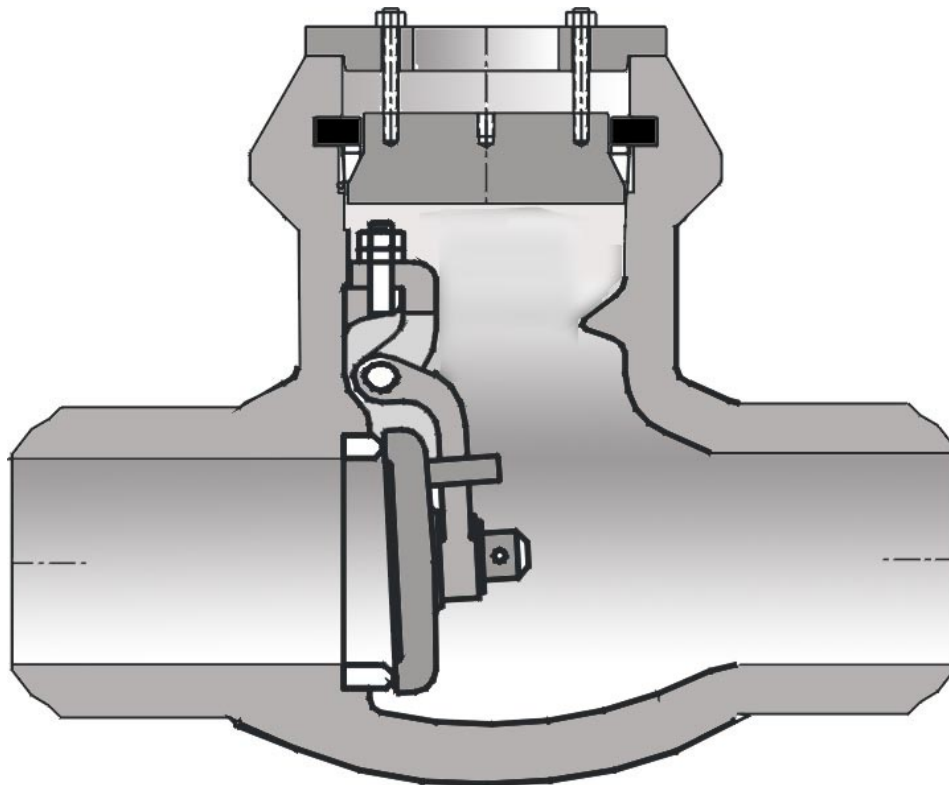
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Section 7

Pressure Seal Swing Check Valves





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PRESSURE SEAL SWING CHECK VALVES

7.0 General Information

For general operation and maintenance information regarding this or any other valve please refer to section "1" of this manual.

Complete Disassembly

CAUTION! Before disassembling any valve, ensure that all pressure has been removed from the line and from any cavities within the valve.

7.1 The following page contains a general disassembly and re-assembly procedure. These procedures cover the bulk of the disassembly and re-assembly process, however special attention should be paid to the following:

Extreme care should be taken to ensure that the sealing surfaces of the gasket area 9 do not become damaged during disassembly or re-assembly. This includes scratches caused by misalignment and/or by debris in the seal area.

7.2 xanor de México s.a. de c.v. recommends replacing the pressure seal bonnet gasket 6 when servicing any valve.

7.3 Caution should be exercised in handling the new bonnet gasket 6 to avoid scratching its surfaces.

7.4 When reassembling the valve it should be noted that in certain cases it might be necessary to tighten the bonnet draw bolts 17 as the system pressure is built up. This process will ensure a positive seal for the pressure seal gasket.

This manual does not include information for repair of the seat and disk of Swing Check Valves. Consult your xanor de México s.a. de c.v. Representative.



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PRESSURE SEAL TILTING DISC CHECK VALVES

7.5 General Information

For general operation and maintenance information regarding this or any other valve please refer to section "1" of this manual.

7.6 Complete Disassembly

CAUTION! Before disassembling any valve, ensure that all pressure has been removed from the line and from any cavities within the valve.

7.6.1 The following page contains a general disassembly and re-assembly procedure. These procedures cover the bulk of the disassembly and re-assembly process, however special attention should be paid to the following:

Extreme care should be taken to ensure that the sealing surfaces of the gasket area 9 do not become damaged during disassembly or re-assembly. This includes scratches caused by misalignment and/or by debris in the seal area.

7.6.1 xanor de México s.a. de c.v. recommends replacing the pressure seal bonnet gasket 6 when servicing any valve.

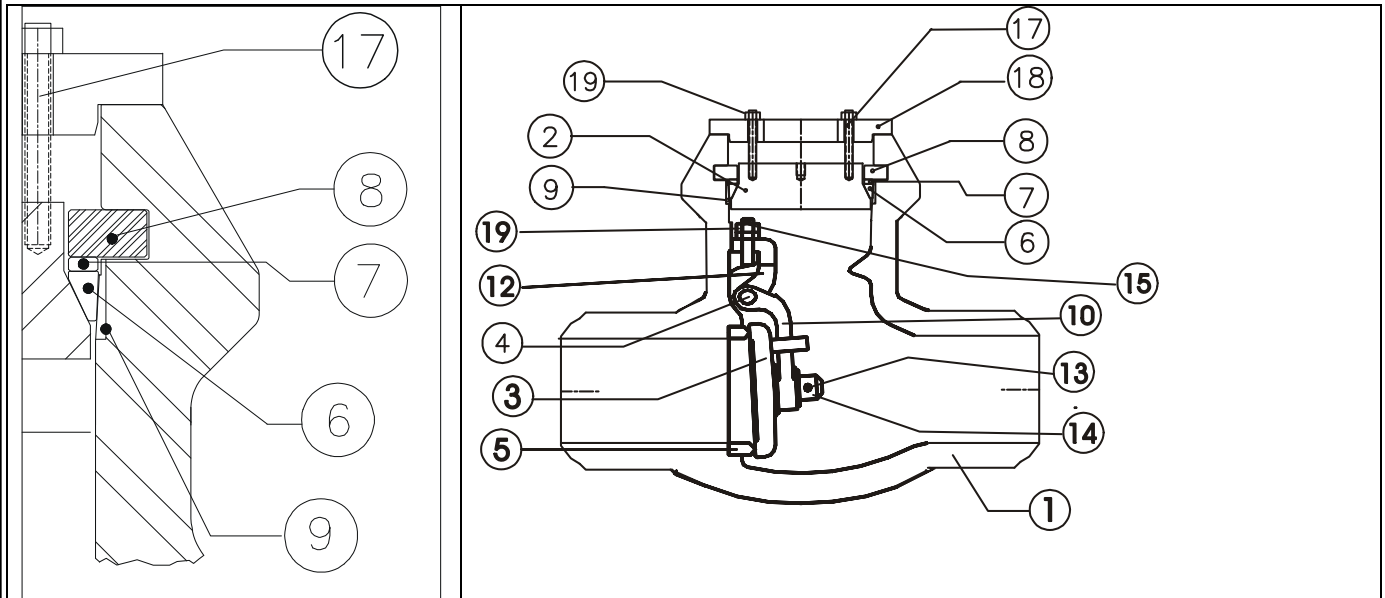
7.6.3 Caution should be exercised in handling the new bonnet gasket 6 to avoid scratching its surfaces.

7.6.4 When reassembling the valve it should be noted that in certain cases it might be necessary to tighten the bonnet draw bolts 17 as the system pressure is built up. This process will ensure a positive seal for the pressure seal gasket.

This manual does not include information for repair of the seat and disk of Tilting Disk Check Valves. Consult your xanor de México s.a. de c.v. Representative.



**PRESSURE-SEAL SWING CHECK VALVES
CLASS 600, 900, 1500, & 2500 ALL SIZES**



DISASSEMBLY

- Read the warning notice listed in section 2.0 of these instructions.
- Loose without taking out the draw bolts nuts (19) to remove the cover retainer cover (18).
- Screw eyebolt(s) into the tapped hole(s) in the cover (2)
- Fasten a chain hoist to the eyebolt(s) and pull up just enough to eliminate all slack in the hoist.
- Remove all cover stud nuts (19).
- Remove the cover retainer (18).
- Mark the body (1) cover and gasket retainer segments (8) with adjacent prick punch marks so that their relative position can be restored on re-assembly.
- With clean rags and an air hose, thoroughly clean the top of the valve and all exposed surfaces of the cover and all exposed surfaces of the cover and gasket retainer segments (8). This is important.
- Slack off on the chain hoist to permit the cover (2) to slip down into the valve body. If necessary, tap lightly to loosen. If the cover resists any reasonable attempts to force it into the valve body, high-pressure fluid may be trapped in the body cavity (and downstream) of the check valve. The cover will drop easily when this pressure is relieved. Lower the cover (2) until it rests on top of the disc (3).
- With a copper or brass drive pin, or a clean hardwood block, drive the gasket retainer segments (8) downward to the bottom of the retainer groove (about 1/16 in.) in the body.
- Remove the gasket retainer segments (8).
- Lift the cover (2) back into contact with the pressure-seal gasket, again using the chain hoist.
- Replace the cover retainer (18) using shims to provide additional clearance for further upward movement of the cover (2).
- Use three or four nuts on draw bolts 17 in a uniform spacing on the bonnet studs to pull the cover (2) and gasket (6) out of the body. All nuts should be turned uniformly, a fraction of a turn at a time using a star pattern. It is possible to damage valve parts by cocking the cover (2), so uniform turning of the nuts is very important.



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- Lift out the cover assembly. During this process, mark the spacer ring 8 and pressure-seal gasket (6) at points (other than the sealing surfaces) corresponding to the previous marks on the body (1) and cover (2). In laying the parts aside for inspection, it is imperative that they be placed carefully on a bed of rags or other soft material to avoid marking any machined surface, particularly any seating and sealing surfaces.
- Inspection of the seat and hinge pins can be made without further disassembly.
- If removal of the disk is necessary, proceed as follows:
- Remove the internal hinge holder assembled to the body by studs and nuts (15) and (19). Removing these bolts, the internal hinge holder can be taken out with the hinge and disc assembly. Care should be taken to ensure that the assembly does not touch the gasket surface area of the body.
- Outside of the valve body, remove the nut pin (13) remove the disc nut (14) disc washer (bellow nut) and disc (3). Care should be taken to ensure that the disc is not damaged upon removal.
- If necessary, remove the hinge pin (20) from the hinge (10).

RE-ASSEMBLY

- Clean all parts thoroughly.
- Reinstall the hinge holder/hinge/disc assembly in reverse order
- Insert the disk through the cover end of the body and hold it against the valve seat.
- Assemble the bolts and nuts (15),(19).
- Install a new pressure-seal gasket (6) and spacer ring (7) on the cover (2) and lower the assembly carefully into the body until it rests on top of the hinge holder bolts.
- Insert the gasket retainer segments (8) in the body groove.
- Install the cover retainer (18).
- Lift the cover, pressure-seal gasket, spacer ring assembly into contact with the gasket retainer segments. Install the cover stud nuts.
- Tighten the cover stud nuts in accordance with the torque values shown in the section "8". All nuts must be tightened uniformly in a star pattern to avoid cocking the cover.

7.7 Maintenance of disassembled valves

Following disassembly procedures in Section 2.0, examine body cavity 1 for deposits of foreign material.

Examine seating surfaces of seat ring 5 and disc 3 for wear

If excessive wear is evident, worn parts, or if necessary, entire valve should be reconditioned or replaced.

Xanor de Mexico s.a. de c.v. recommends to replace the pressure seal bonnet gasket 6 when servicing any valve

xanor de mexico s.a. de c.v. Offers complete replacement seal kits and spare parts for reconditioning. When ordering, always state the figure number, serial number of the valve and the body material

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7.8 Lubrication

Parts requiring lubrication are: entire gasket 6, and under all nuts and bolts 17, 19 before torquing. Bonnet draw bolts should be lubricated with an antisieze lubricant to promote ease of future disassembly.

7.9 Special tools and instructions

Recommended bolting torques is shown in section "8" of this manual.

No special tools are required for general valve maintenance. However, in certain large valve styles, the use of a hydraulic torque device may be necessary to achieve optimum bolt torque.

7.10 Preventative maintenance

Refer to section "1" for general maintenance data.



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Section "8"

Bolting Torque Values



8.0 General Information

For general valve operation & maintenance information please refer to section "1" of this manual.

This section details the specific torque values recommended by xanor de Mexico s.a. de c.v. for bolting used in all Xanik Valves.

8.1 Standard Procedures

Always uses new bolting materials.

Verify that the materials are compatible with the process system as well as any temperature or pressure requirements. Note that bolting materials can have minor identification changes which may have a substantial impact on performance, ie. B7M vs. B7

Whenever allowed by system and process parameters, use appropriate lubrication to ensure even tightening of the bolting materials. For higher temperature applications, the use of an "Antisieze" compound may be necessary to promote future disassembly.

Torque Values all values are listed in foot/pounds (ft/lbs.)

Bolt Dia.	TPI	ASTM A193 GR B7,B8,B16, B8M bolting & K-500 monel with a bolt stress of 60,000 psi
1/4	20	14
5/16	18	21
3/8	16	30
7/16	14	45
1/2	13	65
9/16	12	95
5/8	11	135
3/4	10	230
7/8	9	360
1	8	535
1 1/8	8	815
1 1/4	8	1,125
1 3/8	8	1,525
1 1/2	8	1,900
1 5/8	8	2,540
1 3/4	8	3,240
1 7/8	8	4,075
2	8	4,990
2 1/4	8	6,665
2 1/2	8	8,525
2 5/8	8	9,525
2 3/4	8	10,525
3	8	13,760



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Section "9"

Gear & Motor Operated Valves



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9.0 THEORY OF OPERATION

Most valves, which are located in an accessible environment, are operated by a manual hand wheel mounted directly on top of the valve. When the valve size or differential pressure is so great that the hand wheel size cannot keep the operating hand wheel pull within customer reasonable limits, then a bevel gear should be mounted on the top works. In addition, many customers require remote operation or operating times that are not possible with manual hand wheels, in this case Electric Motor Operators (EMO's) can be used.

Note! Operator limit and torque settings are factory set during valve testing. Do not alter these settings without contacting xanor de mexico s.a. de c.v. Failure to do so may void all valve warranties.

WARNING! Do not use excessive air wrench torque or snipes on hand wheels as the gearing or valve stem could be damaged!

9.1 INSTALLATION

Warning! Ensure that the electric motor operator is wired correctly and phased properly prior to operation. Do not allow the valve to travel in the wrong direction (when phased is reversed). This can result in damage to the valve and void all valve warranties.

9.2 MAINTENANCE

The gear or electric operator itself should never require disassembly and it is recommended that this be done only by the operator manufacturer. If it becomes necessary to disassemble the valve, the operator assembly must be removed first.

Preventive Maintenance

The preferred orientation for gear and motor operated valves is in horizontal pipelines with the stem in a vertical position. When installed in any other position, motor operated valves should be supported by means of a support clamp around the motor mounting plate. Please contact xanor de mexico s.a. de c.v. when specifying an operated valve with an orientation different than that listed above.

With the operator removed from the valve, examine the stem and operator drive nut for thread wear, galling or binding.

If excessive wear is evident, worn parts should be replaced.



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DISASSEMBLY

Note: Prior to the disassembly of any valve equipped with an Electric Motor Operator, ensure that all electrical sources have been disconnected and the appropriate lockout/ tag out procedures have been used.

Remove operator mounting bolts from mounting plate or mounting adapter.

Attach a support sling around operator and prevent rotation.

Turn hand wheel to turn operator off from stem and then lift gear operator off. In the case of an Electric Motor operator it may be necessary to disengage or “declutch” the motor before using the manual hand wheel. The Electrical Motor Operator manufacturer’s manual should detail this procedure.

ASSEMBLY

Install spacer if used and coupling .Lift gear operator carefully over valve stem and while preventing operator from rotating, turn hand wheel open until operator aligns over mounting holes.

Lift gear operator carefully over valve stem preventing operator from rotating, turn hand wheel open until operator aligns over mounting holes.

Loosely install mounting bolts on mounting plate or mounting adapter and then check that stem operation does not bind.

Torque mounting bolts while valve is in open position.

Set torque and limit switches in accordance with the instruction manual for the applicable operator.

For all gate and globe style valves (excluding the Parallel Disc Gate Valve) upon valve closing, the Torque switch should be set to trip first.

For Parallel Disc gate valves upon valve closing, only the limit switch should be utilized. The torque switch should not be utilized. Care should be taken to ensure that the torque switch is not engaged as this may apply excessive operator thrust/torque to the Parallel Disc gate valve.

Upon valve opening, the limit switch should be the only switch set to trip. The torque switch should not be utilized. The valve can be back-seated only by turning the operator hand wheel further passed this limit position. Do not allow the motor operator to drive the stem into the backseat position. This operation should be done manually.