

Val-Matic® QuadroSphere® Trunnion Mounted Ball Valve

Operation, Maintenance and Installation Manual

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VAL-MATIC'S 2"-24" SERIES 4700 QUADROSPHERE BALL VALVE OPERATION, MAINTENANCE AND INSTALLATION

INTRODUCTION

The Series 4700 QuadroSphere® Ball Valve has been designed to provide long trouble-free operation. This manual will provide you with the information to properly install and maintain the valve to ensure a long service life. The valve is a trunnion mounted quarter-turn valve capable of handling a wide variety of liquid media with high solids content. The Size, Flange, Working Pressure, Working Temperature, and Model No. are stamped on the nameplate for reference.

CAUTION

Do not use valve for line testing at pressures higher than nameplate rating or leakage and damage to valve may occur.

RECEIVING AND STORAGE

Inspect valves upon receipt for damage in shipment. Unload all valves carefully to the ground without dropping. Do not lift valves with slings or chains around the actuator or through the seat area. Extra care must be taken when handling electric motor and cylinder actuated valves. Valves should remain crated, clean and dry until installed to prevent weather related damage. Remove end protector and thoroughly inspect interior of the valve and end flange sealing surfaces for damage or foreign objects.

For long-term storage greater than six months, indoor storage is recommended. When in storage, the valve should be kept in the fully open position unless it has been fitted with a fail-to-close actuator. Operate the valve from fully closed to fully open and back to fully closed at least once every 12 months. Following long-term storage, valves should be inspected prior to use.

INSTALLATION

Prior to installation, personnel should familiarize themselves with hazards of pipeline media and potential emissions. Read all applicable directions and instructions prior to any installation, maintenance or troubleshooting. Check valve identification against operation requirements before

installation. Ensure that the actuator has been installed properly and is functional. Observe ball bore position to ensure valve opens fully. Confirm the position of the QuadroSphere ball's flat-face to ensure its spherical lip surfaces are in full contact with seat when fully closed. Place the valve in its fully open position to prevent damage to the QuadroSphere ball during installation.

Install valve in system using proper size and type of mating flanges and appropriate gaskets for RF, or seal rings for RTJ. Flow can be in either direction. QuadroSphere ball valves may be installed in any orientation. Note: Whenever possible, if the valve is being installed in a horizontal line, it is good practice to have the stem horizontal so the bottom of the ball rotates downstream to allow for the full effect of the self-cleaning QuadroSphere seating technology. If necessary based on pipeline start-up operations, actuate the valve to its fully open position.

DESCRIPTION OF OPERATION

QuadroSphere ball valves are designed for on-off service, but may be used to throttle flow in certain conditions and applications. Contact the factory before using the valve for throttling or flow control. The QuadroSphere valve is a quarter-turn ball valve intended to operate through a 90-degree rotation with the use of a handle or handwheel & worm gear actuator. The QuadroSphere may also be actuated using an electric or hydraulic / pneumatic cylinder actuator.

Normal actuation is accomplished by rotating the handwheel or lever clockwise to close and counterclockwise to open. The concentricity of the seats and trunnion mounted QuadroSphere ball will allow for the ball to be rotated 180 degrees. Use caution to insure that the soft seat inserts are fully retained in seat rings before turning ball through or beyond its original 90 degree setting. Exact closed and open positions may be determined with respect to the centerline of the bore through the ball by observing the stem keyway. When the key slot is perpendicular to the flow path through the valve (not in-line with the pipe) it is closed.

Block and Bleed

The standard configuration of the QuadroSphere trunnion ball valve is a double block and bleed (DBB) design. The seats are floating and are activated by internal springs and line pressure to seal against the QuadroSphere ball. The seats work independently and if pressure in the body cavity exceeds the upstream or downstream pressure, the cavity pressure will relieve itself to the side of lower pressure.

This single piston effect allows for verification of the effectiveness of the seats while the valve is installed. Use caution when purging, venting or draining the valve's center cavity. With the valve closed and the upstream and/or downstream end pressurized, carefully open the vent valve or drain valve on the center cavity. Continue venting until the center cavity reaches atmospheric pressure. Once the center cavity reaches atmospheric pressure, the seat integrity may be determined by observing for additional leakage through the open vent. If no additional leakage appears through the vent, the seats are sealing affectively.

QuadroSphere ball valves provided with a Double Isolation and Bleed (DIB) configuration will not automatically relieve center cavity pressure. These valves are provided with an automatic cavity pressure relieve device. Caution should be taken to ensure the pressure relief device is functioning properly and there is no excess pressure in the center cavity.

MAINTENANCE

Once the QuadroSphere valve has been put into service, the valve shall be checked and maintained periodically. Routine inspections should look for worn sealing surfaces, aging of packing rings and "O" rings, and corrosion of the body. If these conditions are observed, the valve shall be repaired or replaced. It is suggested that inspection and maintenance of the valve be performed every three months for installations where the fluid is water or oil. Inspections should be performed at least every month where the fluid is a strong corrosive.

Prior to performing any maintenance on the QuadroSphere ball valve, ensure all pressure is relieved from the valve, including the center cavity.

When performing repair or maintenance operations, do not attempt to remove the gear/lever, remove or attempt to replace bolts and nuts when the valve is under pressure. Replacement O-rings, gaskets, bolts and nuts should be of the same sizes and materials as the original ones. Valve O-rings and gaskets should be ordered as spare parts for maintenance and replacement. After the replacement of any O-ring, gasket, bolt and nut, the valve shall be closure tested prior to reuse.

No weld repair of any valve component should be performed on an installed valve. Repairing of any pressure containing part by the user is not recommended. If pressure containing parts become worn due to extended service or harsh service, the valve should be replaced.

Lubrication

QuadroSphere ball valves do not require stem or seat lubrication for standard operation. An emergency sealant injection system is provided on all 6 NPS and larger QuadroSphere Ball Valves with single piston (DBB) design. Sealant injection should only be utilized in emergency situations where seat insert(s) have been damaged by foreign matter or high temperatures.

Seat Injection: For best results, sealant injection should only be performed with the valve in the full open or full closed position.

Stem Injection: Stem seals are permanent and sealant should only be injected for temporary or emergency sealing.

Lubrication of Seat Rings: In certain applications it may be advantageous to periodically lubricate behind the seat rings to prevent the ingress of foreign particles and/or build-up of scale, etc. General purpose grease should be used, such as Mystic JT-6, or equal. Heavier greases should not be used.

TROUBLESHOOTING

Table 1 lists several maintenance techniques for common operating issues with ball valves. Table 1 is not meant to be an exhaustive list of all problems that can occur with a ball valve. Rather, it presents a starting point for the user to consider when performing maintenance.

Table 1. Common Troubleshooting Causes and Repairs

Trouble	Probable Causes	Remedies
Hard to operate/high torque	1. Actuator Unit	1. Remove actuator cover and check screw and linkage for damage
	2. Infrequent operation causes lack of lubrication	2. Lubricate seats with sealant and actuator with suitable industrial grease
	3. Ice in operator or valve	3. Heating and/or inject antifreeze solution. When heating is a must, special attention shall be paid to the media inside the valve and the outside environment. Flame and high temperature may cause fire and/or explosion. Relative safety procedure and hot working permission must be followed.
	4. Stem galling	4. Repair or replace the stem.
		5. Check inner surface of the gland for surface damage, if so, repair or replace the gland.
		6. Replace packing rings and stem sealing O-rings
Leakage between ball and seat	1. Dirt/debris between sealing surfaces	1. Clean out debris
	2. Sealing surface damaged (seat insert and/or ball)	2. Check the seat insert surface for damage, replace the seat insert.
		3. Check the ball surface for damage, if so, repair the ball surface or replace the ball.
Leakage from the stem packing	1. Stem sealing O-rings failure	1. Replace with new O-rings.
	2. Gland compression loose.	2. Equally tighten Gland screws.
	3. Stem packing ring failure	3. Replace packing rings.
	4. Stem surface damaged	4. Check the stem for damages, repair or replace the damaged stem.
	5. Gland inner surface damage	5. Check the stuffing box for damages, repair or replace the body.
Leakage between body and closure flanges	1. O-ring failure	1. Replace the O-ring
	2. Gasket failure	2. Replace the gasket
	3. Body connection bolting loose.	3. Properly tighten body connection nuts to the required torque.
Leakage between body and seat	1. O-ring failure	1. Replace the O-ring.
		2. Replace the seat gasket.
Valve will not fully close	Improper setting of actuator, limit switches or stops in worm gear actuator.	Correct the setting of limit switches or stoppers for proper closing.
Restriction in bore of valve	Ball bore is not properly aligned with the bore of the valve.	Correct the setting of limit switches or stoppers for proper bore alignment.

VALVE CONSTRUCTION

As shown in Figures 1, 2 and 3 and Tables 2-4, the QuadroSphere ball valve is a trunnion mounted design, consisting of a three-piece forged body, plated ball, and stems that rotate in bearings. The valve is designed to handle flow in either direction. The valve is available in NPS 2 through 24 in ASME pressure classes 150# through 2500#. It is suitable for water, steam, oil or other fluids depending upon materials of construction.

Valves are designed and tested to API 6D and ASME B16.34 with either carbon steel or stainless steel construction. Typical materials of construction are listed in Figures 1, 2 and 3. Optional bolting is available to meet either NACE MR0103 or NACE MR0175.

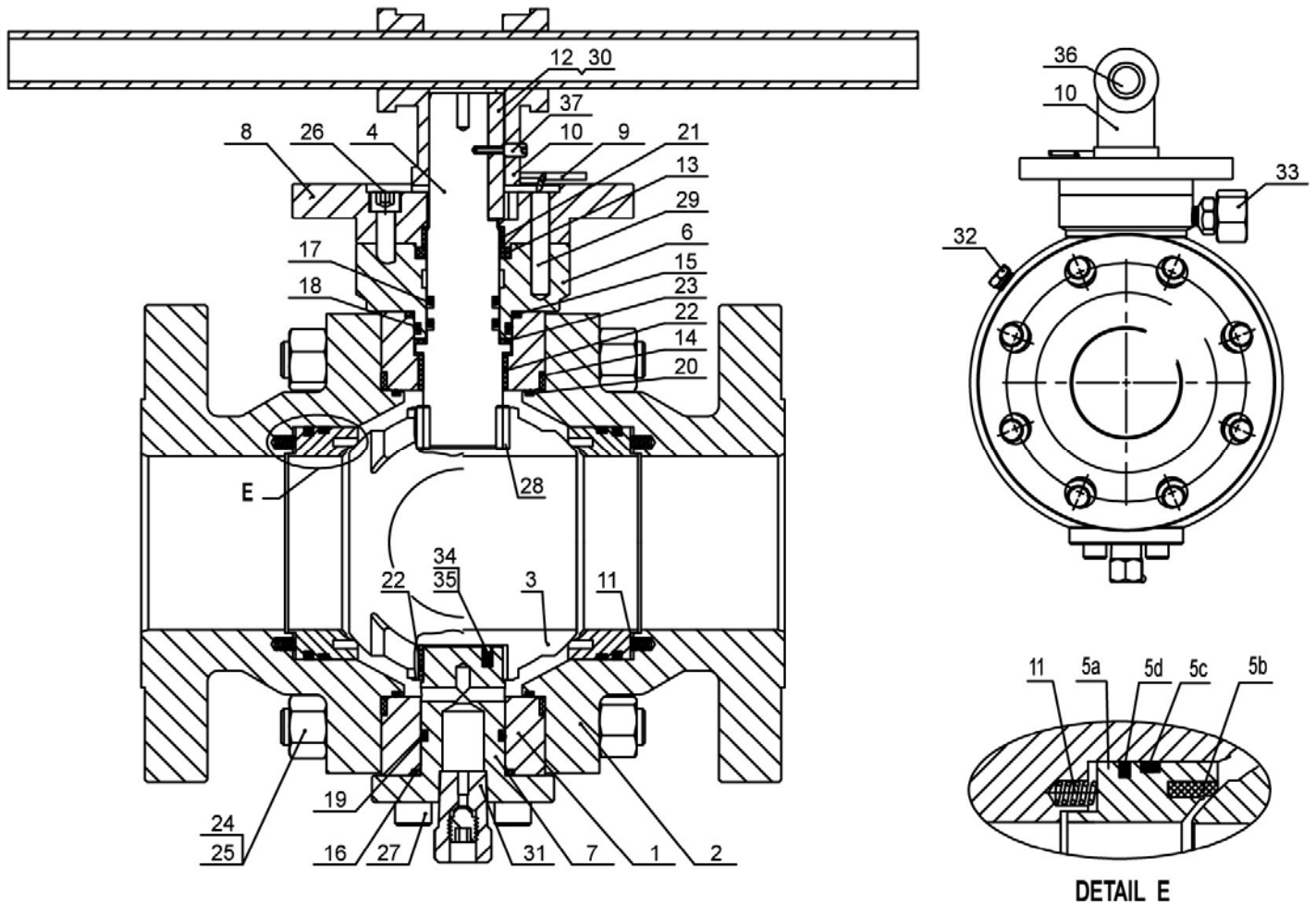
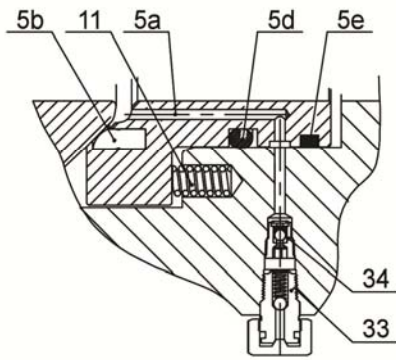
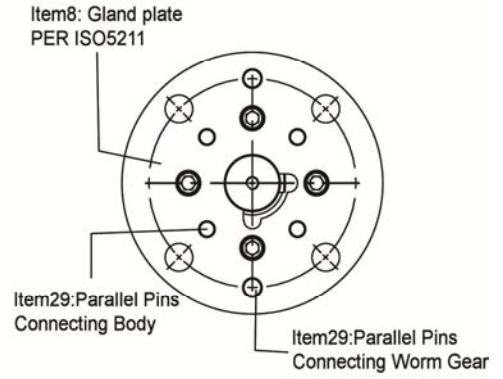
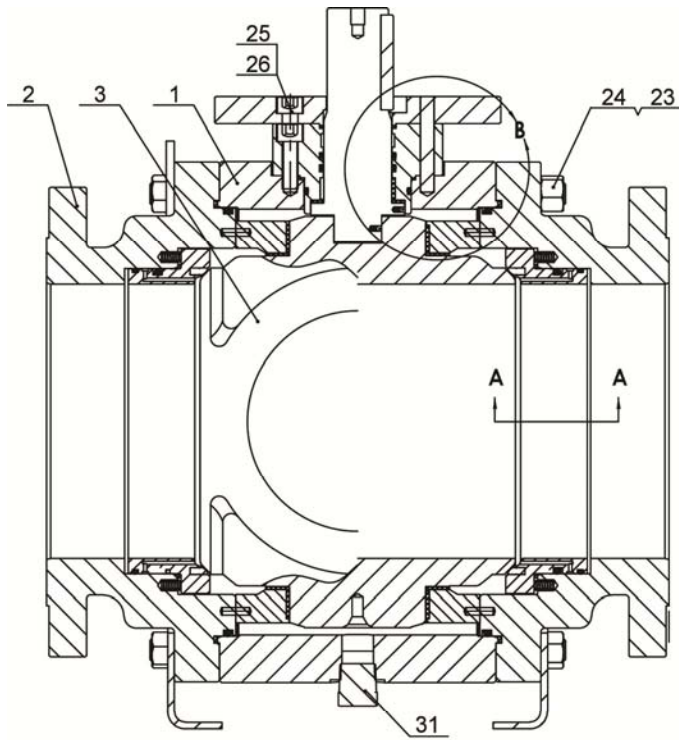


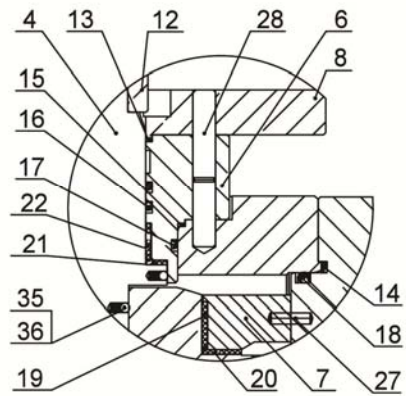
Figure 1. NPS 2"-4" Trunnion Mounted Ball Valve

Table 2. Standard Materials of Construction – NPS 2”-4” Trunnion Mounted Ball Valve

Item	Part Name	Standard (NACE)	Low Temp (NACE)	Stainless Steel (NACE)
1	Body	ASTM A105	A350 LF2	A182 F316
2	End Adapters	ASTM A105	A350 LF2	A182 F316
3	QS Ball	A182 F316+HC		
4	Stem	A182 F316		
5a	Seat Ring	A182 F316		
5b	Seat Insert	R-PTFE		
5c	O-Ring	VITON A		
5d	Seat Fire Safe Seal	Graphite		
6	Gland	ASTM A105	A350 LF2	A182 F316
7	Post Trunnion	ASTM A105	A350 LF2	A182 F316
8	Gland Plate	ASTM A105	A350 LF2	A182 F316
9	Locking Plate	Carbon Steel + Zn		Stainless Steel
10	Handle Guide	ASTM A216 GR.WCB + Painting		
11	Spring	Inconel X750		
12	Key	AISI 1045		Stainless Steel
13	Stem Fire Safe Seal	Graphite		
14	Body Gasket	SPW.316+Graphite		
15	Gland Gasket	SPW.316+Graphite		
16	Trunnion Gasket	SPW.316+Graphite		
17	Stem O-Ring	VITON A		
18	Gland O-Ring	VITON A		
19	Trunnion O-Ring	VITON A		
20	Body O-Ring	VITON A		
21	DU Bearing	1045+PTFE		316SS+PTFE
22	DU Bearing	1045+PTFE		316SS+PTFE
23	Thrust Washer	RPTFE		
24	Body Studs	ASTM A193-B7M	ASTM A320-L7M	ASTM A193-B8M
25	Body Nuts	ASTM A194-2HM	ASTM A194-7M	ASTM A194-8M
26	Gland Bolt	ASTM A193-B7M	ASTM A320-L7M	ASTM A193-B8M
27	Trunnion Bolt	ASTM A193-B7M	ASTM A320-L7M	ASTM A193-B8M
28	Parallel Pins	ASTM A276 Gr.316		
29	Parallel Pins	AISI 1045		ASTM A276 Gr.316
30	Spring Pin	AISI 1566		
31	Vent Valve	AISI 316 S/S		
32	Drain Plug	AISI 316 S/S		
33	Sealant Injection Fitting	ASTM A105N+Zn	A350 LF2 + Zn	ASTM A276 Gr.316
34	Anti-Static Ball	AISI 316 S/S	A350 LF2 + Zn	ASTM A276 Gr.316
35	Anti-Static Spring	AISI 316 S/S		
36	Pipe	Carbon Steel + Zn		
37	Screw	Carbon Steel + Zn		



DETAIL A-A



DETAIL B

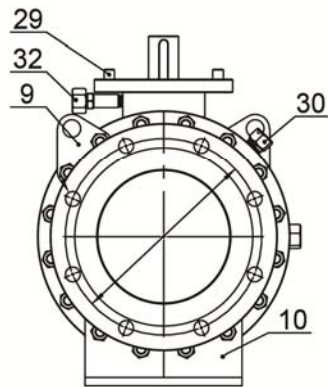
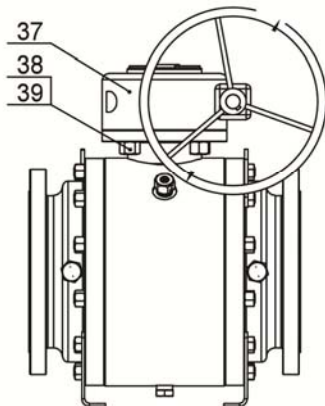
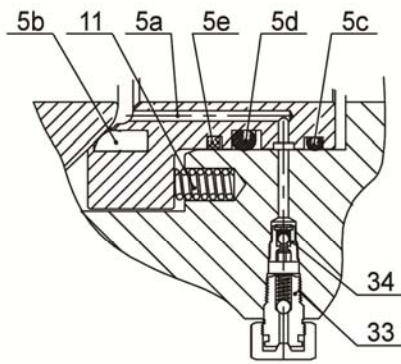
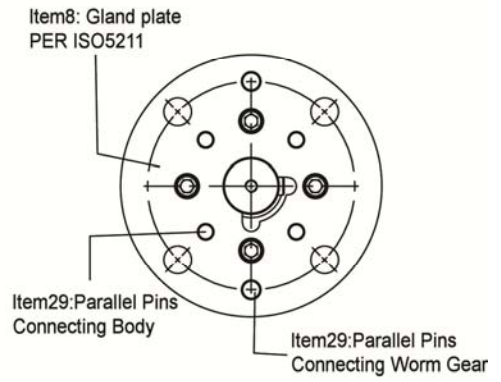
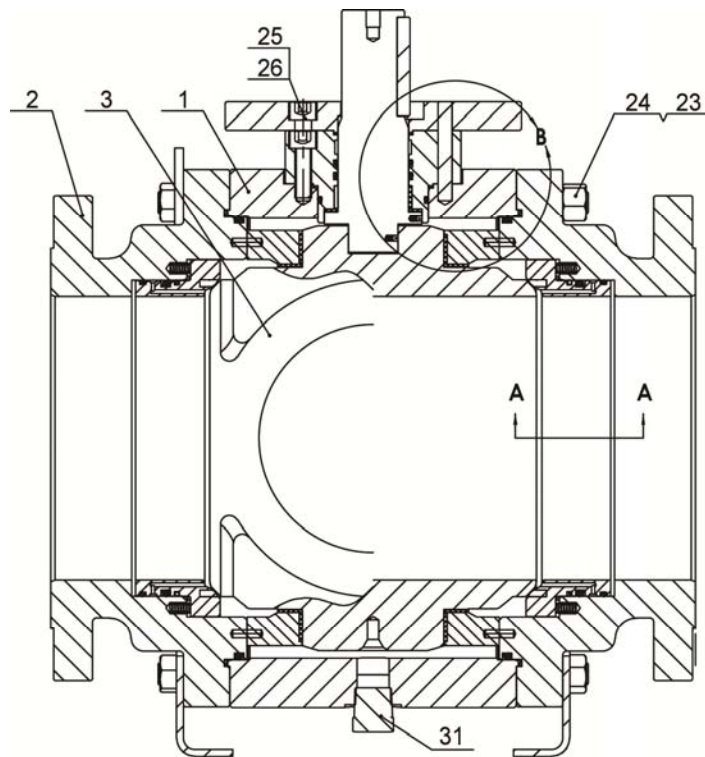


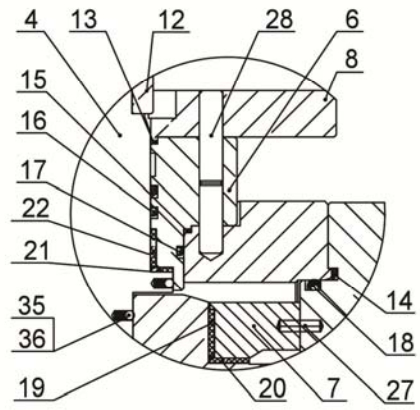
Figure 2. NPS 6"-12" Trunnion Mounted Ball Valve

Table 3. Standard Materials of Construction – NPS 6”-12” Trunnion Mounted Ball Valve

Item	Part Name	Standard (NACE)	Low Temp (NACE)	Stainless Steel (NACE)
1	Body	ASTM A105	A350 LF2	A182 F316
2	End Adapters	ASTM A105	A350 LF2	A182 F316
3	QS Ball	A182 F316+HC		
4	Stem	A182 F316		
5a	Seat Ring	A182 F316		
5b	Seat Insert	R-PTFE		
5d	O-Ring	VITON A		
5e	Seat Fire Safe Seal	Graphite		
6	Gland	ASTM A105	A350 LF2	A182 F316
7	Trunnion Plate	ASTM A105	A350 LF2	A182 F316
8	Gland Plate	ASTM A105	A350 LF2	A182 F316
9	Lifting Lug	Carbon Steel		Stainless Steel
10	Leg Plate	Carbon Steel		Stainless Steel
11	Spring	Inconel X750		
12	Key	AISI 1045		Stainless Steel
13	Stem Fire Safe Seal	Graphite		
14	Body Fire Safe Seal	SPW.316+Graphite		
15	Gland Fire Safe Seal	SPW.316+Graphite		
16	Stem O-Ring	VITON A		
17	Gland O-Ring	VITON A		
18	Body O-Ring	VITON A		
19	DU Bearing	1045+PTFE		316SS+PTFE
20	DU Thrust Bearing	1045+PTFE		316SS+PTFE
21	Thrust Washer	RPTFE		
22	DU Bearing	1045+PTFE		
23	Body Studs	ASTM A193-B7M	ASTM A320-L7M	ASTM A193-B8M
24	Body Nuts	ASTM A194-2HM	ASTM A194-7M	ASTM A194-8M
25	Gland Bolt	ASTM A193-B7M	ASTM A320-L7M	ASTM A193-B8M
26	Gland Plate Bolt	ASTM A193-B7M	ASTM A320-L7M	ASTM A193-B8M
27	Parallel Pins	ASTM A276 Gr.316		
28	Parallel Pins	AISI 1045		ASTM A276 Gr.316
29	Parallel Pins	AISI 1045		ASTM A276 Gr.316
30	Vent Valve	AISI 316 S/S		
31	Plug	AISI 316 S/S		
32	Sealant Injection Fitting	ASTM A105N+Zn	A350 LF2 + Zn	ASTM A276 Gr.316
33	Sealant Injection Fitting	ASTM A105N+Zn	A350 LF2 + Zn	ASTM A276 Gr.316
34	Check Valve	AISI 316 S/S		
35	Anti-Static Ball	AISI 316 S/S		
36	Anti-Static Spring	AISI 316 S/S		
37	Gear Device	ASTM A216 GR.WCB		
38	Gear Studs	ASTM A193-B7		ASTM A193-B8
39	Gear Nuts	ASTM A194-2H		ASTM A194-8



DETAIL A-A



DETAIL B

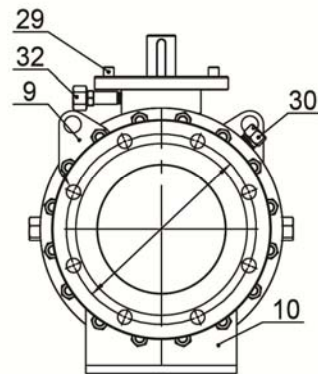
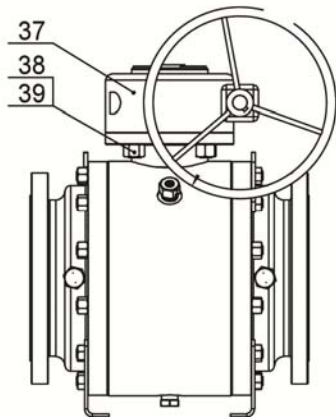


Figure 3. NPS 14"-24" Trunnion Mounted Ball Valve

Table 4. Standard Materials of Construction – NPS 14”-24” Trunnion Mounted Ball Valve

Item	Part Name	Standard (NACE)	Low Temp (NACE)	Stainless Steel (NACE)
1	Body	ASTM A105	A350 LF2	A182 F316
2	End Adapters	ASTM A105	A350 LF2	A182 F316
3	QS Ball	A182 F316+HC		
4	Stem	A182 F316		
5a	Seat Ring	A182 F316		
5b	Seat Insert	R-PTFE		
5c	O-Ring	VITON A		
5d	Seat Fire Safe Seal	Graphite		
6	Gland	ASTM A105	A350 LF2	A182 F316
7	Trunnion Plate	ASTM A105	A350 LF2	A182 F316
8	Gland Plate	ASTM A105	A350 LF2	A182 F316
9	Lifting Lug	Carbon Steel		Stainless Steel
10	Leg Plate	Carbon Steel		Stainless Steel
11	Spring	Inconel X750		
12	Key	AISI 1045		Stainless Steel
13	Stem Fire Safe Seal	Graphite		
14	Body Fire Safe Seal	SPW.316+Graphite		
15	Gland Fire Safe Seal	SPW.316+Graphite		
16	Stem O-Ring	VITON A		
17	Gland O-Ring	VITON A		
18	Body O-Ring	VITON A		
19	DU Bearing	1045+PTFE		316SS+PTFE
20	DU Thrust Bearing	1045+PTFE		316SS+PTFE
21	Thrust Washer	RPTFE		
22	DU Bearing	1045+PTFE		
23	Body Studs	ASTM A193-B7M	ASTM A320-L7M	ASTM A193-B8M
24	Body Nuts	ASTM A194-2HM	ASTM A194-7M	ASTM A194-8M
25	Gland Bolt	ASTM A193-B7M	ASTM A320-L7M	ASTM A193-B8M
26	Gland Plate Bolt	ASTM A193-B7M	ASTM A320-L7M	ASTM A193-B8M
27	Parallel Pins	ASTM A276 Gr.316		
28	Parallel Pins	AISI 1045		ASTM A276 Gr.316
29	Parallel Pins	AISI 1045		ASTM A276 Gr.316
30	Vent Valve	AISI 316 S/S		
31	Plug	AISI 316 S/S		
32	Sealant Injection Fitting	ASTM A105N+Zn	A350 LF2 + Zn	ASTM A276 Gr.316
33	Sealant Injection Fitting	ASTM A105N+Zn	A350 LF2 + Zn	ASTM A276 Gr.316
34	Check Valve	AISI 316 S/S		
35	Anti-Static Ball	AISI 316 S/S		
36	Anti-Static Spring	AISI 316 S/S		
37	Gear Device	ASTM A216 GR.WCB		
38	Gear Studs	ASTM A193-B7		ASTM A193-B8
39	Gear Nuts	ASTM A194-2H		ASTM A194-8

DISASSEMBLY

When disassembly of a valve is required, please refer to the materials of construction drawing (Figures 1-3) and disassemble the valve according to the following procedure.

1. For gear operator or power actuator installed valve:
 - 1) Remove the Bolts fastening the Gear Box body or the Actuator.
 - 2) Remove the Gear Box or the Actuator.
 - 3) For subsequent operation, follow the disassembling procedure for the Gland Plate.
2. For lever operated valves:
 - 1) Remove the screw fastening the Lever.
 - 2) Remove the Lever.
 - 3) Remove the Retaining Ring and the Locking Plate.
 - 4) For subsequent operation, follow the disassembling procedure for the Gland Plate.
3. For the Adaptor Flange:
 - 1) Remove the Screws fastening the Gland Plate.
 - 2) With a bronze hammer striking lightly on the Gland Plate, then lifting off the Gland Plate.
 - 3) Remove the pin on the Gland flange.
 - 4) Remove the Gland.
4. For End Adaptors
 - 1) Remove the Nuts fastening one of the End Adaptor.
 - 2) Remove the End Adaptor.
 - 3) Clean and check the gasket seating surfaces for damage.
 - 4) Remove the Seat from the End Adaptor.
 - 5) Check the O-ring on the End Adaptor and Seat Insert for damage.
 - 6) Remove Fire-Safe Gasket and on the Seat Ring and check it for damage.
 - 7) Remove the Seat Springs from the End Adaptor.
5. For the other End Adaptor
 - 1) The procedure removing the other End Adaptor is same as described in Section 4 above.
6. For the Gland
 - 1) Remove the screws fastening the Gland.
 - 2) Lifting off the stem and the Gland.
 - 3) Remove the Pins to the Body.
 - 4) Remove the stem from the Gland.
 - 5) Check the O-rings, Packing, Bearings and Gaskets and the related sealing seating surfaces in the Gland for damage.
 - 6) Remove the Stem Injection (if so installed).
 - 7) For subsequent operation, follow the disassembling procedure for End Adaptors.
7. For the Post Trunnion
 - 1) Remove the Screws fastening the Post Trunnion (2'-4").
 - 2) Lifting off the Post Trunnion.
 - 3) Remove the Bleed Valve from the Post Trunnion (If so installed).
 - 4) Check the O-rings, Bearings and Gasket on the Trunnion and the sealing seating surfaces for damage.
 - 5) For subsequent operation, follow the disassembling procedure for end adaptors.
8. For the Ball (without Trunnion Plate)
 - 1) Remove the Ball from the Body.
 - 2) For subsequent operation, follow the disassembling procedure for the other End Adaptor.
9. For Trunnion Plate (as shown in Fig. 2 and 3)
 - 1) Remove the pin from the End Adaptor.
 - 2) Remove the ball and the Trunnion Plate from the Body.
 - 3) Remove the Trunnion Plate from the ball.
 - 4) Remove the Bearing from the Trunnion Plate and check for any damage.
 - 5) For subsequent operation, follow the disassembling procedure for the other End Adaptor.

REASSEMBLY

Prior to reassembly, all parts should be washed, cleaned and checked for damage. Before reassembling, refer to the structural drawing, and check that all parts are completely arranged. Replace all the bearings, O-rings, Gaskets and Seat Inserts with new ones. All seating surfaces must meet the original specifications; otherwise, replacement is necessary. Body and End Adaptors must meet the minimum thickness requirement of ASME B16.34. Otherwise, a new replacement valve is required.

1. For the Body:

- 1) Install Studs on the Body.
- 2) Put the Body on the End Adaptor, install Lift Plate and Support Leg (If so configured), and tighten nuts to the recommended torque listed below.

Thread Size	Torque (N-m)	Torque (ft-lb)
M12	62	46
M14	95	70
M16	125	92
M20	230	170
M22	392	290
M24	590	440
M27	805	600
M30-3	1,110	820
M33-3	1,200	890
M36-3	1,585	1,170
M48-3	3,920	2,900

2. For the Ball (Without Trunnion Plate):

- 1) Put the Bearing into the bottom hole of the Ball.
- 2) Put the Ball into the Body.

3. For Trunnion Plate (If so configured):

- 1) Put the Bearing into the Trunnion Plate.
- 2) Put another Bearing into the other Trunnion Plate.
- 3) Install the Ball between the two Trunnion Plates.
- 4) Put the Ball and the Trunnion Plates into the Body and make sure the Pins insert into the Trunnion Plates.

4. For the Post Trunnion:

- 1) Install O-rings and Gasket on the Post Trunnion.
- 2) Install the Bleed Valve (or Drain Plug) (2"-4).
- 3) Put the Post Trunnion through the bottom hole of the body and insert into the bottom pocket of the ball, make sure that the ball rotates freely.

5. For the Gland

- 1) Put the O-rings and Gasket into the Gland.
- 2) Install Stem Injection (if so configured).
- 3) Install the Bearing and Thrust Bearing on the Stem.
- 4) Put the Stem through the hole of the Gland.
- 5) Put the Stem through the top hole of the Body and insert the bottom of the Stem into the top groove of the Ball.
- 6) Put the Pin into the top hole of the Body.
- 7) Install the Gland and tightening the screws.

6. For the End Adaptors:

- 1) Apply silicone oil to the outside surface of the Seat (including the Seat Insert).
- 2) Install the Fire-Safe Gasket on the Seat.
- 3) Install the O-ring on the seat.
- 4) Apply silicone oil to the Seat Springs and install the Seat Spring on the End Adaptor .
- 5) Put the seat Plate into the End Adaptor (If so configured).
- 6) Put the assembly of the Seat into the End Adaptor and make sure that the Seat move freely.
- 7) Install O-ring and gasket on the outside surface of the End Adaptor.
- 8) Put the pin inside the End Adaptor (If so configured).

7. For the Gland Plate

- 1) Install Packing on the packing groove (If so configured).
- 2) Install Gland on the packing (If so configured).
- 3) Install Gasket on the Gland (If so configured).
- 4) Install the Gland and tighten the screws.

8. For the Gear Box and/or Power Actuator
 - 1) Install the key on the stem.
 - 2) Install the Gear Box and/or Power Actuator on the Gland Adaptor and tighten the bolts.

9. For Lever (If so configured)
 - 1) Install the stop plate.
 - 2) Install retaining ring.
 - 3) Install the lever.
 - 4) Install the washer and tighten the screw.

Finally, re-install vent valve, drain plug and seat injection ports if provided. Upon completion of the reassembly, the valve should be shell and seat tested to API 598 Standard.

PARTS AND SERVICE

Parts and service are available from your local representative or the factory. Make note of the Valve Size and Model Number located on the valve nameplate and contact:

Val-Matic Valve and Manufacturing Corp.
 905 Riverside Drive
 Elmhurst, IL 60126
 Phone: (630) 941-7600
 Fax: (630) 941-8042
www.valmatic.com

A sales representative will quote prices for parts or arrange for service as needed.

LIMITED WARRANTY

All products are warranted to be free of defects in material and workmanship for a period of one year from the date of shipment, subject to the limitations below.

If the purchaser believes a product is defective, the purchaser shall: (a) Notify the manufacturer, state the alleged defect and request permission to return the product; (b) if permission is given, return the product with transportation prepaid. If the product is accepted for return and found to be defective, the manufacturer will, at his discretion, either repair or replace the product, f.o.b. factory, within 60 days of receipt, or refund the purchase price. Other than to repair, replace or refund as described above, purchaser agrees that manufacturer shall not be liable for any loss, costs, expenses or damages of any kind arising out of the product, its use, installation or replacement, labeling, instructions, information or technical data of any kind, description of product use, sample or model, warnings or lack of any of the foregoing. NO OTHER WARRANTIES, WRITTEN OR ORAL, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY, ARE MADE OR AUTHORIZED. NO AFFIRMATION OF FACT, PROMISE, DESCRIPTION OF PRODUCT OF USE OR SAMPLE OR MODEL SHALL CREATE ANY WARRANTY FROM MANUFACTURER, UNLESS SIGNED BY THE PRESIDENT OF THE MANUFACTURER. These products are not manufactured, sold or intended for personal, family or household purposes.



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