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ROTO-CLEAN[®] VALVE

USER'S GUIDE



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INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS

The Roto-Clean valve is a quarter-turn valves designed primarily for solids, slurries & pastes. Because it is easy to disassemble and reassemble, it is ideal for applications that require frequent cleaning and/or sanitization of processing equipment.

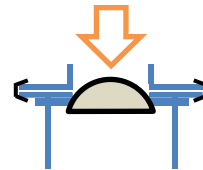
Roto-Disc, Inc. provides a wide-range of features and options with respect to materials of construction (M.O.C.), controls, seating/sealing types, flange drilling, flange adaptors and surface finishes/coatings/hardfacing, etc... All Roto-Disc, Inc. valves are specified and built based on the expected application conditions and other guidance as given by the specifying entity and as agreed to with Roto-Disc, Inc. Use of the valve in a manner that differs from that to which the valve was built may result in poor performance and/or premature wear of the valve and its components and is hereby not authorized by Roto-Disc, Inc.

1.0 INSTALLATION

1.1 ORIENTATION

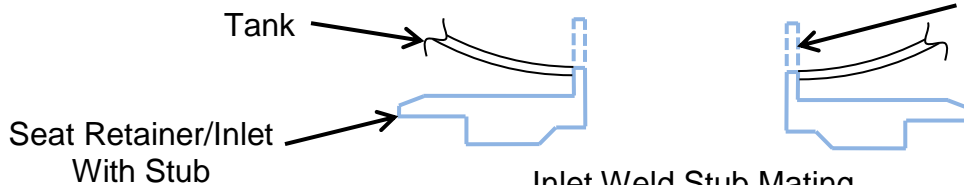
The recommended orientation of the Roto-Clean valve is 'dome-up'. Leakage will be greater if pressure differential is pushing the dome away from the seat. In some applications, it may be beneficial to install the valve in the 'dome-down' position. Consult Roto-Disc, Inc. before installing the valve in the dome-down position.

Material Flow



'Dome-up' Installation
Illustration 1-1

Roto-Clean valves with inlet weld stubs are commonly supplied with extra height on the stub to allow for cutting and welding into place.



Extra Inlet Stub Height
Can Be Cut To Minimize
Dead Space

Inlet Weld Stub Mating
Illustration 1-2

1.2 TEMPERATURE INFORMATION

The temperature rating for an individual valve depends on a variety of application conditions and features of the valve. Refer to the specifying entity or contact Roto-Disc, Inc. to determine the temperature range for a specific Roto-Clean valve.

Maximum Temperature Range: -40°F to 425°F
Typical Temperature Range: -25°F to 250°F

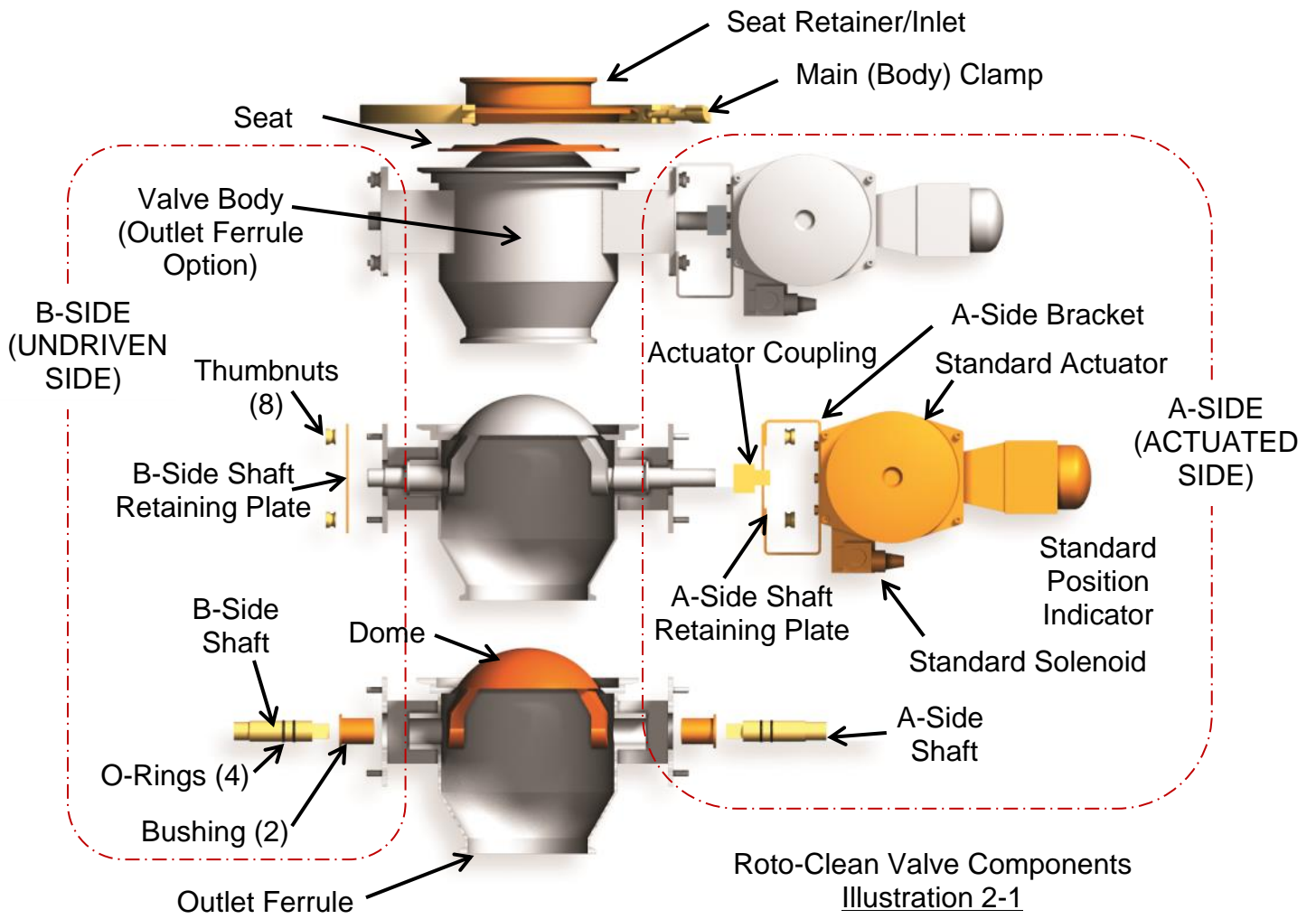
1.3 PRESSURE INFORMATION

The pressure application performance for an individual Roto-Clean® valve depends on a variety of application conditions and valve features, including the seating type and seat calibration. Contact Roto-Disc, Inc. for more information regarding specific Roto-Clean® valves in pressure applications.

1.4 CHEMICAL ATTACK AND MATERIAL COMPATABILITY

Roto-Disc, Inc. does not offer any warranty against chemical attack or material compatibility of a valve's components with a particular application environment.

2.0 ROTO-CLEAN® VALVE COMPONENTS (Common Size Weld Ferrule Connection Option)

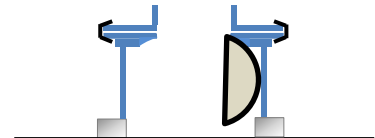


3.0 OPERATION

Roto-Disc, Inc. recommends each new valve be cycled (opened and closed) prior to installation to aid visualization and understanding of the valve's operation and condition.

Caution: As the dome rotates open, it may protrude below the bottom flange, depending on body configuration. Therefore it is necessary to support the body in a way that provides vertical clearance below the bottom flange for the dome to rotate into, as shown in illustration 3-1.

All Roto-Clean valves are calibrated during the assembly process & confirmed during a multi-point valve QC process.



Dome Protrusion
Illustration 3-1

3.1 VALVE (DOME) OPEN & CLOSE SETTINGS

Alert

Your Position Indicator Is Properly Calibrated – Do Not Adjust

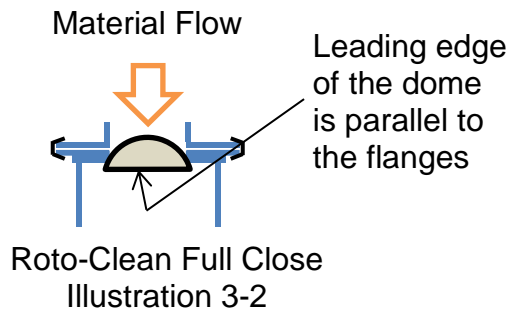


The visible beacon on most position indicator models signifies open and closed based on 90° of rotation. When a Roto-Disc valve rotates *more than 90°* to reach the full open position, the beacon will suggest the valve is not fully open (because the beacon has traveled *past* the 90° “open” mark) when in fact this is not the case. Beacon indicators are calibrated at the factory to be properly aligned to the closed position. Therefore, the imperfection of the beacon indicator will be exhibited when the valve is in the fully open position.

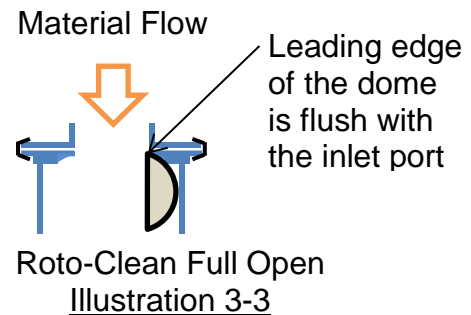
Example: A Roto-Disc valve requires 100° rotation to travel from the fully closed position to the fully open position. When the valve is fully closed, the visible beacon accurately indicates fully closed. When the valve is fully open, the beacon indicator indicates that the valve is not fully open because the beacon flaps are not accurately aligned in the open position. This is because the beacon is tracking the dome which has actually traveled 100° to reach the fully open position. In this instance the beacon will show that the valve is 10% off from fully open when in fact the valve is fully open.

Contact Roto-Disc, Inc. before attempting to adjust actuator stop settings to correct readings in the beacon indicator.

Roto-Clean valves are considered (full) *closed* when the dome is rotated into the path of the material flow and the leading edge is parallel to the top flange of the body.



Roto-Clean valves are considered (full) *open* when the leading edge has been rotated out of the material flow path to a point where the leading edge of the dome is flush with the edge of the inlet port.



There are no mechanical stops on the valve itself.

3.1.1 VALVES WITH ACTUATORS

When a Roto-Clean valve is supplied with a pneumatic or electric actuator mounted and coupled, the open and close limits, or settings, are controlled by the mechanical stops in the actuator. These stops are set at the factory during final assembly of the valve and are confirmed during the multi-point QC process. The stop settings should not require further adjustment. Contact Roto-Disc, Inc. before making any adjustments to the stop settings on the valve actuator

3.1.2 MANUALLY OPERATED VALVES

The full open and full closed positions for valves with manual handles are usually controlled by a quick release pin which is aligned with strategic holes in the actuator bracket and when engaged lock the dome in the full open, or full closed position. These stops are confirmed during the multi-point QC process and should not require further adjustment. Contact Roto-Disc, Inc. before making any adjustments to the stop settings on a valve with a manual handle actuator.

3.1.3 SPECIAL CONTROLS

Some Roto-Clean valves are supplied with special controls for metering or dribble feeding, such as electro-pneumatic (4-20mA) positioners or Roto-Disc's own dribble-feed solution. These solutions provide the means to set intermediate positions between full open and full closed by way of an electric or pneumatic signal. These solutions do not affect the full open or full closed position of the valve and the valve stops are still controlled and set at the actuator.

3.1.4 POSITION INDICATORS

Position Indicators do not control dome rotation. They indicate valve position (open or closed) by use of micro-switches and a visible beacon which are coupled to the dome rotation. Unless otherwise directed by the customer or specifying entity, Roto-Disc, Inc. will set switch #1 (or the “top” switch) to make at the full closed position and set switch #2 (or the “bottom” switch) to make at the full open position. The switches will be connected to a terminal strip inside the position indicator housing will have an NPT (female) conduit connection point. If specified, solenoid controls may be wired to the position indicator terminal block for further connection to user’s control source. The position switches are not directly coupled to visible beacons and thus they can be set to accurately indicate the open and closed position of the Roto-Clean® valve. See section 3.1 above for more information about the inaccuracy of visible beacon indicators.

3.2 AIR & ELECTRIC CONNECTIONS

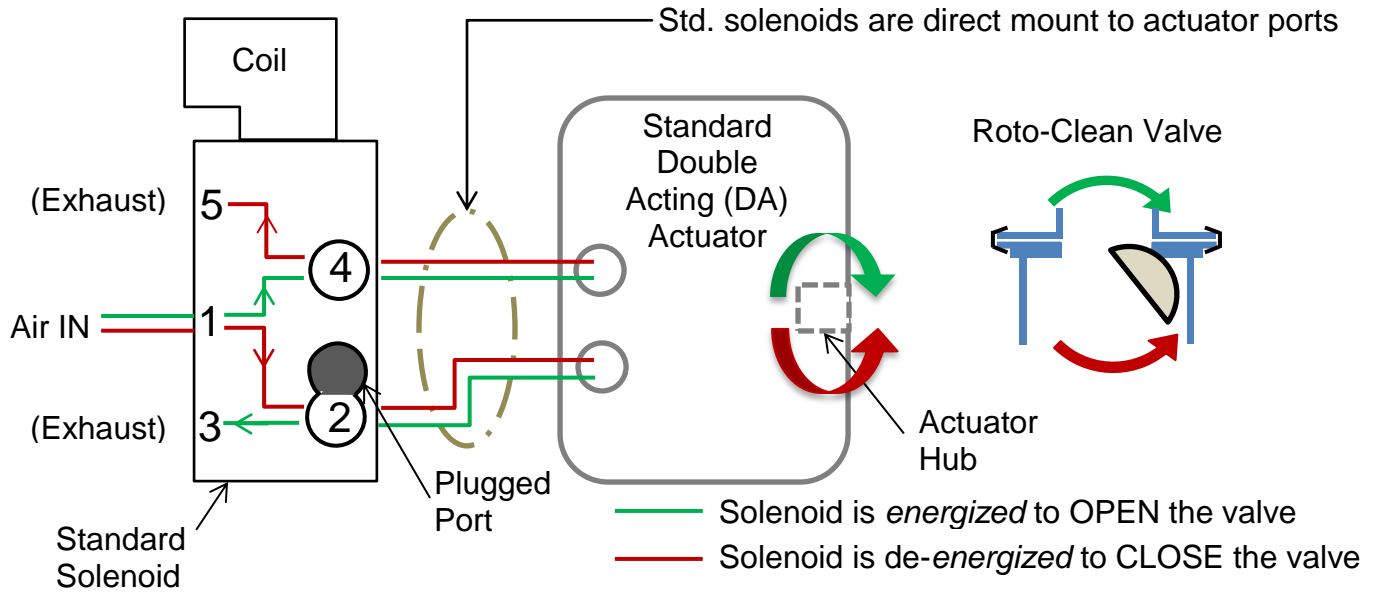
3.2.1 OVERVIEW

Solenoids supplied with pneumatically operated Roto-Clean valves are typically direct-mounted to the air inlet ports of the actuator. Most solenoids are supplied with dry contact leads for the specified voltage (typically 120VAC or 24VDC) and will have an NPT (female) conduit connection point. If specified, solenoid controls may be wired to the position indicator terminal block for further connection to user’s control source.

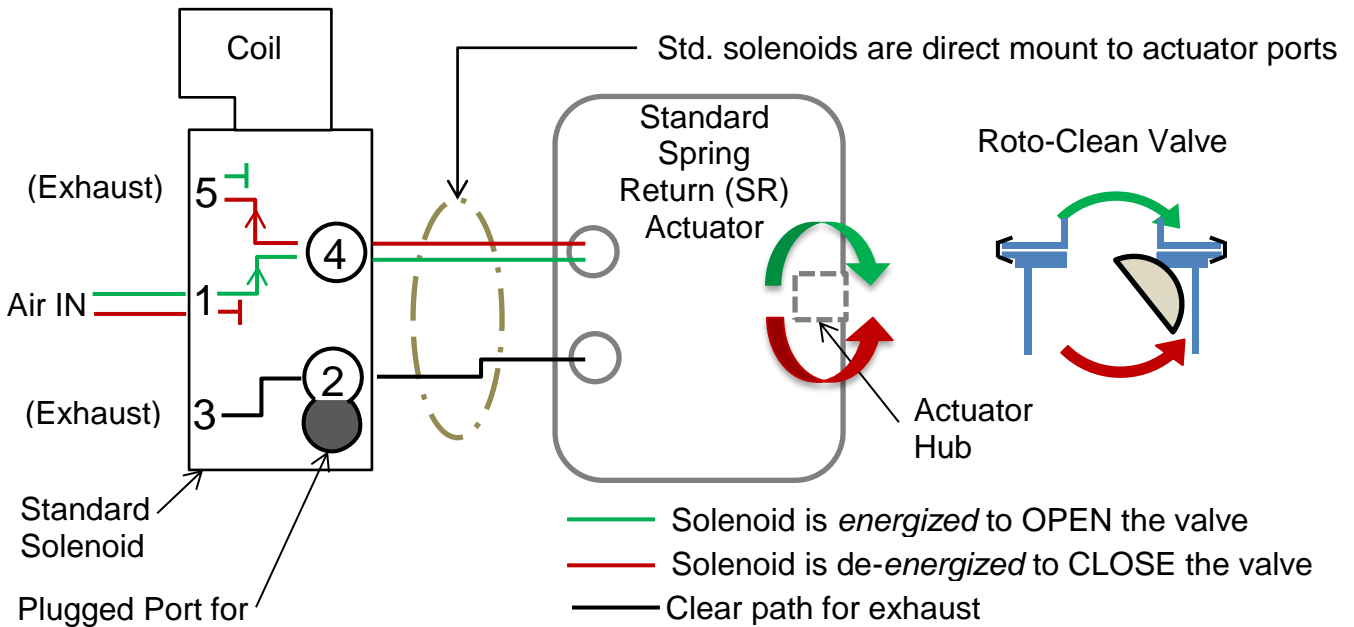
Refer to Roto-Disc, Inc. or the solenoid manufacturer’s literature for additional electrical connections information.

3.2.2 SOLENOID AIR SEQUENCE OF OPERATION:

Energizing or de-energizing the solenoid directs, or blocks plant air, as shown in illustrations 3-4 & 3-5. Port identifications (1-5) reflect the standard solenoid manufacturer's literature. See the solenoid manufacturer's literature for more information.



Double Acting (DA) Air Sequence for Dome Open & Close
Illustration 3-4



Spring Return (SR) Air Sequence for Dome Open & Close
Illustration 3-5

3.2.3 AIR FLOW CONTROLS

Air flow controls are installed on the exhaust ports of actuator solenoids. If no solenoid is supplied, air flow controls are installed on the actuator air ports. These flow controls regulate the plant air supply to increase or decrease the speed of dome rotation. *Without these flow controls, the dome may slam open and closed, increasing the chance for injury. This action may also increase mechanical stresses on several key valve components, which can have a negative effect on the longevity of the valve and components like the actuator.*

Turn the adjustments screw counter-clockwise to reduce dome rotation speed. Turn the adjustment screw clockwise to increase the dome rotation speed.

4.0 MAINTENANCE

Caution: Roto-Disc, Inc. recommends the valve be removed from service for all maintenance. Under no circumstance should the Actuator, Position Indicator, brackets or shaft retaining plates be removed while the valve is pressured above atmospheric pressure.

4.1 SEAT-TO-DOME CALIBRATION

4.1.1 OVERVIEW

Seat-to-dome calibration is set during the assembly process and is confirmed during the multi-point QC process. Seat-to-dome calibration is determined by the valve's application conditions and falls into two categories:

1. Compression seats – 'soft' seats
2. Clearance – 'metal' seats

Valves with soft seats, such as reinforced Teflon, PEEK, Nylon, UHMW or other engineered plastics are typically set for *compression* to provide tight sealing.

Valves with metal seats are set at the factory for *clearance* in order to prevent contact of the seat against the dome. Valves with both stainless steel domes and stainless steel seats (included with the Seat Retainer/Inlet) are set for clearance to prevent galling.

Field adjustments of seat calibration may be required due to changes in operating parameters. There are two methods for adjusting seat calibration:

1. Clamp tightness
2. Shim Adjustment

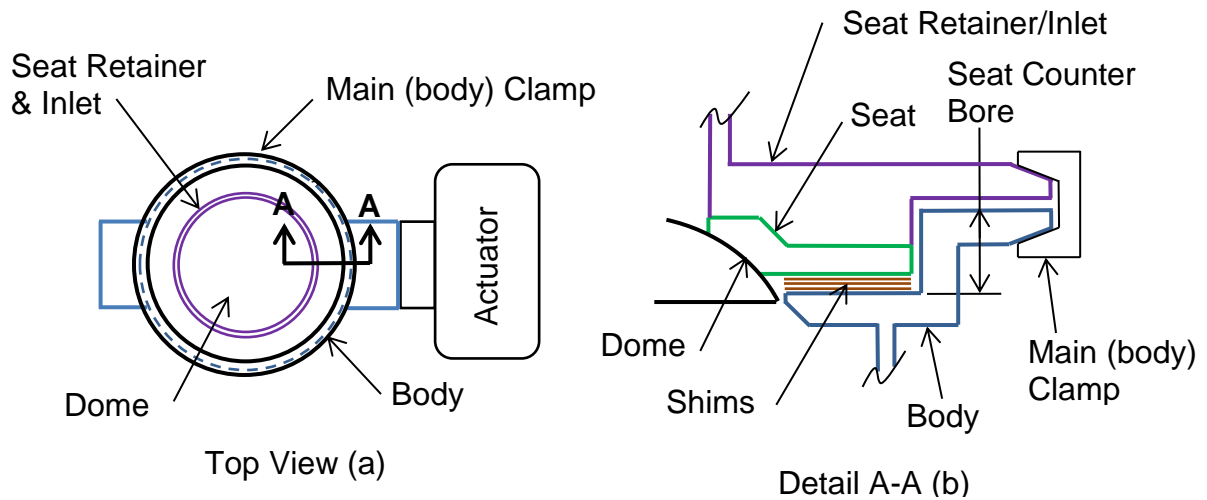
NOTE: This process involves cycling the dome, open and close, 'on the bench' where personnel are NOT protected from the leading edge of the dome as it rotates. Roto-Disc, Inc. recommends slowing down the dome rotation by adjusting the flow controls while working on the valve on the bench.

4.1.2 CLAMP TIGHTNESS

Seat-to-dome calibration can be affected by adjusting the main (body) clamp tightness. Turn the clamp knob to the right to increase clamp compression, or turn it to the left to loosen reduce clamp compression.

4.1.3 SHIM ADJUSTMENT:

Due to machining tolerances the dome-to-seat calibration may change when a new seat is installed. A 'shim set' is a collection of shims of various thickness between .003" and .015", totaling .032" thick. This collection allows combinations for precise seat-to-dome calibration.



Roto-Clean Soft Seat Arrangement
Illustration 4-1 (a) & (b)

1. Disconnect all air and electrical connections, and remove the valve from service.
2. Release the main (body) clamp.
3. Remove the seat retainer/inlet on top of the valve to expose the seat. (In some instances the seat retainer/inlet may stay in-place because it is welded to mating equipment above the valve, as shown in illustration 1-2.
4. Remove the seat.

Calibrate by adding or removing shims located beneath the seat, as shown in illustration 4-1(b). *Removing shim will increase compression, and adding shim will decrease compression.*

5. Position the seat retainer/inlet over the seat as shown in illustration 4-1(b). Check that the seat retainer is positioned correctly in the seat counter bore by confirming a visually consistent gap between the body flange and the seat retainer flange all the way around.
6. Place the main (body) clamp around the two parallel flanges, making sure the dome is in the closed position.
7. Tighten the clamp.

In the event of dome over-travel during calibration or operation, see section 5.1 for remedy procedure.

Note: Roto-Disc, Inc. recommends cycling the reassembled valve before putting it back into service.

4.2 SEAT REPLACEMENT

Caution: Roto-Disc, Inc. recommends the valve be removed from service for all maintenance. Under no circumstance should the Actuator, Position Indicator, brackets or shaft retaining plates be removed while the valve is pressured above atmospheric pressure.

1. Disconnect all air and electrical connections and remove the valve from service.

NOTE: This process involves cycling the dome, open and close, 'on the bench' where personnel are NOT protected from the leading edge of the dome as it rotates. Roto-Disc, Inc. recommends slowing down the dome rotation by adjusting the flow controls while working on the valve on the bench.

2. Release the main (body) clamp.
3. Remove the seat retainer/inlet on top of the valve to expose the seat. (In some instances the seat retainer/inlet may stay in-place because it is welded to mating equipment above the valve, as shown in illustration 1-2.)
4. Remove the seat and shims.

Tip: Assuming the existing shims will be reinstalled, take care to store them flat. Allowing shims to fold or bunch-up can result in creases forming, which can complicate valve re-assembly.

5. Inspect the seat for wear on the seating surface. A PTFE seat can be cleaned using soap and water.
6. If it is determined that the seat does *not* need replacement, reinstall the shims and existing seat. Then proceed to step 5 of section 4.1.3, Shim Adjustment.
7. If it is determined that the seat does need replacement, install a new seat with existing shim arrangement. Then proceed to step 5 of section 4.1.3, Shim Adjustment. Note: Replacement seats usually come with a full set of replacement shims.

4.3 DOME REPLACEMENT

When replacing a dome, Roto-Disc, Inc. recommends purchasing a dome, both shafts & shaft O-rings. The dome will include any polish, hard-facing and/or coating that was supplied with the original dome. To replace the dome, use the following procedure.

4.3.1 DOME REMOVAL

1. Disconnect all air and electrical connections, and remove the valve from service.
2. Mark the body on the actuator side to maintain orientation for reassembly. Then

remove the actuator, position indicator and brackets.

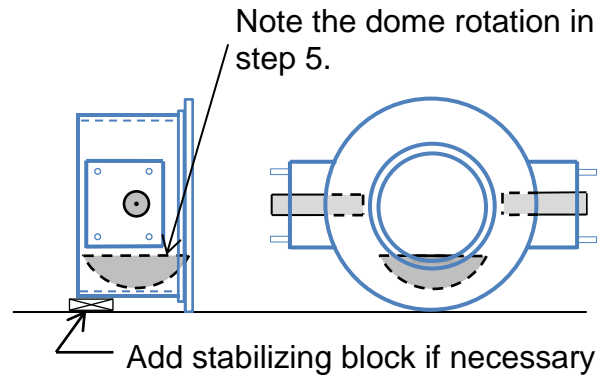
3. Release the main (body) clamp.
4. Remove the seat retainer /inlet and seat, as described in step 3 section 4.2.

Tip: It is not necessary to remove the actuator at this time, but it may make valve handling in step 5 easier on large valves.

5. Place the valve on its side, as shown in Illustration 4-2 on a flat, stable surface.

Note: The perimeter of the dome is an edge. Roto-Disc, Inc. advises using gloves or applying heavy tape over this edge to protect personnel when handling the dome.

Take precaution not to scar or nick the polished dome sphere during removal or temporary storage.



Valve orientation for dome removal
Illustration 4-2

6. Rotate the dome downward to the open position as shown in illustration 4-2

Note: Take precaution to capture the dome as the shafts disengage from the dome ear. Install sections of cardboard, or cloth, between the dome face and body to protect the dome face and support the weight of the dome

7. Loosen and remove the (8) thumb-nuts on either side of the valve.
8. Pull the entire A-side assembly out of the valve body and dome. The A-side assembly includes the actuator, shaft retaining plate, bracket, coupling and shaft.
9. Pull the entire B-side assembly out of the valve body and dome.
10. The dome should now be free for removal from the valve body.

4.4 SHAFT O-RING REPLACEMENT

1. Remove the four (4) worn O-rings from both shafts.
2. Inspect the shafts at the O-ring grooves for nicks or burrs that may have occurred during removal of the shafts from the valve body. Any nicks or burrs can impact the sealing efficiency and life of an O-ring.
3. Install new O-rings into the grooves on each shaft.
4. Apply O-ring lubricant generously over all four (4) O-rings.

4.5 BUSHING REPLACEMENT

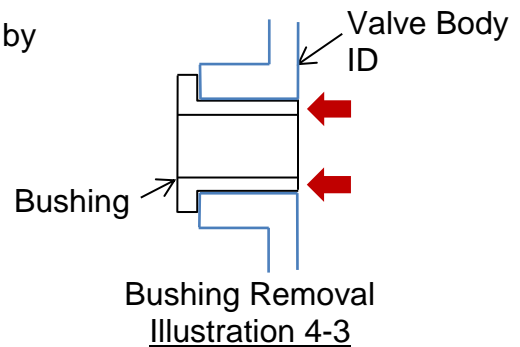
Roto-Clean bushings are designed for snug-fit into the valve body. Roto-Clean® valves can be ordered with bushings of various materials, but the basic replacement procedure is as follows.

4.5.1 BUSHING REMOVAL

1. Disconnect all air and electrical connections and remove the valve from service.
2. Mark the body on the actuator side to maintain orientation for re-assembly. Then remove the actuator, position indicator and brackets.
3. Remove the seat retainer and seat & shims as described in section 4.2.

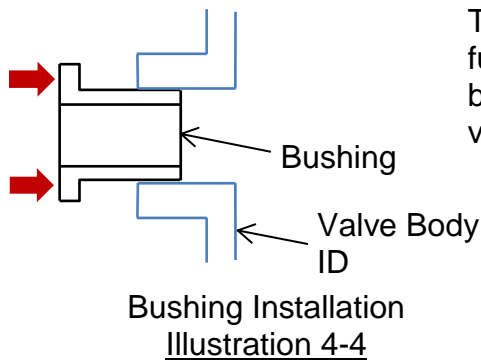
Tip: Assuming the existing shims will be reinstalled, take care to store them flat. Allowing shims to fold or bunch-up can result in creases forming, which can complicate valve re-assembly.

4. Remove the valve dome & shafts as instructed in section 4.3.1, Dome Removal.
5. Remove the worn bushings from the valve body by tapping the inside end of each bushing outward, as shown in illustration 4-3.
6. Clean the inside of the body bushing bores of any debris.

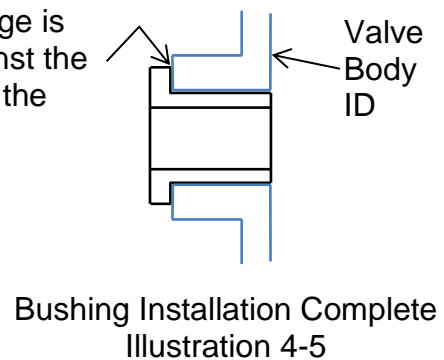


4.5.2 BUSHING INSTALLATION

1. Install the bushings into the valve body using a mandrel, or other tool that keeps constant contact on the outside face of the bushing flange. The bushing flange should be fully seated against the face of the bushing boss on the valve body as shown in Illustration 4-5.



The bushing flange is fully seated against the bushing boss on the valve body



3. Roto-Clean bushings are designed for snug-fit into the valve body.
4. Reassemble the valve per Dome Installation instructions in section 4.6, and Shim Adjustment in Section 4.1.3.

Note: Roto-Disc, Inc. recommends cycling the reassembled valve before putting it back into service.

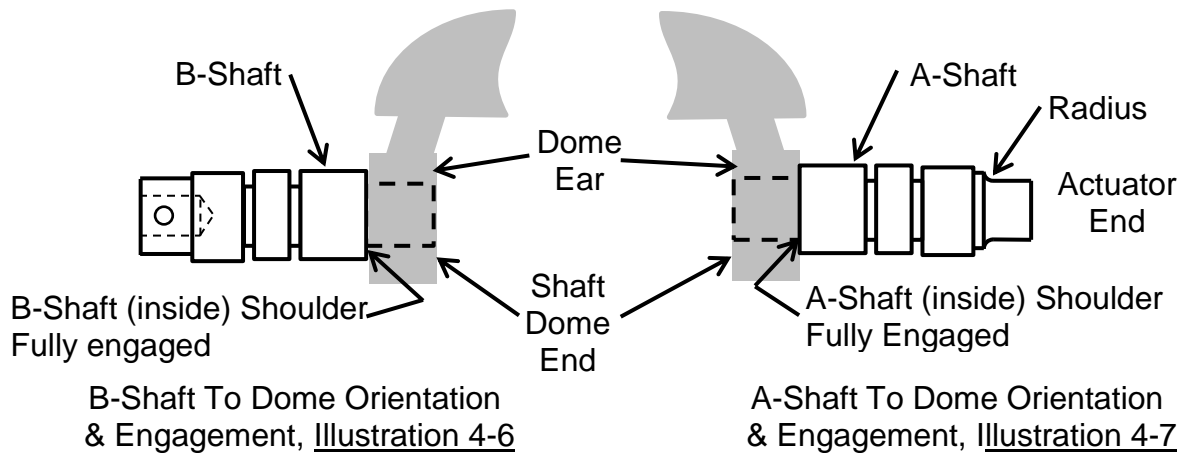
4.6 DOME INSTALLATION

1. Install new O-rings on each shaft as described in section 4.4.
2. Place the valve body on a flat, secure surface with the main (body) flange up.
3. Insert the 'dome end' of the actuator shaft (*longer* of the two shafts) through the bushing on the actuator side of the valve, as marked in step 2 of section 4.3.1.

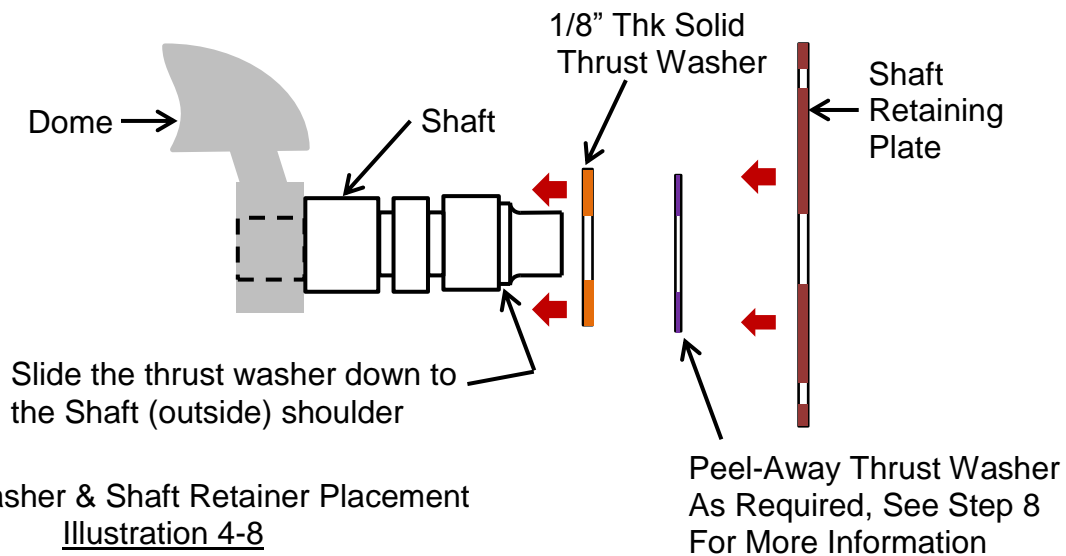
Note: The 'dome end' of both shafts is identified by the square shaft (inside) shoulder shown in illustrations 4-6 & 4-7. (On the A-Shaft, the 'actuator end' is identified by a radius on the opposite end of the shaft.)

Insert the A-shaft until it is fully visible inside the body cavity.

4. Insert the 'dome end' of the B-Shaft through the bushing on the other side of the valve until the 'dome end' of the shaft is fully visible inside the body cavity
5. Carefully place the dome inside the valve body. Place cardboard protection as noted in step 6 of Dome Removal section 4.3.1 to support the dome. Insert the shafts through the square holes in each dome so the dome is supported by both shafts. The shaft (inside) shoulder is where the dome square meets the round shaft. The shaft is in place when the shaft (inside) shoulder is seated against the outer face of the dome ear, as shown in Illustrations 4-6 & 4-7.



Roto-Clean valves make use of thrust washers & shaft retaining plates to keep the dome in position laterally. After both shafts are fully engaged at the dome ears place one 1/8" thick (solid) thrust washer over the exposed end of each shaft outside the body, until it sits flush against the shaft (outside) shoulder, as shown in Illustration 4-8 .



Thrust Washer & Shaft Retainer Placement
Illustration 4-8

6. Slide the shaft retaining plates over each exposed shaft until it is flush against the thrust washer. Then fasten in place using the (8) thumbnuts on both sides.
7. The thrust washers must be firmly sandwiched between the shaft retaining plates and each shaft when the shaft retaining plate is fastened to the mounting bosses on the body.

Thrust Washer Check: If either thrust washer can be rotated when the shaft retainer plates are fastened in place, the union is loose. *This can allow room for the dome to shift.* In this situation, it may be necessary to add a peel-away thrust washer, as referenced in Illustration 4-8. Peel-away thrust washers are available from Roto-Disc, Inc.

8. PEEL-AWAY THRUST WASHER INSTALLATION (AS NEEDED)

1. Remove the shaft retaining plate from the side where the solid thrust washer can be rotated by hand.
2. Insert a peel-away thrust washer between the shaft retaining plate and the solid thrust as shown in Illustration 4-8.
3. If the shaft retaining plate can be rocked, or there is a visible gap between the shaft retaining plate and the mounting pad on the body, modify the peel-away thrust washer as described below.

Peel-away Thrust Washer Modification: Peel-away thrust washers are laminated

for separation into thinner sections if needed. Slice through the OD of the peel-away thrust washer with a razor blade or knife to separate the laminations into thin sections as needed. Place the new section over the shaft and against the solid thrust washer. Then resume assembly of the valve. Repeat this process as necessary.

When capturing the B-Side thrust washer, there is often no bracket installed. The shaft retaining plate is still required to keep the thrust washer and dome securely in place.

9. Rotate the dome manually to ensure smooth rotation, and there is no interference from the valve body.

Caution: Beware of dome over-travel when manually rotating the dome in a tightly shimmed valve. See section 5.1 for more information on this condition.

10. Rotate the dome to the closed position and proceed with seat installation and calibration, as described in Section 4.2.
11. Slide the A-Coupling over the end of the A-Side Shaft.
12. Attach the actuator bracket, actuator, and position indicator (if applicable). Re-check the dome to seat calibration to ensure the dome has not shifted during the process of mounting the actuator onto the A-Coupling & A-Shaft.

Note: Roto-Disc, Inc. recommends cycling the reassembled valve before putting it back into service

5.0 TROUBLESHOOTING

5.1 DOME OVER-TRAVEL CONDITION

5.1.1 OVERVIEW

The dome of a properly calibrated valve will rotate to full open position, as shown in illustration 5-1.

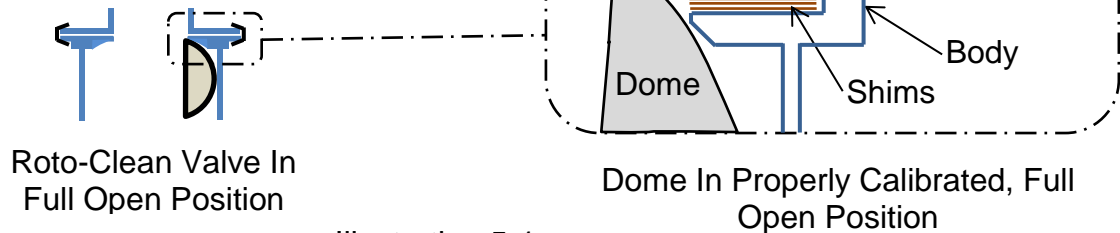


Illustration 5-1

If the dome rotates *past* the seat it will dis-engage from the seat, as shown in illustration 5-2.

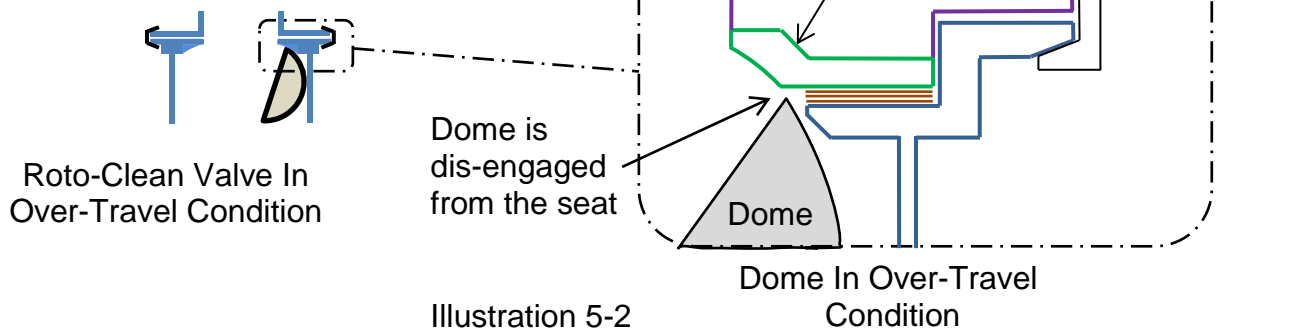


Illustration 5-2

Caution: In a tightly shimmed valve, simply rotating the dome back into seat contact may damage the sealing surface of the seat.

5.1.2 REMEDY:

1. Loosen the main (body) clamp.
2. Rotate the dome back to the full closed position.
3. Tighten the main (body) clamp.

Note: As described in section 3.1.1, the stop positions of all actuated Roto-Disc, Inc. valves are set at the factory. At full open position, some Roto-Clean valves may appear out of sequence with the visible beacon as described in section 3.1. This does not necessarily indicate incorrect stop setting at the open position of the Roto-Disc valve.

5.2 CONVERT DIRECT-DRIVE STYLE TO BARE STEM STYLE WITH COUPLING

NOTE: This process involves cycling the dome open and close 'on the bench' where personnel are exposed to the leading edge of the dome as it rotates. Roto-Disc, Inc. recommends slowing down the dome rotation by adjusting the flow controls while working on the valve on the bench.

The Direct-drive valve design makes use of a male square at the actuator end of the A-Side shaft that directly engages the female hub in the actuator. The dome is centered laterally by thrust washers that capture both shafts between two shaft retaining plates that mount to the outside of the valve body. Convert the direct-drive style to the bare stem with coupling style by the following process:

1. Remove the valve from service and disassemble the valve as described in section 4.3.1, Dome Removal.

Note: With the shaft O-rings on the shafts exposed, Roto-Disc, Inc. recommends using this opportunity to replace the shaft O-rings as described in section 4.4.

2. Reinstall the dome with the bare stem style shafts as described in section 4.6, Dome Installation. The bare stem design will utilize a coupling that mates to the actuator. All other parts of the valve are the same.
3. Install the A-coupling on end of the A-Side shaft.
4. Attach the actuator bracket, actuator and position indicator (if applicable).

Note: Roto-Disc, Inc. recommends cycling the reassembled valve before putting it back into service

5.3 SPLINE SHAFT DESIGN CONVERSION

Contact Roto-Disc, Inc. for retro-fit information to convert spline shaft style valve to a bare stem style with coupling valve.

6.0 ROTO-CLEAN® RECOMMENDED SPARE PARTS

The following list represents typical replacement parts for the Roto-Clean valve. The items are rank ordered in terms of likely need for replacement, but this can vary depending on application conditions. As such, regular inspection of the valve is recommended to ensure long service life. For a complete listing of all parts, see the bill of materials section on the assembly drawings.

ITEM	REQ QTY	DESCRIPTION
1	1	Seat with Shim Set - material as supplied with the valve
2	4	Shaft 'O' Rings - material as supplied with the valve
3	2	Bushings - material as supplied with valve
4	1	Actuator Repair Kit – for actuator as supplied with valve
5	1	Dome - material, polish, hardfacing and/or coatings as supplied with valve)
6	1	A-Side (Actuator) Shaft – material as supplied with the valve
7	1	B-Side (Undriven side Shaft – material as supplied with the valve

7.0 NOTES

1. FOR ROUTINE VALVE REFURBISHING, ROTO-DISC, INC. RECOMMENDS (1) NEW SEAT AND (4) NEW SHAFT 'O' RINGS.
2. FOR COMPLETE OVERHAUL, WE RECOMMEND (2) NEW BUSHINGS AND A NEW DOME WITH SHAFTS IN ADDITION TO THE PARTS LISTED IN NOTE #2.
3. IF THE ACTUATOR HAS OBTAINED MORE THAN (1) MILLION CYCLES, IT SHOULD BE EVALUATED FOR POSSIBLE REBUILD OR REPLACEMENT.
4. DUE TO TOLERANCES IN MACHINING, THE DOME-TO-SEAT SETTING MAY CHANGE WITH A NEW SEAT. THEREFORE, IT MAY BE NECESSARY TO TAKE-OUT OR ADD MORE SHIMS TO ATTAIN PROPER SETTING. NEW SHIM SETS (.032" TOTAL THICKNESS) ARE COMMONLY SUPPLIED WITH NEW SEATS, HOWEVER IT IS UNLIKELY THAT MORE THAN 1-2 SHIMS WOULD BE NEEDED, IF ANY, AND IT MAY BE NECESSARY TO REMOVE SOME OF THE EXISTING SHIMS.
5. SINCE THE ACTUATOR COUPLING TAPER PIN ALSO ACTS AS A SHEAR PIN, IT IS RECOMMENDED THAT EXTRA ARE STOCKED (this part is not included on valves with the direct-drive design)
6. AS OF JANUARY 1, 2011, ROTO-DISC, INC. NO LONGER SUPPLIES DOME ASSEMBLIES WITH TAPER PINS. AS AN ALTERNATIVE, WE OFFER OUR NEW BARE-STEM DESIGN. THE NEW DESIGN IS MORE ROBUST AND WILL FIT INTO ANY ROTO-DISC VALVE THAT WAS ORIGINALLY SUPPLIED WITH TAPER PINS. THE BARE-STEM DESIGN REQUIRES A NEW COUPLING FOR THE ACTUATOR, (2) SHAFT RETAINING PLATES, AND THRUST WASHERS, IN ADDITION TO THE DOME WITH SHAFTS. PLEASE NOTIFY ROTO-DISC, INC. OF THE ACTUATOR STYLE (MAKE/MODEL) WHEN REQUESTING A QUOTE.
7. ROTO-DISC, INC. SUPPLIES VALVES WITH A WIDE RANGE OF MATERIALS OF CONSTRUCTION. WHEN ORDERING SPARE PARTS, PLEASE REFERENCE THE JOB NUMBER (RD-XXXX) AND/OR THE SERIAL NUMBER OF THE VALVE FOR WHICH THE PARTS ARE INTENDED. THIS WILL ENSURE THAT THE PROPER REPLACEMENT PARTS ARE SUPPLIED. THESE NUMBERS WILL BE FOUND ON THE NAME PLATE ON THE VALVE AND ALL QUOTES, ACKNOWLEDGEMENTS, PACKING LISTS AND INVOICES FROM ROTO-DISC, INC.