

Installation & Maintenance Instructions

2-WAY "FREE HANDLE" MANUAL RESET SHUT-OFF VALVES
WITH VISUAL POSITION INDICATOR
NORMALLY CLOSED OPERATION
3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2" OR 3" NPT

SERIES

8044

Form No. V6371R2—Sec. 1
(Section 1 of 2)

NOTICE: See separate solenoid installation and maintenance instructions for information on: Wiring, Solenoid Temperature, Causes of Improper Operation, and Coil Replacement.

For exploded views, see Form No. V6371 – Section 2 of 2.

DESCRIPTION

Series 8044 valves are 2-way normally closed, *free handle* manual reset shut-off valves. The *free handle* lever will not open the valve until the solenoid is energized which allows the lever to engage. Only then can the lever be manually rotated to the latched position opening the valve. The valve will trip closed (shut) instantly when the solenoid is de-energized or when lever is rotated to the closed position. Visual indication of *open* and *shut* positions is accomplished by a highly visual position indicator in the side of the operating movement. An orange indicating bar aligns itself with the words *open* or *shut*. Standard valves are supplied with a general purpose junction box solenoid enclosure. The valves may also be provided with a watertight/explosionproof solenoid enclosure.

Provisions for Pressure and Seat Leakage Testing (See Figure 1.)

Series 8044 valves are provided with four 1/8" NPT tapped and plugged holes, two on either side of valve body. Two upstream for pressure testing; two downstream for seat leakage testing. Leakage testing frequency shall be at least annually in accordance with NFPA-86 or original equipment manufacturer recommendations. Testing is also required after valve disassembly and reassembly for inspection, cleaning or rebuilding.

OPERATION

The valve can be manually set to the open position only when the solenoid is energized. When the solenoid is de-energized, the valve will close and cannot be opened or held open manually until electrical power is restored to the solenoid.

To Open: Energize the solenoid, rotate lever to closed position and rotate back to open position.

To Close: De-energize solenoid or rotate lever to close position.

Operating Pressure Differential (psi)

Pipe Size	Minimum	Maximum
3/4", 1", 1 1/4" and 1 1/2"	0	25 psi
2"	0	20 psi
2 1/2" and 3"	0	10 psi

INSTALLATION

Check nameplate for correct catalog number, pressure, voltage, frequency, and service. Never apply incompatible fluids or exceed pressure rating of the valve. Installation and valve maintenance to be performed by qualified personnel.

Future Service Considerations

Provision should be made for performing seat leakage, external leakage, and operational tests on the valve with a nonhazardous, noncombustible fluid after disassembly and reassembly.

Temperature Limitations

For maximum valve ambient and fluid temperatures, refer to chart below. Check wattage rating on nameplate to determine temperature.

Watt Rating	Coil Class	Ambient and Fluid Temperature
20	F	-20°F (31°C) to + 125°F (52°C)
36.2	H	-20°F (31°C) to + 77°F (25°C)

Positioning

Valve must be mounted with operator assembly vertical and upright.

Piping

Connect piping to valve according to markings on valve body. Apply pipe compound sparingly to male pipe threads only. If applied to valve threads the compound may enter the valve and cause operational difficulty. Avoid pipe strain by properly supporting and aligning piping.

MAINTENANCE

When tightening the pipe, do not use valve or operator assembly as a lever. Locate wrenches applied to valve body or piping as closed as possible to connection point. Valve should be checked for external leakage at piping connections after installation, see *Testing for External Leakage* section.

▲ CAUTION: To avoid damage to the valve body, **DO NOT OVERTIGHTEN PIPE CONNECTIONS.** If **TEFLON*** tape, paste, spray or similar lubricant is used, use extra care when tightening due to reduced friction.

▲ CAUTION: To protect the solenoid valve, install a strainer or filter suitable for the service involved in the inlet side as close to the valve as possible. Clean periodically depending on service conditions. See Series 8600, 8601, and 8602 for strainers.

Testing for External Leakage

▲ WARNING: To prevent the possibility of severe personal injury or property damage, extinguish all open flames and avoid any type of sparking or ignition.

1. Block gas flow on downstream side of valve.
2. Apply pressure to valve within nameplate rating and energize solenoid.
3. Apply a soapy solution or a commercially available leak detecting solution to the pipe connections and check for bubbles. If the valve has been tested for seat leakage or disassembled and reassembled for inspecting, cleaning, or rebuilding apply the solution around solenoid base sub-assembly, bonnet/body joint and pipe plugs.
4. If leakage exists, depressurize valve and turn off electrical power supply. Tighten connections as required and retest following the above steps.

Alignment of Operating Movement

To facilitate installation and for desirable visual positioning, the operating movement with the solenoid may be rotated in increments of 90°. Remove cover screws (5), instruction plate, position indicator window and cover gasket from lever side of operating movement. Using a wrench, loosen housing nut. Rotate operating movement to desired position. Torque housing nut to 175 ± 25 in-lbs [19,8 ± 2,8 Nm]. Replace cover gasket, position indicator window, instruction plate and cover screws. Torque cover screws in a crisscross manner to 10 in-lbs [1,1 Nm].

▲ WARNING: To prevent the possibility of severe personal injury or property damage, turn off electrical power, depressurize valve, extinguish all open flames and avoid any type of sparking or ignition. Vent hazardous or combustible fluid to a safe area before servicing the valve.

NOTE: It is not necessary to remove the valve from the pipeline for repairs.

Cleaning

All manual reset solenoid valves should be cleaned periodically. The time between cleanings will vary depending on the medium and service conditions. In general, if the voltage to the coil is correct, sluggish valve operation, excessive noise, or leakage will indicate that cleaning is required. In the extreme case, faulty valve operation will occur and the valve may fail to open or close. Clean strainer or filter when cleaning the valve.

Preventive Maintenance

- Keep the medium flowing through the valve as free from dirt and foreign material as possible.
- When in service, the valve should be operated every two weeks to ensure proper operation. If necessary, electrical wiring and piping connections should be made so valve can be test operated without affecting other equipment.
- Inspect bonnet assembly for leakage at bleed hole. Leakage indicates worn internal seals and a complete ASCO Rebuild Kit should be installed.
- Periodic inspection of the operating movement should be carried out. Operating movement should be kept clean and free from paint, foreign matter, corrosion, freezing, and icing conditions.
- Depending on medium and service conditions, periodic inspection of internal valve and solenoid parts for damage or excessive wear is recommended. Thoroughly clean all parts. If parts are worn or damaged, install a complete ASCO Rebuild Kit.

Causes of Improper Operation

- **Incorrect Pressure:** Check valve pressure. Pressure to valve must be within range specified on nameplate.
- **Excessive Leakage:** Disassemble valve and clean all parts. If parts are worn or damaged, install a complete ASCO Rebuild Kit.

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Valve Disassembly

1. Disassemble valve in an orderly fashion using exploded views on Form No. V6371 – Section 2 of 2 for identification and placement of parts.
2. Remove solenoid from manual reset housing assembly, see separate instructions.
3. Unscrew solenoid base sub-assembly from operator housing using special wrench adapter supplied in ASCO Rebuild Kit. For wrench adapter only, order ASCO Wrench Kit No. K218950.
4. Remove solenoid base sub-assembly, core assembly, solenoid base gasket, and solenoid bushing (not present on all constructions) from housing (Figure 2).

NOTE: On valves supplied with an watertight-/explosionproof solenoid enclosure, the core assembly has a plugnut gasket which seats on the lower flange of the core assembly.

5. Remove cover screws, instruction plate, position indicator window and cover gasket from lever side of operating movement.
6. Loosen the screw on the position indicator assembly on the valve stem assembly.
7. Remove end cap and end cap gasket.
8. Remove bonnet screws, valve bonnet, closing spring and body gasket. For 2 1/2" and 3" NPT valves, remove body passage gaskets (2).
9. Holding the disc nut with a pair of pliers, pull the entire stem/disc sub-assembly from the valve body. Simultaneously remove the position indicator assembly at the top of the stem as the stem/disc sub-assembly is being pulled from the valve body.

Note: Refer to Figure 3. for disassembly of stem/disc sub-assembly.

10. Using a vise or a suitable set of locking pliers hold stem securely as close as possible to disc assembly. Then using a 7/16" wrench unscrew disc nut from stem/disc sub-assembly. Remove disc gasket, main disc washer, main disc, disc spacer, washer and adapter from stem. Position the parts exactly as they are removed, as the sequence of disassembly is important for reassembly and correct operation of the valve.

Service Note

On older valve constructions, the stem is a **stem assembly** and the adapter is not present. When rebuilding valve use new **stem** and **adapter** supplied in ASCO Rebuild Kit.

11. Remove housing nut and the entire operating movement.

12. Remove anti-rotation bracket and housing gasket from bonnet assembly.
13. Unscrew bonnet assembly and remove operator gasket.
14. All parts are now accessible to clean or replace. Replace worn or damaged parts. However, for best results replace all parts as supplied with an ASCO Rebuild Kit.

Valve Reassembly

1. Reassemble valve using exploded view for identification and placement of parts.

▲ CAUTION: Install all parts supplied in ASCO Rebuild Kit. Do not mix old and new parts. A partial rebuild may result in valve malfunction.

2. Lubricate the parts listed below with DOW CORNING® 200 fluid lubricant or an equivalent high-grade silicone grease.
 - Solenoid base gasket
 - Housing gasket
 - Solenoid bushing
 - End cap gasket
 - Solenoid bonnet gasket †
 - Operator gasket
 - Body gasket
 - Body passage gaskets (2)
 - Plugnut gasket †

†Present with some watertight/explosionproof solenoid constructions only.

3. Lubricate disc gasket with DOW CORNING® 111 Compound lubricant or an equivalent high-grade silicone grease.
4. Install operator gasket and housing gasket on bonnet assembly. For valves with 2 1/2" or 3" NPT, operator gasket seats in valve body. Install bonnet assembly into valve body. For valves with 3/4" through 2" NPT constructions, torque bonnet assembly to 175 ± 25 in-lbs [19,8 ± 2,8 Nm]. For valves of 2 1/2" and 3" NPT construction, torque bonnet assembly to 50 ± 5 ft-lbs [67,8 ± 6,8 Nm].
5. Reassemble stem/disc sub-assembly paying careful attention to exploded views in Figure 3 on page 7 of 8. Install adapter, washer (concave side up toward stem), spacer, disc, main disc, main disc washer, disc gasket and disc nut. Prior to assembly, it is recommended that LOCTITE® Primer "N" or "T" be used on threads of stem and disc nut. Allow primer to air dry for 5 minutes, then apply LOCTITE® TL290 thread sealer to disc nut and stem threads. Torque disc nut to 75 ± 10 in-lbs [8,5 ± 1,1 Nm]. Wipe any excessive amount of thread sealer from assembly as this sealer is anaerobic and will remain in a liquid state in the presence of air. For primed parts allow 30–60 minutes for cure time. For unprimed parts, allow 2 hours cure time before operating valve.

6. Lubricate stem/disc sub-assembly with Texaco, Inc. Code No. 2346 Low Temp Grease EP supplied in ASCO Rebuild Kit. Then install stem/disc sub-assembly into valve body and through bonnet assembly.
7. Replace body gasket and body passage gaskets (2). Body passage gaskets are only used on 2 1/2" and 3" NPT valve constructions.
8. Replace spring, valve bonnet and bonnet screws. For valves with 3/4" NPT, torque bonnet screws in a crisscross manner to 95 ± 10 in-lbs [10,7 ± 1,1 Nm]. For valves with 1" through 2" NPT, torque bonnet screws in a crisscross manner to 144 ± 15 in-lbs [16,3 ± 1,7 Nm]. For valves with 2 1/2" and 3" NPT, torque bonnet screws to 250 ± 25 in-lbs [28,3 ± 2,8 Nm].
9. Install end cap gasket and end cap. For valves with 3/4" (8044A1 only), 2 1/2" and 3" NPT, torque end cap to 50 ± 5 ft-lbs [67,8 ± 6,8 Nm]. For valves with 3/4" through 2" NPT, torque end cap to 175 ± 25 in-lbs [19,8 ± 2,8 Nm].
10. Install operating movement assembly over the stem assembly and bonnet assembly. Simultaneously, install housing nut and position indicator assembly over stem assembly. Be sure screw and nut on position indicator assembly are facing inwards (to the middle of the operator housing).
11. Rotate operating movement to desired position. Torque housing nut to 175 ± 25 in-lbs [19,8 ± 2,8 Nm].
12. To adjust position indicator, replace instruction plate on operating movement and install two cover screws temporarily. Adjust position indicator on stem assembly until orange indicator line is in the center of the *shut* window. Torque indicator screw to 25 ± 5 in-lbs [2,8 ± 0,6 Nm]. Remove cover screws and instruction plate.
13. Install cover gasket, operator cover and cover screws on solenoid side of operating movement. Install cover gasket, position indicator window, instruction plate and cover screws on lever side of operating movement. Torque screws in a crisscross manner to 10 +5 -2 in-lbs [1,1 ± 0,6-0,2 Nm].
14. Position solenoid bushing (if present) and solenoid base gasket in operator housing.
15. Install core assembly into solenoid base sub-assembly. Then install assembly into operator housing.

NOTE: On valves supplied with an watertight/explosionproof solenoid enclosure, position plugnut gasket over the core assembly and down against the lower flange. Torque solenoid base sub-assembly to 175 ± 25 in-lbs [19,8 ± 2,8 Nm].

16. Replace solenoid enclosure and make electrical hookup to solenoid, see separate instructions.

▲ WARNING: To prevent the possibility of severe personal injury or property damage, check valve for proper operation before returning to service. Also perform internal seat and external leakage tests (with a nonhazardous, noncombustible fluid if practical).

17. Check valve for external leakage as indicated under the *Piping* section, and for internal (seat) leakage as follows.

Testing for Internal (Seat) Leakage

▲ CAUTION: Be sure valve can be tested without affecting other equipment.

1. Using a 3/16 hex key wrench, remove the 1/8" NPT pipe plug from the downstream side of the valve body. Then install suitable test piping (e.g.; two short nipples and an elbow or tubing) to check for leakage.
2. Block flow downstream of valve.
3. Restore electrical power supply and pressurize valve to nameplate rating.
4. With valve de-energized, immerse end of test piping in a cup of water for 20-30 seconds and look for bubbles, which would be indicative of seat leakage. Repeat this procedure several times. Between each test, remove cup of water and operate valve.
5. If seat leakage is detected, turn off electrical power and depressurize valve. Disassemble and check for proper placement of parts, or any foreign matter that may have entered the valve. Clean as necessary, reassemble and re-test valve for both external and internal leakage.
6. If no seat leakage is detected, remove test piping. Apply a small amount of Loctite Corporation's PST® Pipe Sealant 567 (or equivalent) to the pipe plug threads. Reinstall the pipe plug and tighten securely.
7. Test for external leakage as described in *Piping* section.
8. When maintenance is complete, operate the valve a few times to be sure of proper operation. A metallic *click* indicates the solenoid is operating.

ORDERING INFORMATION

FOR ASCO REBUILD KITS

Parts marked with an asterisk (*) in the exploded view are supplied in Rebuild Kits. When Ordering Rebuild Kits for ASCO valves, order the Rebuild Kit number stamped on the valve nameplate. If the number of the kit is not visible, order by indicating the number of kits required, and the Catalog Number and Serial Number of the valve(s) for which they are intended.

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SERIES

8044

Form No. V6371R2—Sec.2
(Section 2 of 2)

NOTICE: For instructions, see Form No. V6371—Section 1.

Torque Chart

Part Name (Note 1)	Valve Body Size (NPT)	Torque Value	Torque Value Newton—Meters	Figure Number Where Used
Solenoid base sub—assembly	3/4 thru 3	175 ± 25 in—lbs	19,8 ± 2,8	Figure 1
Cover screws (4)	3/4 thru 3	10 +5 –2 in—lbs	1,1 +0.6 –0.2	Figure 2 & 3
Housing nut	3/4 thru 3	175 ± 25 in—lbs	19,8 ± 2,8	
Bonnet assembly	3/4 thru 2	175 ± 25 in—lbs	19,8 ± 2,8	
	2–1/2 and 3	50 ± 5 ft—lbs	67,8 ± 6,8	
Disc nut	3/4 thru 3	75 ± 10 in—lbs	8,5 ± 1,1	
Bonnet screws	3/4 (Note 2)	95 ± 10 in—lbs	8,5 ± 1,1	
	3/4 thru 2	144 ± 15 in—lbs	16,3 ± 1,7	
	2–1/2 and 3	250 ± 25 in—lbs	28,3 ± 2,8	
End cap	3/4, 2–1/2 & 3	50 ± 5 ft—lbs	67,8 ± 6,8	
	1 thru 2	175 ± 25 in—lbs	19,8 ± 2,8	
Indicator screw	3/4 thru 3	25 ± 25 in—lbs	2,8 ± 0,6	

Notes:

1. Thread all parts by hand as far as possible. Then torque evenly in a crisscross manner where applicable.
2. Torque for catalog No. 8044A1 only.

Lubrication Chart

Lubrication	Parts to be lubricated		
DOW CORNING® 111 Compound lubricant or an equivalent high-grade silicone grease.	disc gasket		
DOW CORNING® 200 Fluid lubricant or an equivalent high-grade silicone fluid.	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">solenoid base gasket housing gasket solenoid bushing end cap gasket operator gasket</td> <td style="width: 50%; border: none;">body gasket body passage gaskets (2) plugnut gasket † solenoid bonnet gasket †</td> </tr> </table>	solenoid base gasket housing gasket solenoid bushing end cap gasket operator gasket	body gasket body passage gaskets (2) plugnut gasket † solenoid bonnet gasket †
solenoid base gasket housing gasket solenoid bushing end cap gasket operator gasket	body gasket body passage gaskets (2) plugnut gasket † solenoid bonnet gasket †		
Texaco Inc. Code No. 2346 Low Temp Grease EP (ASCO No. 208832-9)	stem/disc sub-assembly		

† When present

Partial side view of valve body showing location of tapped and plugged holes for pressure and seat leakage testing

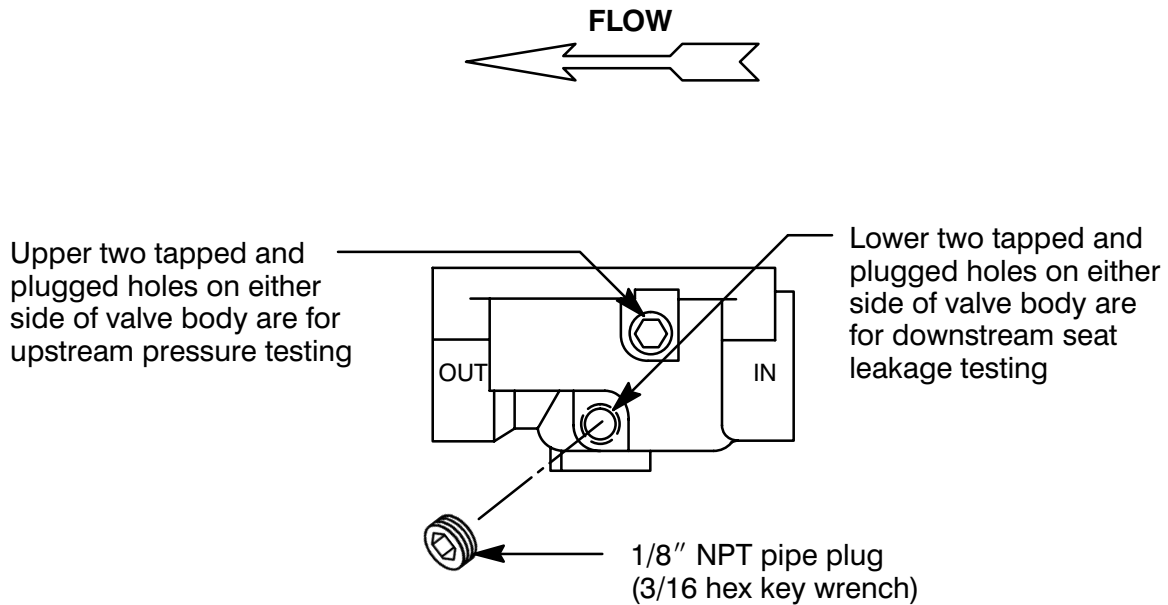


Figure 1. Provisions for pressure and seat leakage testing.

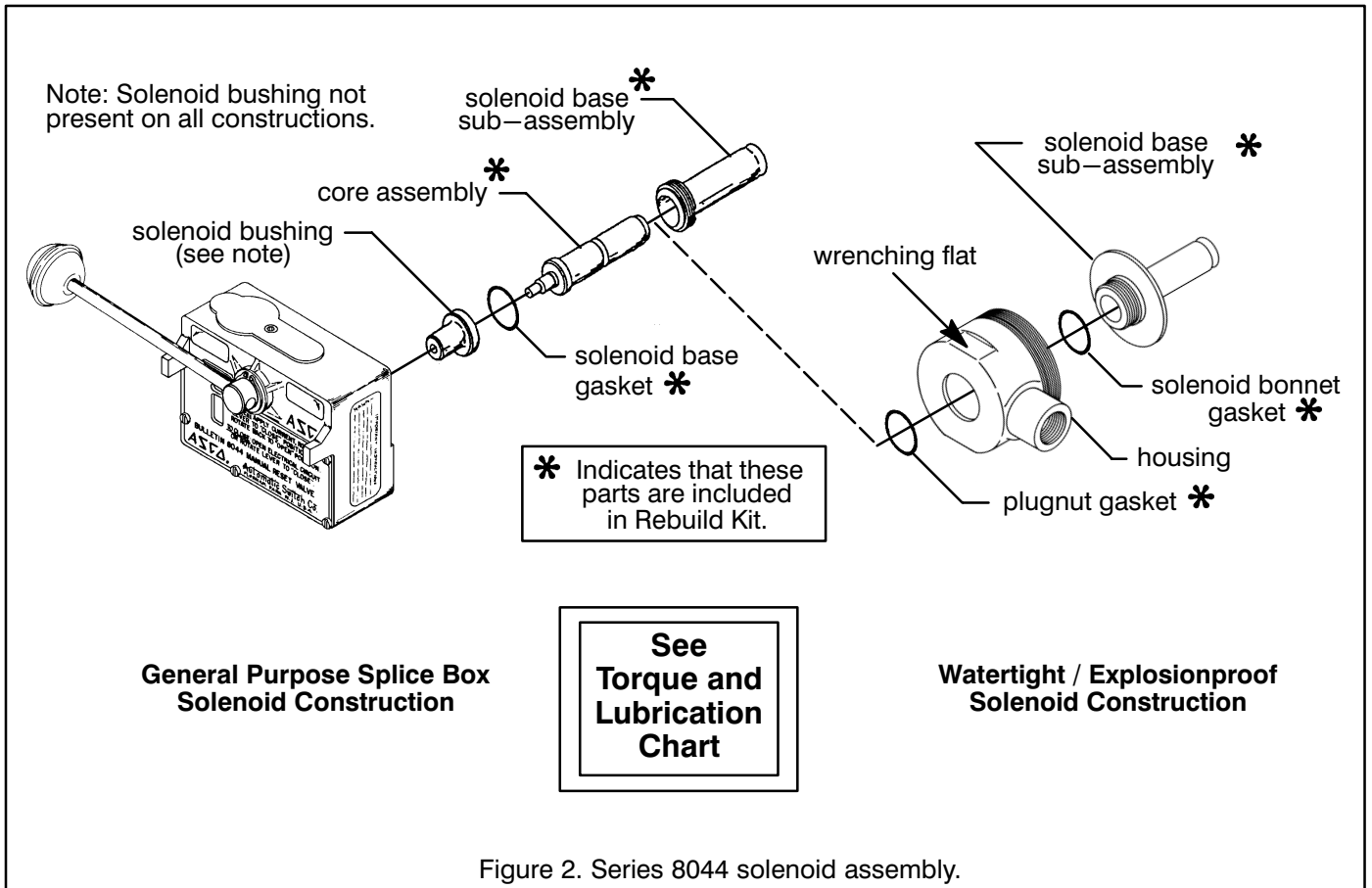


Figure 2. Series 8044 solenoid assembly.

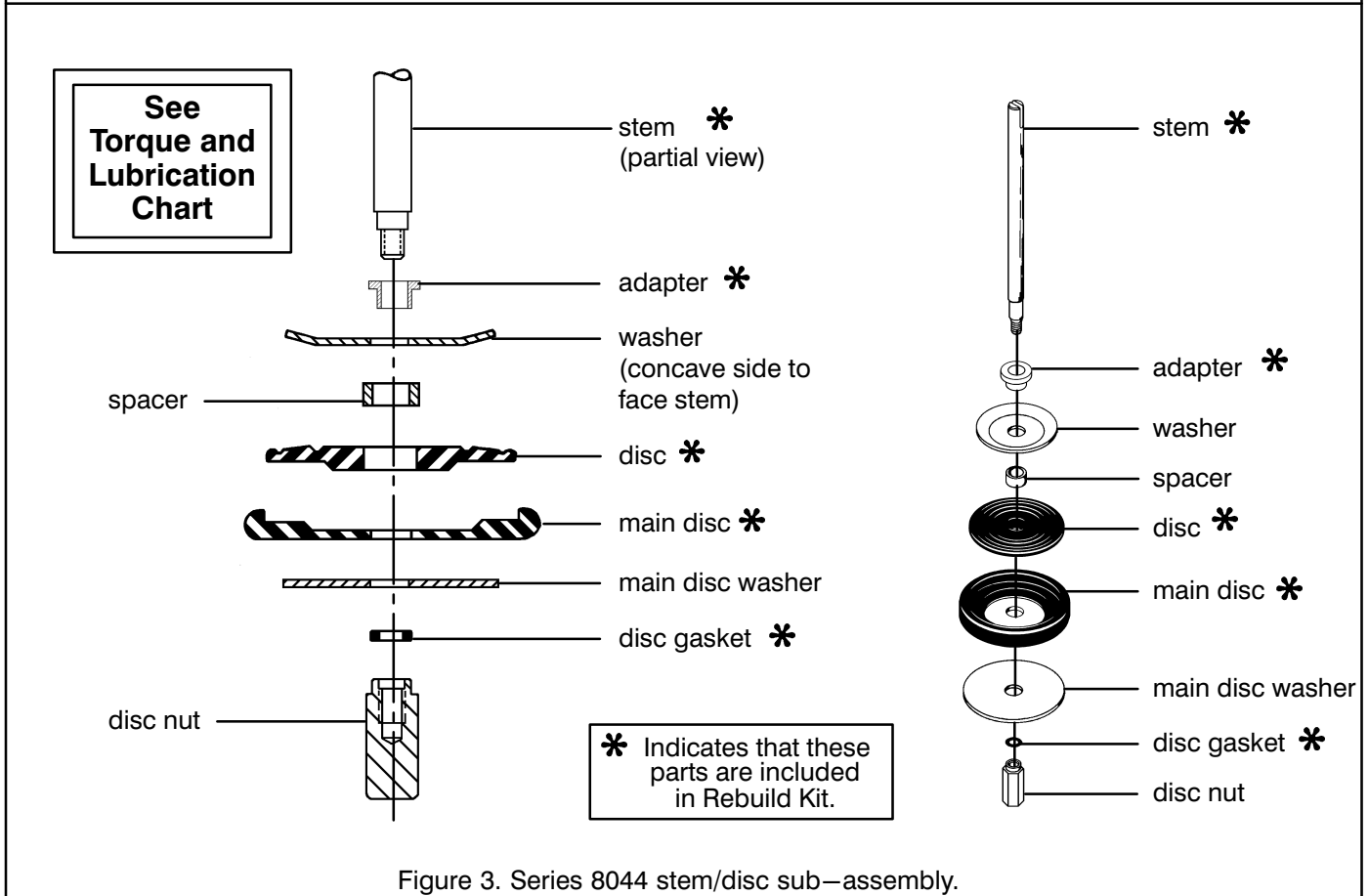


Figure 3. Series 8044 stem/disc sub-assembly.

⚠ CAUTION
Do not loosen or remove.
Set screw has been
preset at factory.

***** Indicates that these
 parts are included
 in Rebuild Kit.

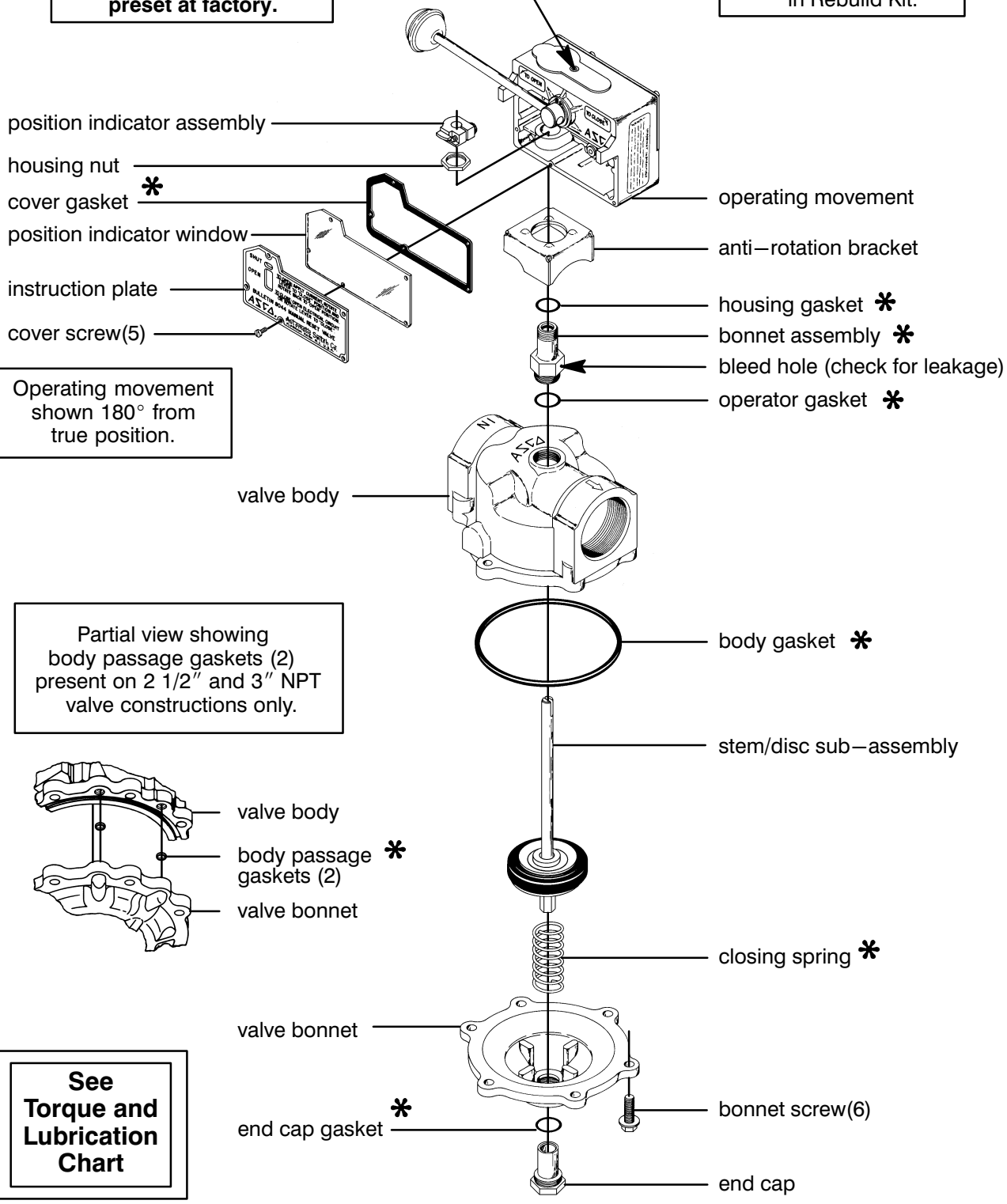


Figure 4. Series 8044 valve body and operating movement without solenoid.