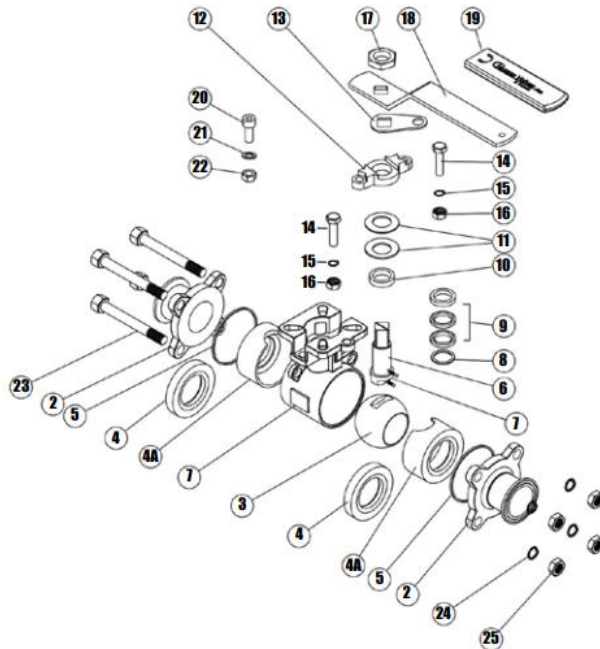


## SERIES 36 TUBE FULL PORT 3-PIECE BALL VALVE INSTALLATION, OPERATION, AND MAINTENANCE INSTRUCTIONS

PART NO	PART NAME	QTY	MATERIAL
1	BODY	1	316 STAINLESS STEEL ASTM A351
2	END CAP	2	316 STAINLESS STEEL CF8M
3	BALL	1	316 STAINLESS STEEL
4	SEAT	2	TFM/PTFE
4A			
5	BODY SEAL	2	PTFE
6	STEM	1	304 STAINLESS STEEL
7	ANTI-STATIC DEVICE	2	316 STAINLESS STEEL
8	THRUST WASHER	1	PTFE
9	STEM PACKING	3	TFM 1600
10	GLAND PACKING	1	304 STAINLESS STEEL
11	BELLEVILLE WASHER	2	304 STAINLESS STEEL
12	GLAND FLANGE	1	304 STAINLESS STEEL
13	TRAVEL STOPLOCKING DEVICE	1	304 STAINLESS STEEL
14	GLAND FLANGE BOLT	2	304 STAINLESS STEEL
15	SPRING WASHER	2	304 STAINLESS STEEL
16	GLAND BOLT NUT	2	304 STAINLESS STEEL
17	HANDLE NUT	1	304 STAINLESS STEEL
18	HANDLE	1	304 STAINLESS STEEL
19	HANDLE SLEEVE	1	PVC
20	BOLT STOPPER	1	304 STAINLESS STEEL
21	WASHER	1	304 STAINLESS STEEL
22	BOLT STOPPER NUT	1	304 STAINLESS STEEL
23	BODY BOLTS	4 6	304 STAINLESS STEEL
24	SPRING WASHER	4 6	304 STAINLESS STEEL
25	BODY BOLT NUT	4 6	304 STAINLESS STEEL



### SAFETY INSTRUCTIONS:

1. Read the Installation, Operation and Maintenance Manual before using the valve.
2. Chicago Valves cannot anticipate all the situations a user may encounter while installing and using the Chicago Valve. The user must know and follow all applicable industry specifications on the safe installation and use of these valves. Only qualified personnel or technicians who are trained for maintenance work and have read the instructions are to assemble and disassemble the valve. Misapplication of the product may result in injuries or property damage.

## **INSTALLATION:**

- Before Installing the valves, the interconnecting pipes or fittings must be fully aligned. Make sure tri-clamp ends and seals are clean and undamaged.
- These valves may be installed in any position using good pipe fitting practices. Hygienic clamp tube fittings in accordance with ASME BPE 2022 dimensions and tolerances.

## **MANUAL OPERATION:**

- The valve is opened and closed by turning the handle  $\frac{1}{4}$  turn (90°). Turning the handle clockwise closes the valve (handle perpendicular to the pipeline). Turning the handle counterclockwise opens the valve (handle parallel to pipeline).

## **AUTOMATED OPERATION:**

- Valves with Actuators should be checked for alignment of the actuator to the valve. Angular or parallel misalignment may result in high operational torque, and potential damage to the stem seals or stem.

## **MAINTENANCE:**

----WARNING----

**Do not attempt to perform  
maintenance on valves in  
pressurized lines.**

## **STEM SEAL ADJUSTMENT:**

The stem nut can be tightened to compress the stem packing without removing any actuation devices. This adjustment should not be required frequently because of the live loading of the stem packing by Belleville springs between the gland flange and the metal Gland Packing ring.

If the gland flange turns very easily, the Belleville springs are likely not compressed. Tighten the gland flange nuts until it feels snug, and the belleville springs appear flat.

If these adjustments do not eliminate the stem seal leakage, then replace the stem packing.

## **SEAL REPLACEMENT:**

Turn valve to the open position and remove handle nut, lock washer, and handle. Loosen and remove packing gland from valve body.

Loosen and remove body bolts, and remove body center section assembly, placing it on a suitable work surface. Remove seats and body seals.

Using the handle if necessary, turn ball to the closed position, and remove ball from body with a rolling motion away from the stem. Handle ball with care to avoid damaging the surface.

Push downwards on the top of the stem to slide it through the stem seals and remove stem from inside body bore. Remove thrust washer from stem, or from body bore if retained in body. Remove stem seals using a packing hook or sharp object.

## **REASSEMBLY:**

1. Make sure all valve components are clean and undamaged before assembly.
2. Install thrust washer on stem and slide down to shoulder. Insert stem into body and upwards through the stem bore until the shoulder is seated in the bore.
3. Slide stem seal over stem top, and into stem bore in body. Take care not to damage seal on stem threads. Install packing gland and tighten finger tight.
4. Place stem in the "closed" position and install the ball carefully by rolling the stem tang into the ball slot.
5. Install seats in the body at both ends, making sure the concave face fits against the ball, and press the body seals into the grooves in the body faces.
6. Turn ball to the "open" position and replace between the end caps in line. Slide body hex bolts through end caps and body guide holes, and secure with lock washers and hex nuts. Tighten snugly.
7. Tighten packing gland to the torque value given in the table below, and replace the handle, lock washer, and handle nut.
8. Tighten the body bolting to the torque values given in the table below, using a cross or star pattern.

## **Torque Tables**

**Gland Nut Tightening Torque**

Valve Size	Torque(in-lb)
1/2"	45
3/4"	45
1"	45
1-1/2"	65
2"	65
2-1/2"	110
3"	110
4"	110

### Body Bolt Tightening Torque for Ser 36(in-lb)

Valve Size	Bolt Diameter	1st Pass	Final Pass
1/2"	M6	70	100
3/4"	M8	90	140
1"	M8	90	140
1-1/2"	M10	220	280
2"	M10	220	280
2-1/2"	M12	350	400
3"	M16	350	400
4"	M16	490	530