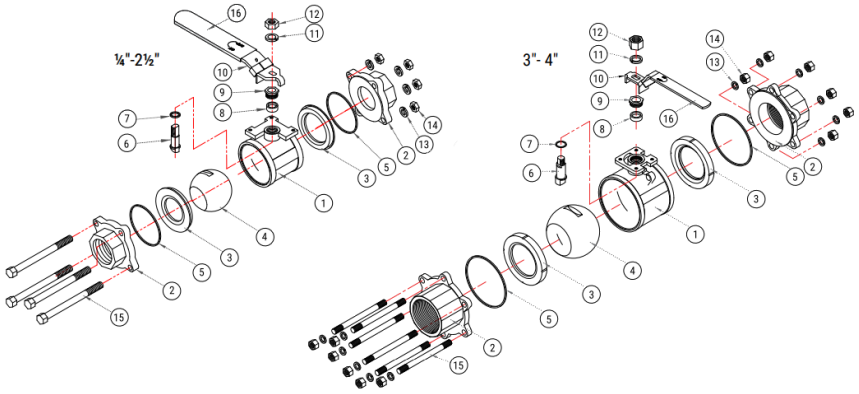
INSTALLATION, OPERATION AND MAINTENANCE FOR SHARPE® SERIES 5303 3-PIECE FULL PORT BALL VALVE

Parts & Materials

No.	Part Name	Qty	Material
1	Body	1	Carbon Steel ASTM A216 WCB or 316 Stainless Steel ASTM A351 CF8M
2	End Piece	2	Carbon Steel ASTM A216 WCB or 316 Stainless Steel ASTM A351 CF8M
3	Seat	2	RTFE
4	Ball	1	316 Stainless Steel
5	Body Seals	2	PTFE
6	Stem	1	316 Stainless Steel
7	Thrust Bearing	1	PTFE
8	Stem Packing	1	PTFE
9	Gland Packing	1	300 Series Stainless Steel
10	Handle	1	300 Series Stainless Steel
11	Handle Washer	1	300 Series Stainless Steel
12	Handle Nut	1	300 Series Stainless Steel
13	Lock Washer	4/12	300 Series Stainless Steel
14	Nut	4/12	300 Series Stainless Steel
15	Bolts	4/6	300 Series Stainless Steel
16	Hand Sleeve	1	PVC



GENERAL

- The following instructions only refer to Sharpe® standard valves as described in this document.
- Keep the protective covering in place until the moment of installation. Valve performance depends upon the prevention of damage to the ball surface. Upon removal of the cover, make sure that the valve is completely open and free of obstructions.
- When shipped, valves may contain a silicon-based lubricant which aids in the assembly of the valve however valves can be ordered clean and free of lubricants.
- Certain ferrous valves are phosphate coated, and oil dipped during the course of manufacture.

SAFETY PRECAUTIONS

- *Before removing valve from pipeline*: media flowing through a valve may be corrosive, toxic, flammable, or of a contaminant nature. Where there is evidence of harmful fluids having flowed through the valve, the utmost care must be taken. It is suggested that at least the following safety precautions should be taken when handling the valves. More precautions may be required, refer to the media's Safety Data Sheet for additional precautions.
    1. Always wear eye shields
    2. Always wear gloves and overalls
    3. Wear protective footwear
    4. Wear protective headgear
    5. Ensure that running water is easily available
    6. Have suitable fire extinguisher ready if the media is flammable
- By checking line gauges, ensure that no pressure exists on either the upstream or the downstream sides of the valve.
- Ensure that any media is released by operating the valve slowly to the half-open position.
- Ideally, the valve should be decontaminated when the ball is in the half-open position and then left fully open.
- These valves, when installed, have body connectors which form an integral part of the pipeline, and the valve cannot be removed from the pipeline without being dismantled.

INSTALLATION:

These valves may be installed in the pipeline in any orientation or position, using good piping practice. For threaded end valves, use a suitable joint compound or PTFE tape on pipe threads for ease of fit-up.

Welding End Valves:

Valves with weld type ends must be partially disassembled by removing the ends from the center section to prevent heat damage during welding of the soft plastic seats and seals in the valve. Prior to disassembly, the valve may be temporarily fitted in line, and the ends tack-welded to the piping for alignment purposes.

Removing the Ends:

With the valve in the open position, remove the body hex nuts, lock washers, and the body hex bolts. Carefully lift out the center section, making sure that the seat/seals are held in position.

Place the center section in a clean area where it will not be damaged and complete the welding of the end caps to the piping.

When the welds are cool to touch, install the new seals that were supplied with valve and reinstall the center section between the body end caps. Re-install the body bolting and tighten the bolts according to the "Assembly" instructions on the following page.

OPERATION:

These are quarter-turn (90° rotation) ball valves and are fitted with a lockable handle for manual operation. The handles also contain travel stop tabs at the open and closed positions. To open the valve, lift the latch/lock slide up, and turn the handle counterclockwise. To close the valve, lift the latch/lock slide and turn the handle clockwise.

MAINTENANCE:

WARNING - DO NOT ATTEMPT TO PERFORM MAINTENANCE ON VALVES IN PRESSURIZED LINES.

Stem Seal Adjustment:

- If leakage is evident from the stem packing area, tighten the packing gland (below the handle) 1/8 turn. If the leakage persists, repeat tightening. If leakage cannot be corrected by tightening the gland, replacement of the stem seals or valve may be necessary.

Seat & Seal Replacement:

- Turn valve to the open position and remove handle nut (12), handle washer (11), and handle (10) and loosen and remove packing gland (9) from the valve body.
- Loosen and remove body bolt nut (14) and then remove the lock washer (13) and body bolts (15). Then remove body center section assembly, placing it on a clean suitable work surface.
- Remove seats (3) and body seals (5) from body (1). Then using the handle (10) if necessary, turn ball (4) to the closed position, and carefully remove it from body (1) with a rolling motion away from the stem (6). Use caution to avoid damaging the surface.
- Gently push downwards on the top of the stem (6) to slide it out through the stem packing (8) and remove the stem (6) from inside the body bore. Remove thrust bearing (7) from the stem (6), or from body bore if retained in the body.
- Remove the stem packing (8) from the body (1) making sure that any tools used do not damage the selling surface of the packing pocket.
- Sharpe recommends that all soft parts, including seats, be replaced with new parts, which can be ordered in kit form.

REASSEMBLY:

Make sure to only use Sharpe® factory parts and all components are clean and undamaged before reassembly.

A light application of thread lubricant on bolt and gland threads is recommended to prevent galling if the application allows

- Install thrust bearing (7) on the stem (6) down to the shoulder. Insert stem (6) into body (1) and upwards through the stem bore until the shoulder is seated in the bore.
- Slide the stem packing (8) over the stem top, and into stem bore in the body. Take care not to damage the seal on stem threads. Install the packing gland (9) and tighten to finger tight.
- Rotate the stem (6) to the “closed” position and install the ball (4) carefully by rolling the stem tang into the ball slot.
- Install the seats (3) and body seals (5) in the body at each end, making sure the concave face fits against the ball, and press the body seal edge into the groove in the body face.
- Turn the ball (4) to the “open” position and replace the center section between the end caps in line. Slide body bolts (15) through end caps (2) and body guide holes, and secure with lock washers (13) and hex nuts (14). Tighten snugly.
- Tighten the packing gland (9) to the torque value given in Table 1 below, and replace the handle (10), handle washer (11), and handle nut (12).
- Finally tighten the body bolting to the torque values given in Table 1 below, using a cross or star pattern to tighten evenly.

Table 1 – Assembly Torques

Valve Size	Gland Torque (in-lb)	Body Bolt Torque (in-lb)
¼” – ⅜”	80-110	60-80
½”	80-110	160-180
¾” – 1”	110-140	160-180
1¼”	230-270	310-360
1½” - 2”	270-350	310-360
2½”	350-400	450-500
3”	700-750	1150-1300
4”	750-800	1150-1300

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