



Valves, Automation & Controls



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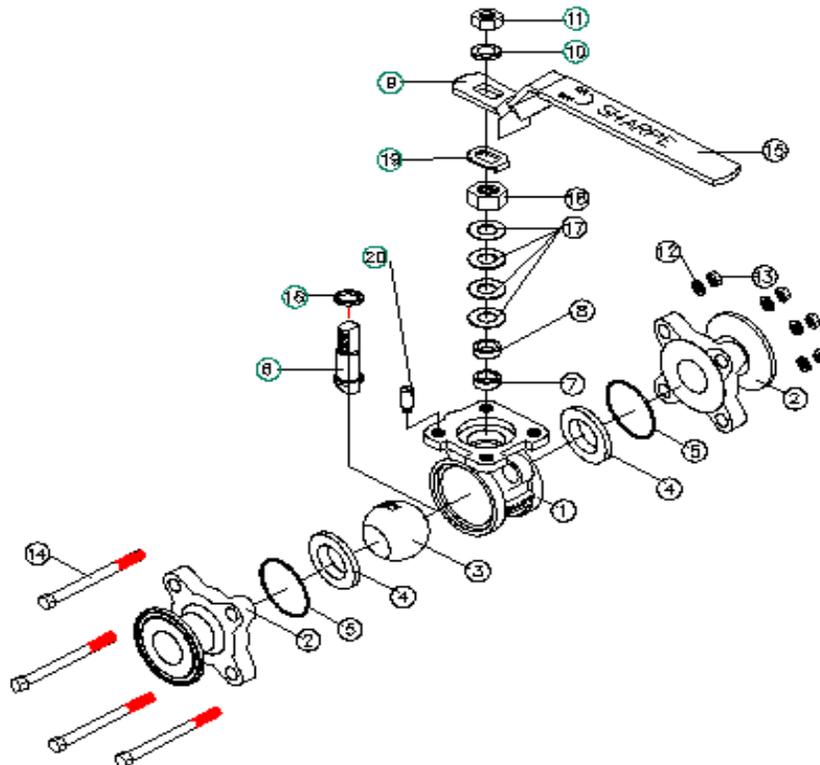
2701 Busse Road Elk Grove Village, IL 60007 Tel. 708-562-9221

Installation, Operation, and Maintenance Manual

Series N66 Tube Full Port 3 Piece Ball Valves

Sizes 1" – 4"

NO	PART NAME	MATERIAL	QTY
1	BODY	CF8M/CF3M	1
2	END CAP	CF8M/CF3M	2
3	BALL	316L	1
4	SEATS	TFM	2
5	BODY GASKET	PTFE	2
6	STEM	316L	1
7	GLAND PACKING	PTFE	1
8	GLAND	304	1
9	HANDEL	304	1
10	STEM WASHER	304	1
11	STEM NUT	304	1
12	BOLTS WASHER	304	4,12
13	BOLTS NUT	316	4,12
14	BOLTS	304	4,8
15	COVER	P.V.C	1
16	THRUST WASHER	PTFE	1
17	BELLEVLILLE	301	4
18	GLAND NUT	304	1
19	LOCK TAB	304	1
20	STOP PIN	304	1





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SAFETY INSTRUCTIONS:

1. Read this Installation, Operation and Maintenance Manual before using the valve.
2. Sharpe Valves cannot anticipate all the situations a user may encounter while installing and using the Sharpe 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:

1. Before installing the valves, the interconnecting pipes or fittings must be fully aligned. Make sure tri-clamp ends and seals are clean and are undamaged.
2. These valves may be installed in any position using good pipe fitting practices. Hygienic clamp tube fittings in accordance with ASME BPE 2009 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 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.

STEM SEAL ADJUSTMENT:

Stem seal leakage may be corrected without disassembly. If leakage is evident in stem packing area, tighten the adjusting nut $\frac{1}{4}$ turn. If leakage persists, repeat above. Replacement of stem seals is indicated if the leak is still apparent after $\frac{1}{2}$ turn.

DISASSEMBLY:

-CAUTION-

If the Valve has been used to control hazardous media, it must be decontaminated before disassembly.



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---WARNING---

Do not attempt to repair or partially disassemble a valve while it is in line and under pressure. Isolate the line, de-pressurized, and remove valve prior to performing maintenance.

1. Turn valve to open position and remove the handle nut, lock washer, and handle.
2. Remove lock tab, stem nut, Belleville springs, and gland ring.
3. Loosen the body bolts, remove the end caps, body bolts, seals, and seats.
4. To take out the ball, rotate stem so ball is in fully closed position. Carefully lift ball off stem tang and from body with a "rolling" motion. Note: Extreme caution should be taken to avoid damage to the ball.
5. Push the stem downwards and slide it out from the body. The thrust bearing should come out with the stem. Then remove the stem packing.

VISUAL INSPECTION:

1. Clean and inspect all metal parts. Replace the ball and/or stem if the seating or sealing surfaces have been damaged, worn, or corroded.
2. Stem seals, seats, and body seal must be replaced whenever the valve is disassembled to avoid seal leakage and ensure proper performance. Use only Sharpe Valves replacement parts.

ASSEMBLY:

Note: The valve may be assembled and operated dry where no lubricants are allowed in the system; however, a light lubrication of mating parts will aid in assembly and reduce initial operating torque. Lubricant used must be compatible with the intended line fluid.

1. Install thrust bearing on stem and slide the stem up through the body.
2. Install new stem seals, gland ring, and belleville springs. Install gland nut and tighten using the torque values given in Table 1.



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Table 1 - Gland Nut Torques

GLAND NUT TIGHTENING TORQUE

Valve Size	Torque (in-lb)
1/2	35
3/4	80
1	80
1 1/2	115
2	115
2 1/2	250
3	250
4	250

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3. Install the lock tab, the handle, washer and handle nut. Make sure the handle aligns with the flow bore through the valve.
4. Turn the handle to the CLOSED position. Line up the ball slot with the stem tang and install the ball into position on the stem tang. Turn the handle to the OPEN position to hold the ball in place.
5. Install the seats with the spherical curvature facing the ball.
6. Place new body seal into the groove in valve body.
7. Install the end caps and body bolts, washers and body nuts. Tighten the bolts to the torque below.

BODY BOLTS TIGHTENING TORQUE FOR N66 (in-lb)

Valve Size	Bolt Diameter	Ist Pass	Final Pass
1/2	M6	40	80
3/4	M8	100	160
1	M8	100	160
1 1/2	M10	200	345
2	M10	200	345
2 1/2	M12	210	345
3	M16	340	460
4	M16	340	460

8. Cycle the valve open and close several times slowly to ensure that the operation is smooth and free of binding or sticking.
9. Pressure test valve, if possible, before reinstalling in pipeline.



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TESTING:

---WARNING---

Valve must be properly secured during testing. Fixture flanges for testing should be the same rating as the valves.

- A. Secure valve to a test fixture with a suitable gasket. Orient the valve so the seat to be tested is facing up.
- B. Apply 80 to 100 psig air into the end of the closed valve which is attached to the fixture. Pour water into the upper port to cover the ball and visually check for bubbles. If bubbles are coming out, cycle the valve several times and recheck. To check for leakage in the other port, reverse the valve and repeat the process.
- C. In the event of stem seal leakage, adjust as described under paragraph, "Stem Seal Adjustment".