

INSTALLATION & MAINTENANCE MANUAL

SERIES 39M 3-WAY BALL VALVE L OR T PORT

1. USE:

- 1.1 Maximum results and long life of the valves can be maintained under normal working conditions and according with pressure/temperature rating and corrosion data chart.

2. MANUAL OPERATION:

- 2.1 To change flow pattern of the valve, turn the handle 1/4" (90 degree)
- 2.2 Both T port and L port are available
- 2.3 Both Full port and Reduced Port are available.

3. AUTOMATION OPERATION

- 3.1 Direct Mount of Pneumatic or Electric Actuator to Valves, No Brackets and Couplings are required.

4. GENERAL INFORMATION FOR ON-SITE INSTALLATION:

- 4.1 The valve may be fitted in any position on the pipeline
- 4.2 Before installation of the valves, the pipe line must be flushed clean of dirt, burrs and welding residues, or the seats and ball surface will be damaged.
- 4.3 The pipe must be free from tension.
- 4.4 When rebuilding, a standard repair kit designated for each size and style valve is available, each repair kit to contain all the soft parts.
- 4.5 When ordering, be sure to specify size, valve code, valve seat, seal and stem packing materials. Optional components such as ball, stem and handle are also available.
- 4.6 After installation, cycle valve several times before putting into service.

5. DISASSEMBLING AND CLEANING THE VALVE:

Caution: Ball valve can trap fluids in the ball cavity when closed.

- 5.1 Before disassembly, be sure to discharge any hazardous media that might be entrapped in any valve cavity.
It is recommended that the following steps are taken for safe removal and reassembly.
 - A. Relief the line pressure.
 - B. All persons involved in the removal and disassembly of the valve should wear the proper protective clothing, such as face shield, gloves, etc.

6. REPLACING THE THRUST WASHER, PACKING, AND SEATS

- 6.1 Before replacing the thrust washer and packing, the pipeline must be de-pressurized.
- 6.2 Stem leakage may be corrected without replacing the stem packing. Tighten the stem gland nut until leakage stops, if leakage continues or valve's operating torque becomes excessive, the stem seal is worn and must be replaced.
- 6.3 Remove valve from pipeline.
- 6.4 Remove end caps, body seal, seats, and ball.
- 6.5 Remove stem nut, gland, stop, etc. and push stem into valve cavity. Remove stem seats and thrust washer.

7. ASSEMBLY

- 7.1 All Components have been cleaned, inspected, and replaced as necessary, the valve can be rebuilt using the factory repair kit recommended.

- 7.2 Put new Stem Seal and O-ring on stem, insert the stem through body cavity into stem hole, install ball in the position. Assemble new stem packing, gland, Belleville washer, and stem nut. Tighten stem nut so that stem will feel snug and firm. **DO NOT OVERTIGHTEN.**
- 7.3 Assemble the back seat into body , insert body gasket on seal surface. Assemble second, third, and fourth seats into cavity of end caps and insert the same into body.
- 7.4 Apply wrench on the hexagonal ends of the valve only. Tightening using the valve body or handle can seriously damage the valve.

BREAK AWAY TORQUE IN IN-LB. AND NM

Valve Size	Full Port		Reduced Port	
	In-Lb	Nm	In-Lb	Nm
1/4"	80	9	80	9
3/8"	80	9	80	9
1/2"	106	12	80	9
3/4"	150	17	106	12
1"	319	36	150	17
1 1/4"	372	42	319	36
1 1/2"	451	51	372	42
2"	743	84	451	51

30% safety factor included.

Torque of Stem nut(Full Bore)

(Red. Bore)

SIZE	In-lbs	Nm	In-lbs	Nm
1/4"	61	6.9	61	6.9
3/8"	61	6.9	61	6.9
1/2"	69	7.8	61	6.9
3/4"	95	10.8	69	7.8
1"	95	10.8	95	10.8
1.1/4"	139	15.7	95	10.8
1.1/2"	165	18.6	139	15.7
2"	165	18.6	165	18.6

Media and Service Factors:

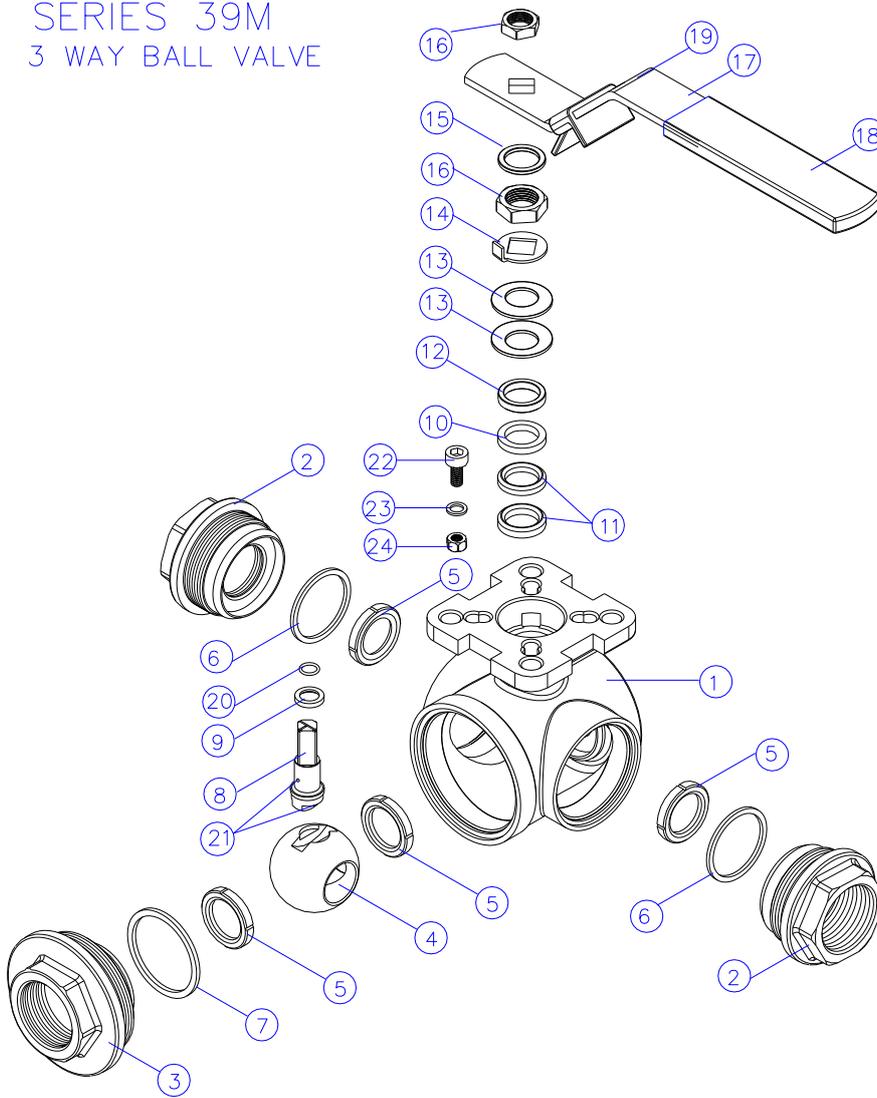
Media Factors	Multiplier
Clean, particle free, non-lubricating (water, alcohol, etc)	1.00
Clean, particle free, non-lubricating (oils, hydraulic fluid, etc)	0.80
Slurries or heavily corroded and contaminated systems	2.00
Gas or saturated steam, clean and wet	1.00
Gas or superheated steam, clean and dry	1.30
Gas, dirty unfiltered e.g. natural gas, Chlorine	1.50

Service Factors	Multiplier
Simple On and Off Operations	1.00
Throttling	1.20
Positioner Control	1.50
Once per day Operations	1.20
Once every two days or a "Plant Critical" Operation	1.50

Torque Determination:

$$\text{Basic Torque} * \text{Media Factor} * \text{Service Factor} = \text{Sizing Torque}$$

SERIES 39M
3 WAY BALL VALVE



MATERIALS LIST

NO.	PART NAME	QTY	MATERIAL
1	BODY	1	CF8M
2	END CAP-A	2	CF8M
3	END CAP-B	1	CF8M
4	BALL	1	SS316
5	SEAT	4	RTFE
6	JOINT GASKET-A	2	PTFE
7	JOINT GASKET-B	1	PTFE
8	STEM	1	SS316
9	STEM SEAL	1	RTFE
10	STEM PACKING	1	25% GLASS FIBER FILLED PTFE
11	STEM PACKING	@	PTFE
12	GLAND	1	SS304
13	BELLEVILLE WASHER	2	SS301
14	LOCK SADDLE	1	SS304
15	STEM WASHER	1	SS304
16	STEM NUT	2	SS304
17	HANDLE	1	SS304
18	HANDLE SLEEVE	1	VINYL
19	LOCKING DEVICE	1	SS304
20	O-RING	1	VITON
21	Anti-static Device	2	SS316
22	STOP PIN	1	SS304
23	WASHER	1	SS304
24	PIN NUT	1	SS304

PS: @ For 1/4" to 3/8"-1pcs
 @ For 1/2" to 1-1/4"-2pcs
 @ For 1-1/2" to 2"-3pcs