

1. USE:

- 1.1. Maximum results and long life of Series 77 Ball Valves can be maintained under normal working conditions reflected within the pressure/temperature ratings and corrosion data chart.

2. MANUAL OPERATION:

- 2.1. The opening and closing of the valve is done by turning the handle a ¼ turn (90°).
 - A. Valve in OPEN position – the handle is in line with the valve body and piping.
 - B. Valve in CLOSED position – the handle is perpendicular to the valve body and piping.

3. DISASSEMBLY & CLEANING:

CAUTION: NON CAVITY FILLED VALVES CAN TRAP FLUIDS IN THE BALL CAVITY WHEN CLOSED.

- 3.1. If the valve has been used to control hazardous media, it must be decontaminated before disassembly.
 - A. Relieve the line pressure.
 - B. Place valve in half-open position and flush the line to remove any hazardous material from the valve.
 - C. Turn handle back to the fully open position.
 - D. Loosen all bolts on the valve, but do not remove the nuts.
 - E. Remove the bolt on the opposite side of the bolt holding the center section of the main valve body.
 - F. Swing out center body section.
 - G. Turn handle ¼ turn to close valve.
 - H. Press on ball with fingers on one side to remove ball and seats.
 - I. Clean accordingly.
 - J. Re-assemble valve in reverse order.
 - K. See bolt tightening specifications for bolt torque values required.

Note: Valve can also be CIP/SIP cleaned, but requires the valve to be open and closed several times during this process.

CAUTION: IN NON CAVITY FILLED VALVES, THERE IS A CHANCE OF ENTRAPMENT OF CLEANING FLUID WITHIN THE BODY CAVITY.

4. GENERAL INFORMATION FOR INSTALLATION:

- 4.1. The valve can be installed in any position on the pipeline.
- 4.2. Prior to valve installation, the piping must be flushed clean of dirt, burrs, and welding residues or the seats and ball surface may be damaged.
- 4.3. The piping must be free from tension.

5. INSTALLATION OF CLAMP VALVES:

- 5.1. Use the proper size and type clamp/gasket combination to achieve the proper pressure range and performance for the application.
- 5.2. Place gasket into groove on valve end connection.
- 5.3. Mate the end connections with gasket with corresponding line connections and install desired type clamps.
- 5.4. Tighten clamps accordingly to manufacturer specifications



6. INSTALLATION OF EXTENDED TUBE O.D. VALVES:

- 6.1. Turn handle 90° to close valve.
- 6.2. Align valve end within orbital welder head with desired tube to be welded to.
- 6.3. Weld valve in line, observing proper welder settings.

CAUTION: EXCESSIVE WELDER AMPERAGE WILL CREATE A LARGE HEAT AFFECTED ZONE WHICH MAY CAUSE DAMAGE TO INTERNAL SEALS. IF DESIRED, VALVE CAN BE DISASSEMBLED FOR WELDING. IF THIS OPTION IS USED, REFER TO THE BOLT TIGHT SPECIFICATIONS FOR PROPER BOLT TORQUE.

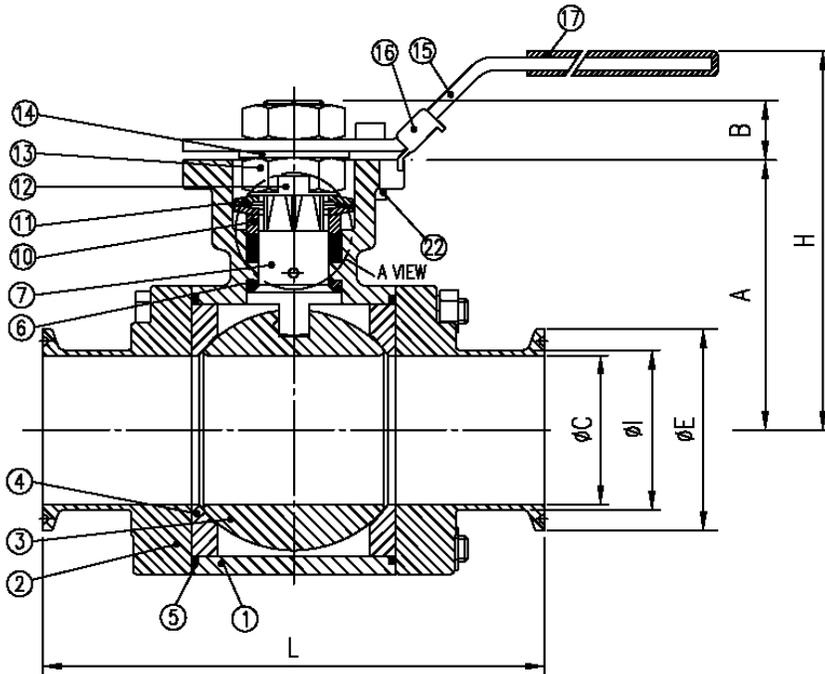
- 6.4. Turn handle 90° to open valve for weld inspection.
- 6.5. If weld is acceptable, close valve and repeat steps 6.1 – 6.3.

7. BOLT TIGHTENING SPECIFICATIONS:

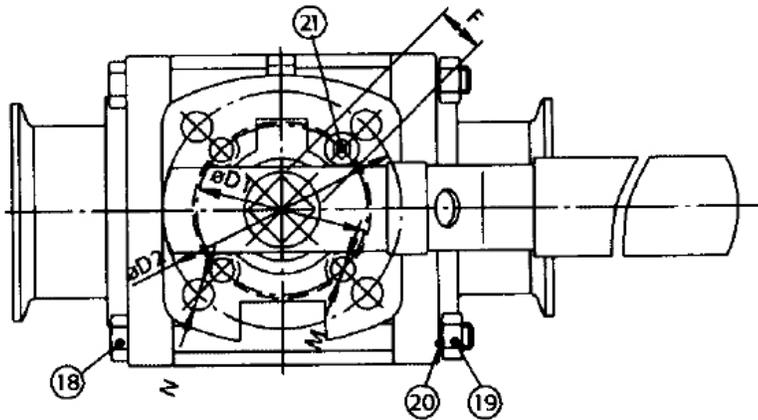
- 7.1. Valve body bolts should be tightened evenly in a criss-cross type pattern using a torque wrench taking care that the internal alignment of the ends and the ball are correct.

The following values are in lbs.

Valve Size	Bolt Torque
1/2"	27
3/4"	62
1"	106
1 1/2"	177
2"	204
2 1/2"	275
3"	320
4"	530



No.	Part Name	Qty.	Material
1	Body	1	CF3M
2	End Cap	2	CF3M
3	Ball	1	SS316L
4	Seat	2	PTFE/TFM
5	Joint Gasket	2	PTFE/TFM
6	Stem Seal	1	PTFE
7	Stem	1	SS316L
8	Gland Packing	*	PTFE
9	Gland Packing	1	‡
10	Gland Bush	1	SS304
11	Belleville Washer	2	SS301
12	Stop Washer	1	SS304
13	Stem Nut	2	SS304
14	Stem Washer	1	SS304
15	Handle	1	SS304
16	Locking Device	1	SS304
17	Handle Sleeve	1	Vinyl
18	Bolt	#	SS304
19	Bolt Nut	§	SS304
20	Bolt Washer	§	SS304
21	Stop Pin	1	SS304
22	Pin Nut	1	SS304



Dimension (IN)

Size	A	B	C dia	D1 dia	D2 dia	E dia	F	G dia.	I dia.	H	L	LI	M	N	ISO 521 I
1/2"	1.66	0.34	0.37	1.42	1.65	0.99	0.35	N/A	0.50	3.03	3.51	5.50	0.24	0.28	F03/F04
3/4"	1.89	0.33	0.62	1.42	1.65	0.99	0.35	N/A	0.75	3.27	4.00	5.75	0.24	0.28	F03/F04
1"	2.23	0.45	0.87	1.64	1.97	1.98	0.43	1.71	1.00	3.74	4.51	6.25	0.24	0.28	F04/F05
1-1/2"	3.05	0.55	1.37	1.97	2.76	1.99	0.55	1.71	1.50	5.00	5.52	7.50	0.28	0.35	F05/F07
2"	3.35	0.55	1.87	1.97	2.76	2.52	0.55	2.20	2.00	5.28	6.26	8.50	0.28	0.35	F05/F07
2-1/2"	4.28	0.66	2.37	2.76	4.02	3.05	0.67	2.78	2.50	6.54	6.85	9.75	0.39	0.47	F07/F10
3"	4.63	0.70	2.87	2.76	4.02	3.58	0.67	3.28	3.00	6.93	7.61	10.50	0.39	0.47	F07/F10
4"	5.22	0.66	3.83	2.76	4.02	4.68	0.67	4.34	4.00	7.48	8.90	12.50	0.39	0.47	F07/F10