

**1. USE:**

1.1 Life of valve can be maximized if the valve is used within the rated range, in accordance with pressure, temperature, and corrosion data.

**2. MANUAL OPERATION:**

- 2.1 To open or close the valve, turn the handle ¼ turn (90 degrees).
  - A. Valve in Open Position – the handle is in parallel (in-line) with the valve or pipeline.
  - B. Valve in Closed Position – the handle is perpendicular (crossed) with the valve or pipeline.

**3. DISASSEMBLING & CLEANING THE VALVE:**

- 3.1 Ball valves can trap fluids in ball cavity when it is in closed position.
- 3.2 If the valve has been used in 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 valve.
  - C. All persons involved in the removal and disassembly of the valve should wear the proper protective clothing, such as face shield, glove, apron, etc.

**4. REPLACING THE THRUST WASHER, PACKING, AND SEATS**

- 4.1 Before replacing the stem seal and the packing, the pipeline must be de-pressurized.
- 4.2 Take the valve out of the pipeline.
- 4.3 Place the valve in its' fully open position.
- 4.4 Unthread the end cap.
- 4.5 Close the valve and remove the seats, joint gasket, and ball.
- 4.6 Remove the valve stem nut, handle, gland nut and remove the valve stem through the body cavity.
- 4.7 Remove the stem seal from the stem cavity or stem and remove the o-ring from the stem.
- 4.8 Examine all metallic sealing surfaces such as ball, stem and end cap for damage, replace the ball or stem if they are excessively damaged.

**5. RE-ASSEMBLING**

Having assured that all critical surfaces and components have been inspected, cleaned and or replaced, reassembly can begin.

- 5.1 Place new stem seal and o-ring on the stem and insert the stem.
- 5.2 Install new gland packing, bushing, gland bush, belleville washer and stem nut.
- 5.3 Tighten stem nut to torque specification in Table 1.
- 5.4 Lightly lubricate seats and body seals using a lubricant that is compatible with the process.
- 5.5 Re-install end cap.

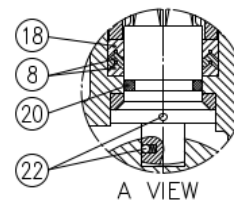
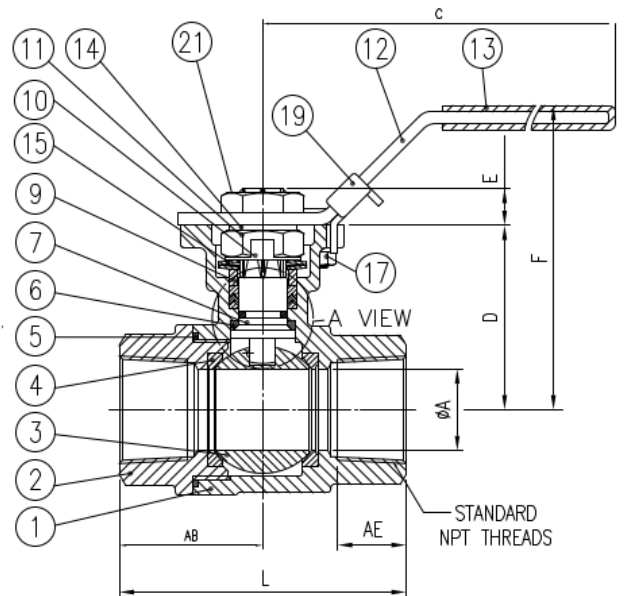
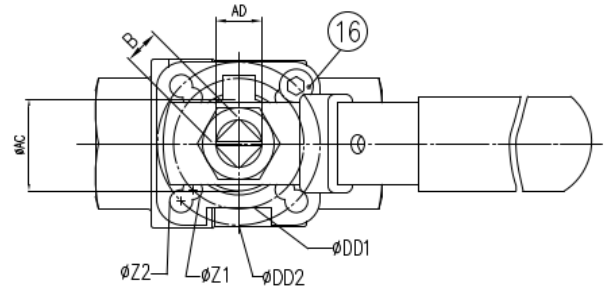
**Table 1**

Valve Size	Stem Nut Torque (In-Lbs.)
½" ~ ¾"	90
1"	120
1-1/2"	225
2" ~ 2-1/2"	310
3"	400

Installation & Maintenance Manual

**MATERIAL LIST**

NO.	PART NAME	QTY	MATERIAL	REPAIR KIT
1	BODY	1	ASTM A351 GRADE CF8M	
2	END CAP	1	ASTM A351 GRADE CF8M	
3	BALL	1	1/4" THRU 3/8" ASTM A276 SS316	
3	BALL	1	1/2" THRU 3" ASTM A351 GRADE CF8M	
4	SEAT	2	RTFE	✓
5	JOINT GASKET	1	PTFE	✓
6	STEM SEAL	1	RTFE	✓
7	STEM	1	ASTM A276 SS316	
8	GLAND PACKING	1	PTFE	✓
9	GLAND BUSHING	1	AISI 304	✓
10	LOCK SADDLE	1	AISI 304	
11	STEM NUT	1	AISI 304	
12	HANDLE	1	AISI 304	
13	HANDLE SLEEVE	1	VINYL	
14	STEM WASHER	1	AISI 304	
15	BELLEVILLE WASHER	2	AISI 301	
16	STOP BOLT	1	AISI 304	
17	BOLT NUT	1	AISI 304	
18	GLAND WASHER	1	RTFE	✓
19	HANDLE LOCK	1	AISI 304	
20	O-RING	1	FKM	✓
21	HANDLE NUT	1	AISI 304	
22	ANTI-STATIC DEVICE	2	AISI 316	



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