

24 Series

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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 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 thrust washer and the packing, the pipeline must be de-pressurized.
- 4.2 Take-off the valve from the pipeline.
- 4.3 Place valve in its fully open position.
- 4.4 Take-off end cap with proper equipment (machine).
- 4.5 Close the valve and remove the seat, body seals 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 thrust washer from the stem cavity.
- 4.8 Examine all metallic sealing surfaces such as ball, stem and end cap for damage. If the ball or stem is excessively damaged, ball and stem need to be replaced.

5. RE-ASSEMBLING

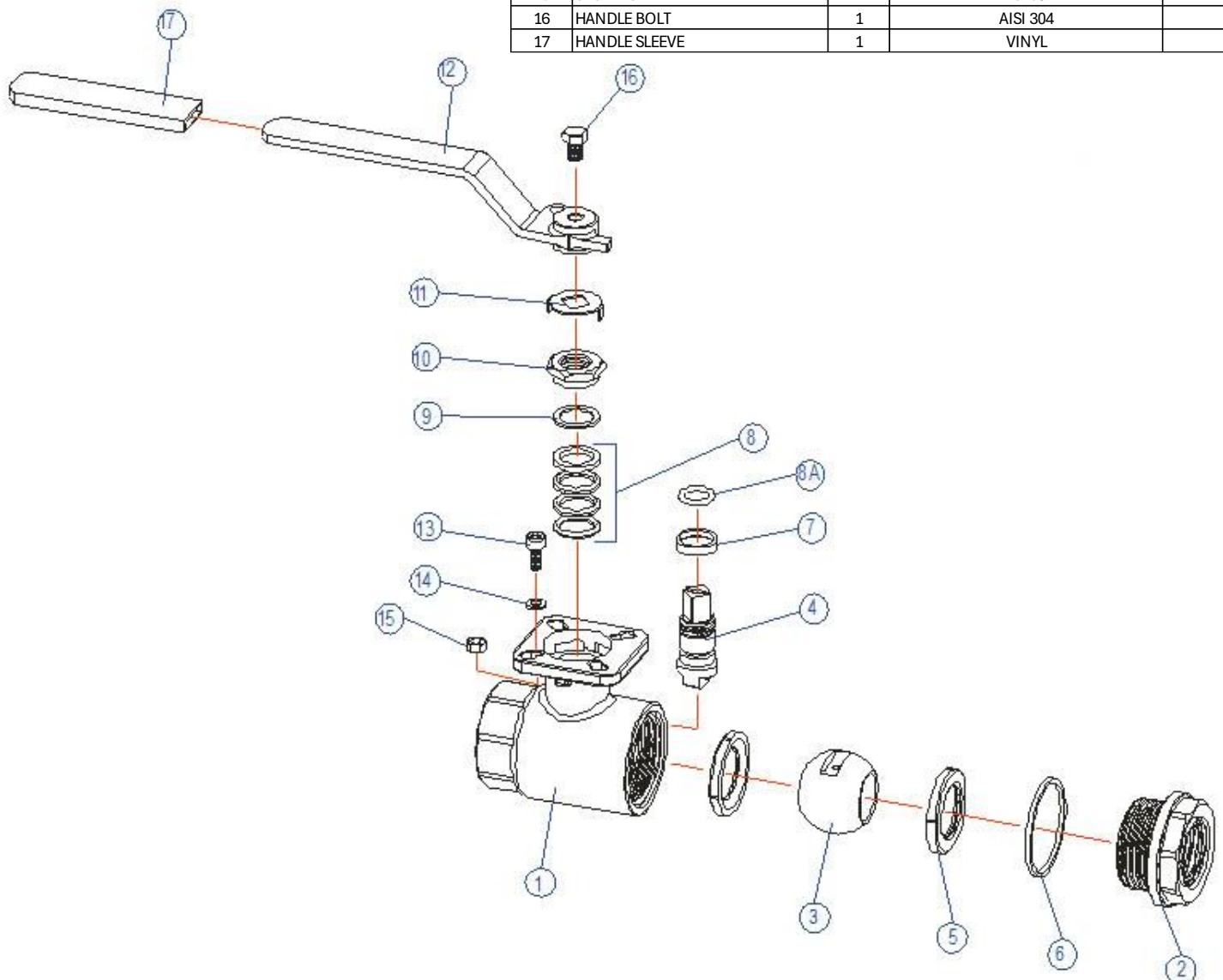
Having assured that all critical surfaces and components have been inspected, cleaned and or replaced, re-assembly can begin.

*** DISASSEMBLY AND CLEANING PROCEDURES :**

- A. Remove Handle (#12) or Actuator Set, Lock Saddle Washer (#11), Stem Nut (#10).
- B. Remove Body (#1), End Cap (#2), The Ball Seat (#5) in the end cap should come out. Remove Body Gasket (#6).
- C. Rotate the stem to “close” position, thus, the Ball (#3) can be taken out easily from Body.
- D. Take out the Ball seat (#5) from Body Seat Pocket.
- E. Pull out Stem (#4), Thrust Washer (#9), Stem Packing (#8) and remove O-ring (#8A), Thrust Washer (#7).

Installation, Operation, & Maintenance Instructions

ITEM	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 1/2" THRU 2" ASTM A351 GRADE CF8M	
4	STEM WITH ANTI-STATIC DEVICE	1	ASTM A276 SS316	
5	SEAT	2	DELRIN®	✓
6	BODY SEAL (JOINT GASKET)	1	GRAPHITE	✓
7	THRUST WASHER (STEM SEAL)	1	DELRIN®	✓
8	STEM PACKING	1	GRAPHITE	✓
8A	O-RING	1	FKM	✓
9	THRUST WASHER (GLAND WASHER)	1	RTFE	✓
10	STEM NUT	1	AISI 304	
11	LOCK SADDLE	1	AISI 304	
12	HANDLE	1	AISI 304	
13	STOP BOLT	1	AISI 304	
14	STOP WASHER	1	AISI 304	
15	STOP NUT	1	AISI 304	
16	HANDLE BOLT	1	AISI 304	
17	HANDLE SLEEVE	1	VINYL	



PROCEDURES TO CHANGE PARTS ASSEMBLY

- A. Install Ball Seat (#5) to Body (#1) Seat Pocket and make sure the spherical curvature is facing the ball.
- B. Put Thrust Washer (#7), O-ring (#8A) to Stem (#4) and slide the stem up through the body, Install Stem Packing (#8) with “V” facing down, then Thrust washer (#9), and stem Nut (#10).
- C. Turn the Stem to “close” position, Line up the Ball slots with Stem Tang and slide Ball (#3) into the position.
- D. Put Ball Seat (#5), and Cap (#2) Turn into Body (#1) · **Torque end cap according to the chart below.**

End Cap Torque	
INCH	IN-LB
1/4"~1/2"	200
3/4"	250
1"	300
1-1/4"	350
1-1/2"~2"RP	400

Stem Nut Torque		
INCH	IN-LB	NM
1/4"	60-80	7-9
3/8"	60-80	7-9
1/2"	60-80	7-9
3/4"	60-80	7-9
1"	90-110	10-12
1-1/4"	90-110	10-12
1-1/2"	130-150	14-17
2"RP	130-150	14-17

F. Test Pressure : API 598.

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